



INTERNATIONAL
URANIUM (USA)
CORPORATION

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June 16, 2000

VIA FACSIMILE AND OVERNIGHT MAIL

Mr. Philip Ting, Branch Chief
Fuel Cycle and Safety and Safeguards Branch
Division of Fuel Cycle Licensing
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
2 White Flint North
11545 Rockville Pike, Mail Stop T-7J9
Rockville, MD 20852

Re: Amendment Request to Process an Alternate Feed Material from the Linde FUSRAP Site
at the White Mesa Uranium Mill
Source Material License SUA-1358

Dear Mr. Ting:

International Uranium (USA) Corporation ("IUSA") hereby submits supplemental information in response to issues raised in connection with the above-named request for amendment to Source Material License SUA-1358.

IUSA submitted, on May 15, 2000, a report entitled Tailings Capacity Evaluation in support of the above-named request for amendment. This report was prepared in response to a question received from the NRC regarding the capacity of the tailings system at the White Mesa Mill for the disposal of the tailings from the Linde FUSRAP material and the other approved and pending materials, plus the estimated quantity from the eventual reclamation of the tailings system and the mill site. The attached is Addendum 1 to this report, prepared by Harold Roberts, P.E.

This addendum provides further detail on the modification to the implementation of the Reclamation Plan to allow for storage, in the Cell 1-I impoundment area, of an estimated 325,000 tons of relatively dry contaminated material generated during the final reclamation of the facility. As stated in the previous report the relatively dry reclamation materials (i.e., material from windblown areas and mill debris) would be placed along the upstream face of the dike between Cell 1-I and Cell 2, extending along the entire length of the dike. The area containing the additional volume of materials in Cell 1-I will be lined with up to 18 inches of

NMSSO/Public

Mr. Philip Ting
June 16, 2000
Page 2 of 2

compacted clay. The cap for this area, including random fill, clay cap and rock armour would extend from the Cell 2 area as a continuous layer over the additional material.

The differential cost, from the approved Reclamation Plan, for the use of Cell 1-I impoundment for storage of final reclamation material is now estimated at about \$484,445.

I entrust the foregoing provides the NRC with the information required in order to resolve the issue regarding tailings capacity for the Linde materials. I can be reached at (303) 389-4131 if there are any further questions or comments NRC may have.

Sincerely,



for Michelle R. Rehmann
Environmental Manager

MRR

cc: Ronald E. Berg
William N. Deal
David C. Frydenlund
Ron F. Hochstein
William Sinclair/UDEQ
Don Verbica/UDEQ
William von Till/NRC

Addendum 1

Tailings Capacity Evaluation

**White Mesa Uranium Mill
Blanding, Utah**

Prepared by

Harold R. Roberts, P.E.

for

**International Uranium (USA) Corporation
Denver, Colorado**

June 2000

Addendum 1

Proposal for Containment of Contaminated Materials in Cell 1-I

Based on the **Forecast Tailings Requirements**, detailed in Section II of the **Tailings Capacity Study**, May 2000, prepared for International Uranium (USA) Corporation, there is an apparent shortfall in existing approved storage capacity of approximately 200,000 cubic yards, assuming the Mill is placed in to final decommissioning upon completion of the currently planned processing runs. This assumes all of the estimated quantities of reclamation materials and currently projected processing volumes detailed in the Tailings Capacity Study are disposed of in Cell 2 or Cell 3.

One of the alternatives to handle the additional volume is to modify the existing Reclamation Plan to allow for disposal and capping, upon final site reclamation, of a quantity of contaminated material in the Cell 1-I impoundment area. This alternative would modify the current approved Reclamation Plan to allow for placement of approximately 280,000 yd³ of material from the Mill site cleanup along the north slope of the Cell 2 dike, within a portion of the current Cell 1-I. The current Reclamation Plan specifies that all of the contaminated materials from Cell 1-I are to be removed from the Cell upon final site reclamation, and the impoundment is to act as a sedimentation basin with an outlet to the canyon on the west side of the site. A scenario, which does not deviate from the general concepts of the existing Reclamation Plan, is to use a portion of the existing Cell 1-I excavation to store low moisture content material from the mill site, windblown areas and the mill debris, upon final decommissioning of the site.

Under a scenario where final decommissioning of the Mill is initiated after processing the currently planned alternate feed materials, totalling approximately 300,000 yd³, the crystals and sludge from Cell 1-I and Cell 4A, 630,000 yd³, would be placed into the remaining capacity in Cell 2 and Cell 3. This 930,000 yd³ would consume almost all of the remaining capacity in Cell 2 (30,000 yd³) and Cell 3 (980,000 yd³).

A proposed alternative for disposal of the remaining contaminated materials and debris from the Mill area reclamation would be to place the material along the upstream face of the dike between Cell 1-I and Cell 2, extending along the entire length of the dike. See the attached Figure III-1. The estimated volume of this material, 280,000 yd³, would cover an area approximately 175 feet wide along the 2,400 foot length of the dike. The total additional area would be approximately 10 acres. The width of the additional contaminated material would vary depending on the final volume of cleanup materials, and the concept would give the added advantage of having additional storage, if needed, in the remaining area of the Cell. The area containing the additional volume of contaminated materials in Cell 1-I will be lined with up to 18 inches of compacted clay, equal in quality to the material currently specified for use as the radon cap. The final design of the clay liner would be in accordance with regulations in effect at the time of final decommissioning of the mill.

The material placed in the clay lined Cell 1-I area will be relatively dry (estimated to be less than 10% moisture content) and quickly covered with the engineered tailings area cap. The cap, including random fill, clay cap and rock armor would extend from the Cell 2 area as a continuous layer over the additional material. The cap will extend down the 5:1 slope on the upstream face of the extended disposal area, and tie into the clay bottom liner to create a full containment envelope around the contaminated materials. This will prevent any natural precipitation from moving through the material, and in conjunction with the bottom liner will eliminate the potential for migration of contaminants from this area.

The current reclamation plan specifies that the Cell 1-I impoundment area is to act as a sedimentation basin with an outfall to the canyon on the west side of the site. This concept will still be preserved with approximately 80% of the Cell 1-I area still available for the sedimentation basin. The final location of the outfall channel will be adjusted based on the volume and area of material stored in Cell 1-I.

The cost for handling all the volumes of contaminated materials are included in the cost estimate of the current approved Reclamation Plan. The only additional cost for this option is the installation of the clay bottom liner and extension of the final cover, as detailed in the currently approved Reclamation Plan, over the additional area in Cell 1-I. Assuming the same unit rates and productivity as estimated for the Cell 3 cap, the additional area will increase the reclamation cost by \$484,000, including all of the NRC required factors and contingencies. See the attached Table III-2.

The placement of material in the Cell 1-I area would be one of the final scheduled events in the decommissioning of the Mill. Depending on the actual volume of material processed through the Mill, a portion of the volume of material from the decommissioning and cleanup of the Mill site area may be needed for use in establishing the final grades and contours, prior to installation of the reclamation cap, in the Cell 2 and Cell 3 impoundments. The remaining volume will be placed into the proposed disposal area in the Cell 1-I impoundment. Clay material obtained from the Section 16 borrow area, specified as an alternative for use in the construction of the radon barrier for Cell 2 and Cell 3, will be used to construct the bottom liner of the Cell 1-I disposal area. Contaminated material from the Mill site decommissioning will then be placed in the Cell 1-I disposal area and the reclamation cap previously placed over Cell 2 will be extended over the additional area as detailed in the attached Figure III-1.

Table III-2

Cost for Reclamation of Additional Area of Cell 1-I

Extension of Full Reclamation Cover

Cost per Acre (from Cell 3 estimate)	\$20,873.00
Total Additional Acres	<u>10</u>
Base Cost	\$208,730.00

Additional Cell 1-I Liner Installation

Clay Liner, Cell Bottom & Slope (40,000 cy @ 2.84)	\$113,600
Slope reduction (included in original estimate)	\$0

Extension of Reclamation Cover, Upstream Face

Clay Cap, Side Slope (11,111 cy @2.84)	\$31,556
Lower Random Fill (3 ft.) (included in original estimate)	\$0
Upper Random Fill (2 ft.) (22,222 cy @1.24)	\$27,567
Rock Armor (included in original estimate)	<u>\$0</u>

Sub-total **\$381,453**

NRC Required Factors

Profit Allowance	10.00%	\$38,145.30
Contingency	15.00%	\$57,217.95
Licensing and Bonding	2.00%	\$7,629.06

Total Additional Cost **\$484,445**

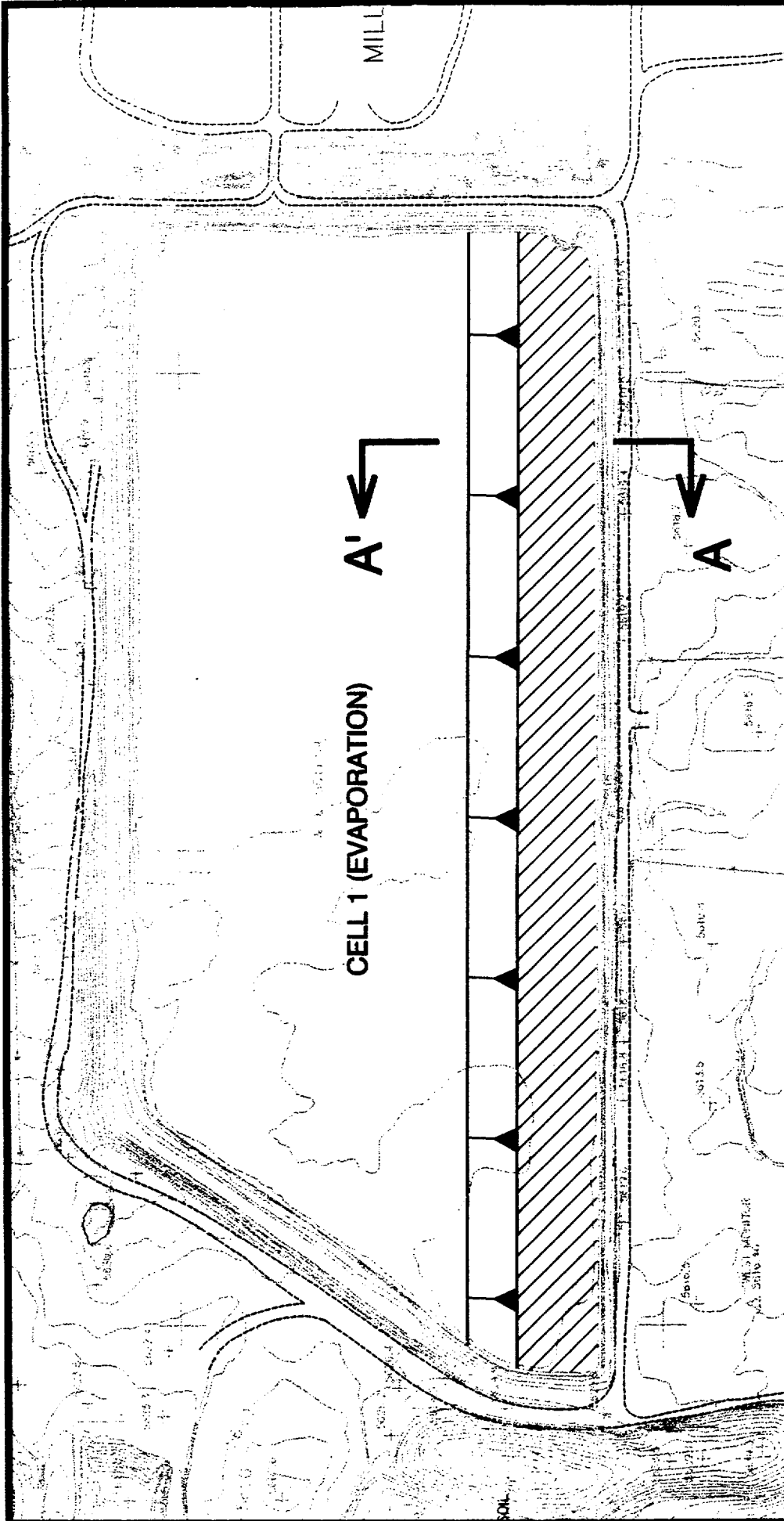
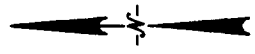
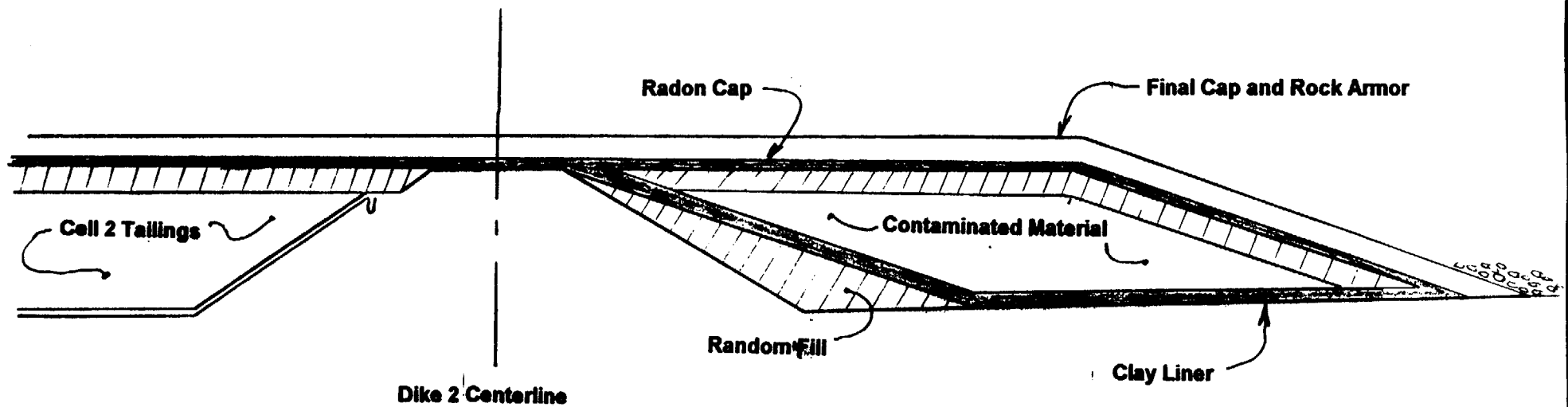


Figure III-1

International Uranium (USA) Corporation		Project: White Mesa Mill	
Country: San Juan	State: Utah		
Location:			
REVISIONS	Date	By	
Scale: 1" = 300'		Date: May 4, 2000	Cell Rec:
Author: HSR		Drafted By: S. Smith, et al	

**PROPOSED DISPOSAL AREA
FOR MILL SITE CONTAMINATED
MATERIALS AND DEBRIS**





SECTION A-A'
(See Figure III-1)

International Uranium (USA) Corporation			
Project		White Mesa Mill	
REVISIONS		County: San Juan	State: Utah
Date	By	Location:	
6-B	HR	CROSS SECTION A-A'	
		Scale: N/A	Date: May 4, 2000
		Author: HRR	Drafted By: SledtCad
			Xsect-A