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UNOCAL 

40-8778

August 19, 1992

Mr. John H. Austin
United States
Nuclear Regulatory Commission
Washington, DC 20555

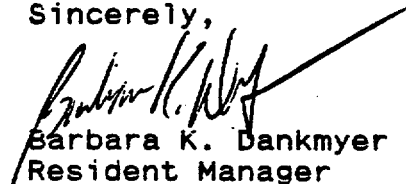
re: Licence No. SMB-1393
Renewal Application

Dear Mr. Austin:

Please find attached Molycorp, Inc.'s request for renewal of the Licence No. SMB-1393 for storage of source material at the Washington, Pennsylvania facility.

Please let me know if there is any other information we should supply for processing of the renewal application.

Sincerely,



Barbara K. Dankmyer
Resident Manager

cc: D. Shoemaker
T. Thomas
G. Dawes
J. Kinneman, NRC Region I
C. Glenn, NRC

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Renewal Application
US NRC Licence
No. SMB-1393

Dated: 18 August 1954
Washington, Pennsylvania

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CHAPTER 1. STANDARD CONDITIONS AND SPECIAL AUTHORIZATIONS

1.1, 1.2, 1.3 See form 313

1.4 POSSESSION LIMITS

Natural thorium, mass no. 90, physical form: slag; maximum amount estimated at 11×10^4 kg. Note: As part of a decontamination and decommission plan a more definitive calculation will be provided. This submission is an estimate without the benefit of more detailed pre decontamination and decommission testing.

1.5 AUTHORIZED ACTIVITIES

The license material was processed at this site over 20 years ago and is no longer processed. Part of the license material is being stored as described herein. The balance of the material will be retrieved and disposed of in accordance with the decommissioning plan to be submitted to US NRC by date outlined in Chapter 5 of this submittal.

1.6 EXEMPTIONS AND SPECIAL AUTHORIZATIONS

Does not apply.

CHAPTER 2. GENERAL ORGANIZATIONAL AND ADMINISTRATIVE REQUIREMENTS

2.1 ORGANIZATIONAL RESPONSIBILITIES AND AUTHORITY

The Radiation Safety Officer (RSO) has the responsibility and authority to maintain a safe operating facility. The RSO will supervise the safety of all Molycorp, Inc. personnel at the plant site. The enclosed organization chart attachment I shows the lines of authority.

The RSO has the authority to shutdown any plant site operations which he believes threatens the health or safety of personnel or the public.

2.2 PERSONNEL EDUCATION AND EXPERIENCE REQUIREMENTS

A 24-hour radiological safety orientation course has been given to the selected supervisory, safety personnel (with a minimum of (2) years industry technical experience) of Molycorp, Inc. Attachment II contains a typical outline that has been used by Applied Health Physics Inc. in training Radiation Safety Officers.

George Dawes has been given the responsibility and authority to serve as Radiation Safety Officer. Any changes by Molycorp in Radiation Safety Officer will have similar qualifications. George Dawes resume is enclosed as Attachment III. In his absence, George Dawes will designate a competent individual to serve as Radiation Safety Officer.

2.3 ALARA POLICY

Molycorp, Inc. has a strong commitment to ensure that exposures to radiation will be maintained "as low as reasonably achievable" (ALARA). This policy will be implemented by maintaining licensed material in a restricted area under supervision of the Radiation Safety Officer. See item 3.8 of this chapter for a description of this containment area. All retrieval of additional contaminated material will be performed under NRC approved ALARA guidelines.

2.4 SAFETY REVIEW COMMITTEE

A quarterly audit of the Molycorp, Inc. Radiation Safety Program (see attachment IV) will be conducted quarterly by International Technology (IT Corp.). Reports will be distributed to management and maintained on file.

2.5 TRAINING

See item 2.2 of this chapter and Attachment IV, (RSO Operating Manual) for Molycorp, Inc. training program.

2.6 PROCEDURES

The Molycorp, Inc. RSO will conduct a weekly physical inspection of the restricted area containing the licensed material checking the integrity of the pile cover, fence and signs. These procedures are reviewed quarterly during the IT Corp. audit.

Molycorp, Inc. does not have any provisions for unplanned activities since the the licensed material is not being used in plant production nor handled by employees.

2.7 AUDITS AND INSPECTIONS

The Molycorp, Inc. RSO conducts weekly storage pile inspections as described in item 2.6 and IT Corp. conducts quarterly audits of all radiological safety programs and procedures. Reports are copied to management and kept on file.

2.8 RECORDS

See Part C, RECORDS, attachment IV RSO Operating Manual.

CHAPTER 3. RADIATION PROTECTION

3.1 RESTRICTED AREAS - ACCESS CONTROL

1. Posting and labeling: Signs are posted to inform potential intruders of radiation.
2. The restricted area is fenced with 6' high cyclone fence with three strands of barb wire as a means of controlling access.
3. Protective clothing is not required since employees do not handle licensed material.
4. Personnel cleanup provisions are not required since Molycorp employees do not handle licensed material.
5. Plant equipment does not handle or process licensed material.

3.2 RADIOACTIVITY MEASUREMENT INSTRUMENTATION

Instrumentation used and stored at Molycorp, Inc. include:

- A. (1) Dosimeter Model 3700.
- B. (1) Bicron, Micro Analyst.

All radiation instrumentation is calibrated and serviced as required. Calibration is performed using radiation sources standardized by or traceable to U.S. National Bureau of Standards.

3.3 OCCUPATIONAL EXPOSURE CONTROL

Since no material is handled or used in processing at this site, this does not apply.

3.4 VENTILATION

Since no material is handled or used in processing at this site, this does not apply.

3.5 WORK-AREA AIR SAMPLING

Since no material is handled or used in processing at this site, this does not apply.

3.6 SURFACE CONTAMINATION

Since no material is handled or used in processing at this site, this does not apply.

3.7 BIOASSAY

Since no material is handled or used in processing at this site, this does not apply.

3.8 WASTE MANAGEMENT

All licensed material is stored on site. The pile is capped with approximately two feet of clay that is vegetated with Crown Vetch to prevent erosion. The perimeter of the pile is ditched approximately 1-1.5 feet. The stream side is also diked with approximately 4 feet of clay. The entire area is fenced with a six foot cyclone fence topped with three strands of barb wire. Signs are posted on all sides. See enclosed sketches in Attachment V.

CHAPTERS 4 & 5 ENVIRONMENTAL PROTECTION AND DECOMMISSIONING PLAN

Molycorp, Inc. has agreed to the following schedule for decommissioning of the Washington PA site:

Submittal of Site Characterization Plan - October 1, 1992

Submittal of Decommissioning Alternatives and Potential Costs - Molycorp, Inc. will provide the US NRC a list of potential decommissioning and disposal alternatives by March 1, 1993. Each alternative will be costed out to the best of Molycorp's ability at the time of submittal. A revised version of the report will be included in the Site Decommissioning Plan.

Submittal of Site Characterization Report - Molycorp, Inc. will provide a report detailing the results of the site characterization to the US NRC no later than eight (8) months after the Site Characterization Plan has been approved in writing by the US NRC.

Submittal of Site Decommissioning Plan - This Plan is to be submitted to the US NRC no later than six (6) months after submittal of the Site Characterization Report.

Completion of Decommissioning - Molycorp, Inc. will have completed site clean up and disposal of the source material in accordance with the approved Site Decommissioning Plan. Molycorp will have notified the US NRC in writing of this completion of decommissioning activities prior to May 30, 1995.

This schedule supersedes all prior schedules including but not limited to the one outlined in Molycorp's letter to Mr. John H. Austin, US NRC, dated August 6, 1992.

CHAPTER 6. SAFETY DEMONSTRATION

6.1 EDUCATION AND EXPERIENCE OF KEY PERSONNEL

See Chapter 2, section 2.2 and Attachment III.

6.2 PROCESS DESCRIPTION

No source material has been processed at this site for at least 20 years. Therefore the current plant processes do not handle licensed material.

6.3 RADIATION PROTECTION

All pertinent information has been included in Chapter 3 and Attachment IV, RSO Operating Manual.

CHAPTER 7. PERFORMANCE DEMONSTRATION

7.1 LICENSE HISTORY

In 1963 Molycorp applied for its NRC license in order to process Columbian ores containing 1-2% Thorium as an unwanted contaminant. The original license (SMB 744) was issued 12/19/63. Amendments were added in 1965 and 66.

The license was renewed in 12/66 and amended on 11/67. The next renewal was 4/77.

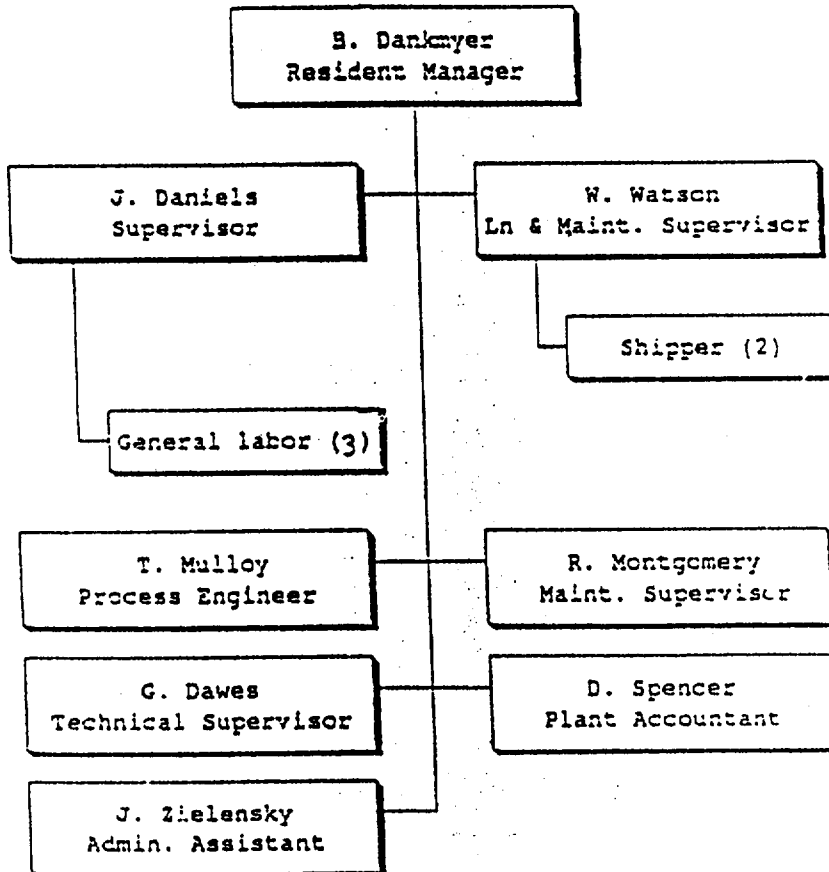
The license was amended in 1981. The amending resulted in renewal and issuance of the current license #SMB 1393. This is the renewal of that license.

7.2 EXPOSURE HISTORY

No history available. No source material has been processed in at least 20 years.

ATTACHMENT I

MOLYCORP INC.
WASHINGTON PLANT



RSO OUTLINE AND SCHEDULEMONDAY

<u>Lecture #</u>	<u>Topics</u>
8:30-10:00 a.m.	Introductions, descriptions of course, and distribution of training materials.
10:00-11:00 a.m. 1	Natural Radioactivity & Environmental Sources of Radiation
11:00-12:00 p.m. 2	Applications of Radiation and Radioactivity
12:00-1:00 p.m.	LUNCH
1:00-2:00 p.m. 3 & 4	History of Adverse Effects of Radiation and the Philosophy of Radiation Control
2:00-3:00 p.m. 5	Safety Standards and Regulatory Control of Ionizing Radiation
3:00-3:30 p.m.	COKE BREAK
3:30-4:30 p.m. 6	Units, Terms and Definitions & Organizing and Operating Radiation Safety Programs
4:30-5:00 p.m.	Review and Discussion Schedule private review of your radiation safety program.

TUESDAY

8:00-8:30 a.m.	QUIZ #1
8:30-9:00 a.m.	Videotape #1 - "A is for Atom"
9:00-10:30 a.m. 7	Atomic and Nuclear Structures and Radioactivity
10:30-10:45 a.m.	COFFEE OR TEA BREAK
10:45-12:00 p.m. 8	Radioactivity and Ionizing Radiation
12:00-1:00 p.m.	LUNCH
1:00-2:30 p.m. 9	Interaction of Radiation with Matter
2:30-2:45 p.m.	COKE BREAK
2:45-5:00 p.m. 11	Radiation Shielding and Use of Inverse Square Law

RSO COURSE OUTLINE AND SCHEDULE

WEDNESDAY

	<u>Lecture #</u>	<u>Topics</u>
8:30-9:00 a.m.		Quiz #2
9:00-10:30 a.m.	10	Instrumentation for the Detection and Measurement of Ionizing Radiation
10:30-10:45 a.m.		COFFEE OR TEA BREAK
10:45-12:00 p.m.	12	Biological Effects of External Radiation
12:00-1:00 p.m.	13	Biological Effects of Internal Radiation
1:00-2:00 p.m.		LUNCH
2:00-3:15 p.m.	15	Personnel Monitoring
3:15-4:30 p.m.	16	Audit, Evaluation & Control of Radiation Risks
4:30-5:00 p.m.		Video Tapes

THURSDAY

8:30-9:00 a.m.		Quiz #3
9:00-10:30 a.m.	17	Documentation and Effective Management of a Radiation Safety Program
10:30-10:45 a.m.		COFFEE OR TEA BREAK
10:45-12:00 p.m.	18	Management of Emergencies, Incidents & Crises
12:00-1:00 p.m.		LUNCH
1:00-2:00 p.m.	19	Packaging, Transporting & Disposing Radioactive Materials
2:00-2:15 p.m.		COKE BREAK
2:15-3:15 p.m.		Introduction to Nonionizing Radiation
3:15-5:00 p.m.	20A	Optical Radiation

ATTACHMENT IV

Molycorp, Inc. - Washington, PA

RADIATION SAFETY OFFICER'S OPERATING MANUAL (Updated 2/24/86)

The following items will be checked by the Radiation Safety Officer (RSO) at the frequency suggested.

A. PERSONNEL

1. Safety Orientation of all who work with radiation producing equipment and/or radioactive material, who frequent areas in which this equipment or materials are used.

Frequency: Initially pre-placement, prior to change in type, amount, use of affecting degree of radiation risk.
2. Personnel Monitoring (film badges)
 - a. Insurance by RSO to all persons who work with radiation producing equipment (X-ray diffraction equipment).
 - b. Records of results of personnel monitoring are checked and initialled by RSO upon receipt each month; reviewed quarterly-summarized annually.
 - c. Exposure Investigation-without delay, RSO attempts to find cause for unusual exposure of personnel monitoring devices documented by employee's written report to be reviewed by RSO together with employee's supervisor, and recommendation made to avoid reoccurrence.
3. Notice to Employee Form NRC-3, and Pa "notice to employees" shall be posted by the RSO at such location that those employees involved with radiation equipment and/or radioactive material will be able to read the document. Check posting quarterly.
4. Personnel Protection: Not required since no Molycorp personnel will handle licensed material.

D. CONTROL OF RADIOACTIVE MATERIALS AND RADIATION PROTECTIVE EQUIPMENT

1. Procurement RSO shall be notified of all requests for purchase, sale, transfer or disposal of any radioactive materials or any electrical equipment which is known to, or suspected of being capable of producing ionizing radiation. RSO shall immediately check to assure company compliance with regulations of US-NRC and Pa. concerning registration and license restrictions. Copies of purchase orders, bills of lading shall be filed with RSO.
2. Posting and Labeling RSO shall monitor all shipments (in and/or out of Molycorp) to assure compliance with US-NRC and US-DOT regulations relative to proper labeling of contents, posting of areas and placarding of vehicle.
3. Radiation Survey
 - a. Weekly physical inspection shall be conducted by the RSO of the integrity of the licensed material pile, cover, fence and signs. IT Corp. shall conduct a quarterly radiological survey of all areas where radioactive materials are stored. IT Corp. shall conduct annual inspection of x-ray equipment. More frequent inspections or surveys shall be performed if personnel monitoring indicates a potential problem. Documentation of all surveys shall be kept on file by RSO.
 - b. The RSO shall make certain that exposure to employees and the public shall not exceed current permissible levels and that licensed radioactive materials are stored in accordance with applicable regulations and the conditions of the company's license.
 - c. Emergency Survey RSO shall monitor without delay an area suspect of causing or threatening to cause radiation risk. Results of such surveys shall be recorded and official notification made in accordance with NRC regulations.
4. Health physics instrument, procurement, calibration, and maintenance shall be under the supervision of the RSO

It is the RSO's responsibility to maintain a sufficient number of portable radiation survey instruments in working condition to monitor accurately ($\pm 10\%$) Alpha, beta, and gamma radiation.

 - a. Portable survey meters shall be calibrated once every year or before use following any repair.

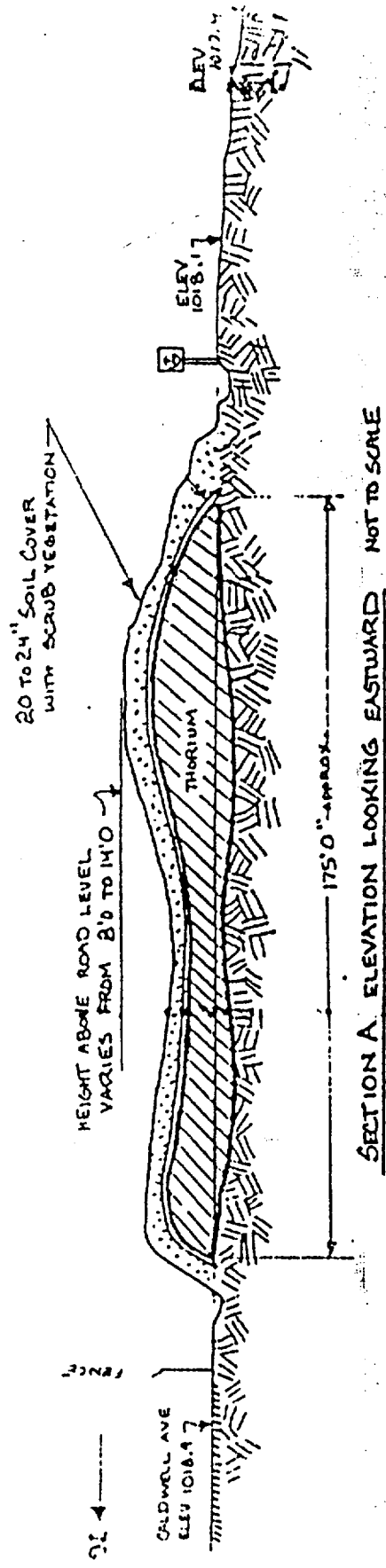
5. Training The RSO shall provide radiation safety orientation for all employees whose jobs may involve working with radiation producing equipment. He will present factual information concerning the nature of the radiation risks and methods of assuring that the control radiation risks and methods are effective. The RSO will also inform employees of the availability of sources of additional pertinent information including the following:

- a. Molycorp Radiological Safety Procedures Manual
- b. NRC regulations

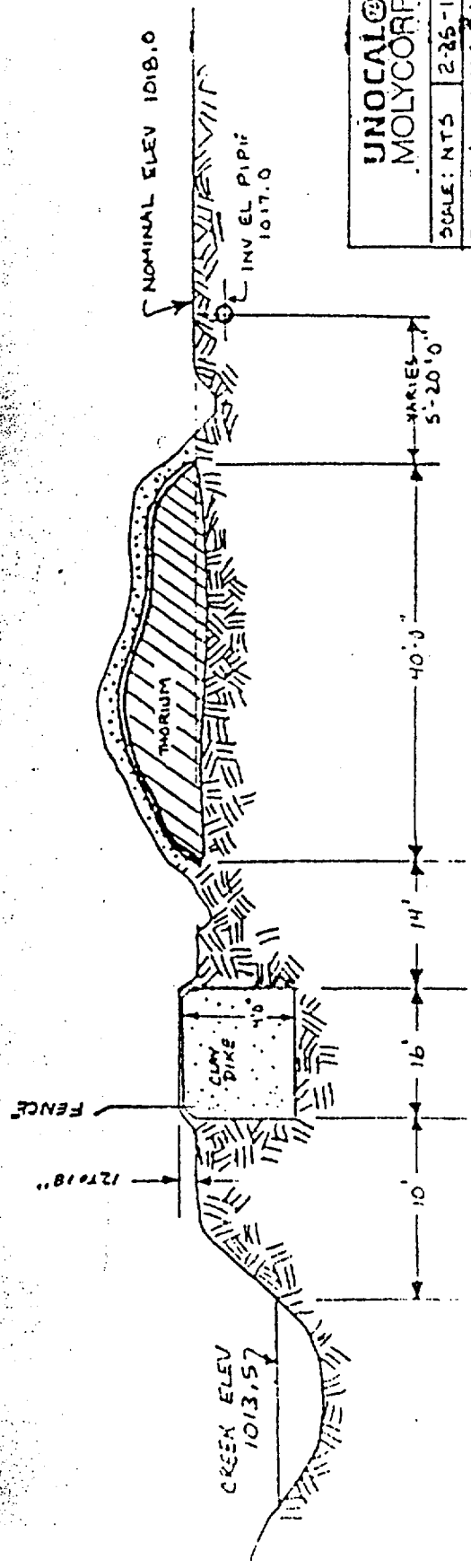
C. RECORDS

1. Radiation Records and files shall be maintained for or by the RSO in an accurate orderly manner, readily available for inspection by authorized federal, state, and company officials. Among those files and records maintained for or by the RSO shall be the following:

- a. Personnel radiation monitoring: Monthly film badge reports.
- b. Radioisotope inventory: (1) shipping and receiving records. (2) source materials.
- c. Radiation survey reports: Quarterly by IT Corp.
- d. Instrument calibrations: portable survey meters by IT Corp.
- e. Training records: (1) employee indoctrination, safety orientation. (2) RSO training.
- f. Inspection reports on file: (1) US-NRC. (2) Pa Health Dept. (3) Other.
- g. Licenses and registrations: (1) US-NRC source materials. (2) X-ray producing equipment.
- h. Regulation: (1) US-NRC Title 10-CFR-30, 32, 33, 34, 35, and 40. (2) US-DOT. (3) Pa regulations.



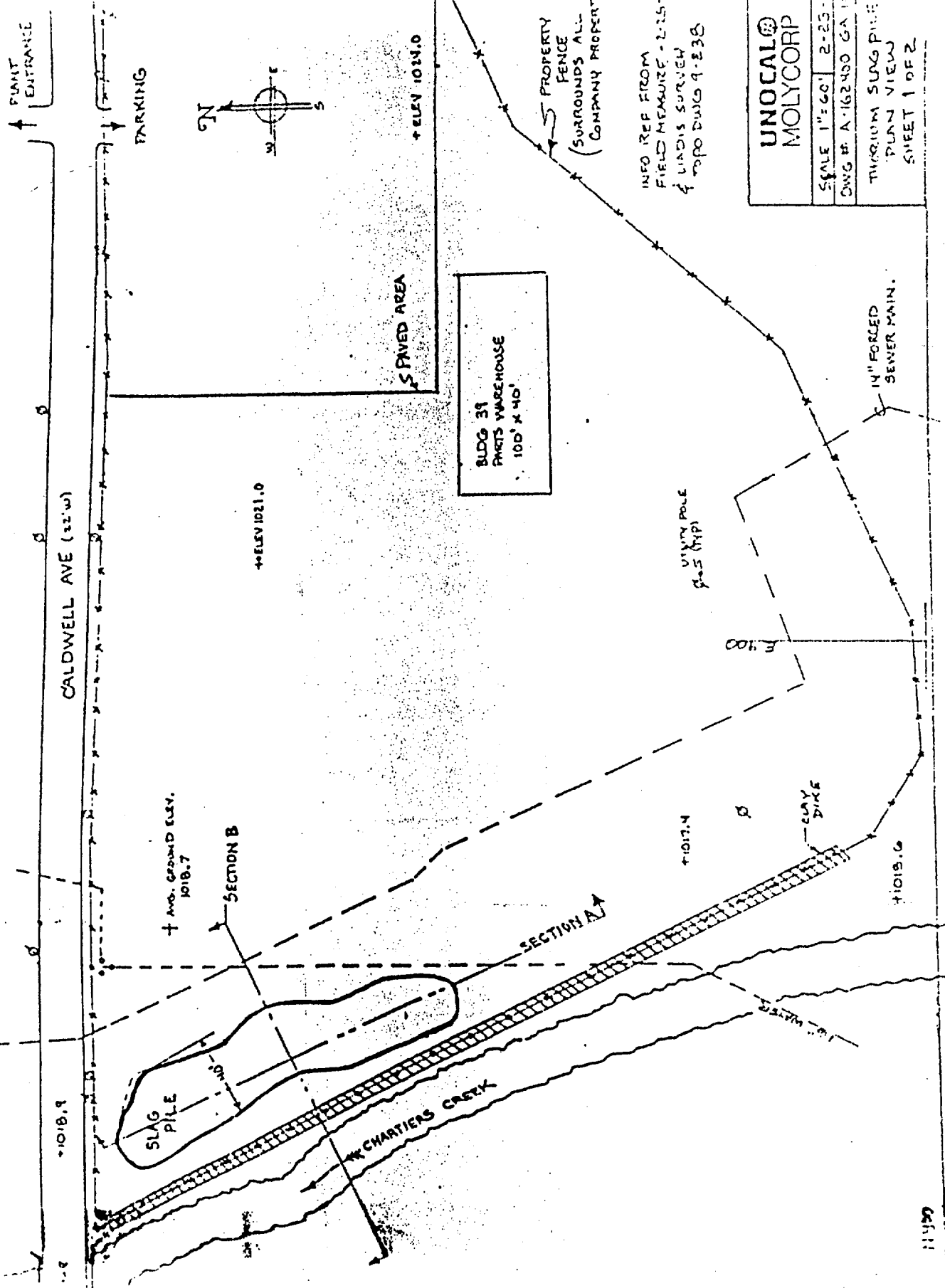
SECTION A ELEVATION LOOKING EASTWARD NOT TO SCALE



SECTION B ELEVATION LOOKING NORTHWARD NOT TO SCALE

UNOCAL[®]	
MOLYCORP.	
SCALE: NTS	2-25-1986
DWG #	A-162490 BA 102
THORIUM SLAG PILE ELEVATIONS	
SHEET 2 OF 2	

Attachment V



UNOCAL MOLYCORP

SCALE	1"=60'	2-25
DWG #	A-162400	GA 10

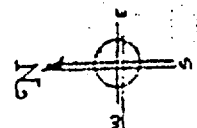
TITANIUM SLUG PILE
PLAN VIEW
SHEET 1 OF 2

INFO REF FROM
FIELD MEASURE - 2-25-
LAND'S SURVEY
TOPO DWGS 9-238

PROPERTY FENCE
(SURROUNDS ALL
COMPANY PROPERTY)

BLDG 39
PARTS WAREHOUSE
100' X 40'

PAVED AREA



PUMP
ENTRANCE

PARKING

CALDWELL AVE (SE.W)

+ AVE. GROUND ELEV.
1018.7

+ELEV 1021.0

SECTION B

SECTION A

SLAG
PILE

CHARLIERS CREEK

UTILITY POLE
9.5 (TIP)

+1017.4

CLAY
DIKE

14" FORCED
SEWER MAIN.

+1015.6

11/80