

# **QUIVIRA MINING COMPANY**

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June 3, 1996

Certified Mail  
Return Receipt Requested (P 268 360 552)

Mr. Joseph Holonich, Branch Chief  
Uranium Recovery Branch  
Division of Low Level Waste Management  
and Decommissioning  
11555 Rockville Pike  
Rockville, MD 20850

Re: **License No. SUA-1473**  
**Docket No. 40-8905**

Dear Mr. Holonich:

Quivira Mining Company respectfully requests amendment of its source material license, SUA-1473, to extend the milestone date established within license condition #40.A.1 for completion of windblown tailings retrieval and placement from July 31, 1997 to December 31, 1998.

Quivira is requesting this short extension due to unexpected delays encountered in obtaining the necessary permit to access State lands which were delineated for windblown tailings clean-up within Quivira's approved reclamation plan. Quivira has subsequently received approval to access the land and retrieval of the windblown tailings is in progress in this area.

In addition to this, continued operation of the NRC approved corrective action plan is presently impeding Quivira from accessing a small area north of the mill reservoir which was previously delineated for clean-up.

Although Quivira is requesting this short extension for windblown retrieval activities, Quivira has already completed the radon barrier for the tailings impoundments in accordance with the NRC approved reclamation plan; thereby limiting radon emissions from the facility. Radon flux measurements obtained from the impoundments indicated average radon flux rates of less than 2 picocuries per square meter per second for both impoundments; well below the 20 picocuries per square meter per second compliance standard.

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Mr. Joe Holonich

June 3, 1997

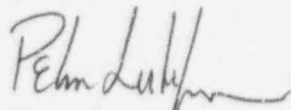
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Quivira believes that this extension request is warranted as compliance with the Memorandum of Understanding established between NRC and EPA has been achieved and extending the milestone for windblown retrieval will not alter this compliance status.

Please contact me at (505) 287-8851, extension 205 if you have any questions regarding this submittal.

Regards,

QUIVIRA MINING COMPANY

A handwritten signature in dark ink, appearing to read "Peter Luthiger", with a stylized flourish at the end.

Peter Luthiger  
Supervisor, Radiation Safety  
and Environmental Affairs

Enclosure

xc: T. Fletcher  
M. Freeman  
P. Luke  
NRC (Arlington)  
file

QUIVIRA MINING COMPANY  
Request For Milestone Extension  
For License Condition 40.A.1

**Introduction**

The Memorandum of Understanding ("MOU") between the Environmental Protection Agency ("EPA"), the Nuclear Regulatory Commission ("NRC"), and Agreement States established procedures for these agencies to implement steps to ensure owners and operators of existing uranium mill tailings disposal facilities licensed by NRC who have ceased operations effect emplacement of a final earthen cover to limit radon emissions to a flux of no more than 20 picocuries per square meter per second ( $\text{pCi}/\text{m}^2\text{-s}$ ) as expeditiously as practicable considering technological feasibility.

As a result of this MOU, NRC amended Quivira's source material license on January 22, 1993 by adding license condition #40, which established the milestone dates for Quivira to meet in order to comply with the radon emission standard. License condition 40.A states:

A. *To ensure timely compliance with target completion dates established in the Memorandum of Understanding with the Environmental Protection Agency (56 FR 55432, October 25, 1991), the licensee shall complete reclamation to control radon emissions as expeditiously as practicable, considering technological feasibility, in accordance with the following schedule:*

(1) *Windblown tailings retrieval and placement on the pile - July 31, 1997.*

To ensure continued compliance with the commitments established in the license and MOU, Quivira continued implementing the NRC approved reclamation plan for the facility. As a result of Quivira's February 1994 request and subsequent approval by NRC in January 1995 to modify the reclamation plan, Quivira completed final emplacement of the radon barrier in September 1996. Subsequent testing of the cover for radon emissions indicated that compliance with the  $20 \text{ pCi}/\text{m}^2\text{-s}$  radon flux standard was achieved as the average flux rates for both impoundments were less than  $2 \text{ pCi}/\text{m}^2\text{-s}$ .

EPA stated within the December 31, 1991 federal register notice to stay the effectiveness of 40 CFR Part 61, Subpart T that the MOU is directed only to compliance

with the 20 pCi/m<sup>2</sup>-s radon flux standard<sup>1</sup> [emphasis added]. Quivira successfully achieved compliance with the MOU by limiting radon emissions from the facility almost one year ahead of the schedule established within the license.

Notwithstanding these facts, Quivira respectfully requests an extension of the windblown tailings retrieval milestone established within license condition #40.A.1 for completion of windblown tailings retrieval and placement from July 31, 1997 to December 31, 1998.

#### **Extension Request For Windblown Retrieval**

NRC established the milestone date for windblown tailings retrieval for Quivira's Ambrosia Lake facility within license condition 40. License condition 40.A states:

- A. To ensure timely compliance with target completion dates established in the Memorandum of Understanding with the Environmental Protection Agency (56 FR 55432, October 25, 1991), the licensee shall complete reclamation to control radon emissions as expeditiously as practicable, considering technological feasibility, in accordance with the following schedule:

- (1) Windblown tailings retrieval and placement on the pile - July 31, 1997.

Quivira Mining Company respectfully requests amendment of its source material license, SUA-1473, to extend the milestone date established within license condition #40.A.1 for completion of windblown tailings retrieval and placement from July 31, 1997 to December 31, 1998 for the following reasons:

1. Delays in acquiring necessary access permit;
2. Inclement weather;
3. Inaccessibility to some areas delineated for windblown tailings retrieval due to other licensed activities.

These items are discussed below.

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<sup>1</sup> 56 FR 67537, December 31, 1991.

1. Delays in Permit Approvals

Quivira has continued to implement the approved reclamation plan including windblown tailings retrieval. Quivira's delineation of areas associated with windblown tailings contamination indicated that some areas identified as containing windblown tailings were situated on property not in Quivira's control. This area, which is owned by the State of New Mexico, is directly east of the mill facility (Figure 1). The mill is situated on Section 31, T14N, R9W; while the State owns the majority of Section 32, T14N, R9W. Areas previously delineated are located in the western half of Section 32. The State of New Mexico requires an access permit in order to perform the activity. This permit approval process includes obtaining determinations associated with the archaeological, cultural, and historical significance of the land. Surveys performed within and surrounding the project area provided the necessary archaeological clearances for the area.

Quivira ultimately received official approval from the State of New Mexico to access the area on May 7, 1997. Upon receipt of the approved permit, Quivira began an initial pass to retrieve windblown tailings on Section 32 in accordance with the conditions stipulated in the permit. Progress has been impeded slightly due to inclement weather during May 1997.

With this access permit approval, Quivira anticipates completing an initial pass on all areas previously delineated for windblown tailings retrieval with the exception of the area discussed in item 3 below (pending no additional delays due to weather) July 31, 1997. Verification of clean-up, however, must be completed following this initial phase. Based on initial sampling information, the initial pass is expected to be very successful in retrieving the windblown tailings; and any successive passes are not expected to encompass large areas.

2. Inclement Weather

Quivira received final approval from the State of New Mexico to access the Section 32 area on May 7, 1997. New Mexico, however, experienced weather during May which was more characteristic of the summer wet season. These unexpected rains, primarily during the week of May 19, 1997, created slick travel conditions upon the clayey alluvium which prevented the use of heavy equipment in a safe manner.

Unfortunately, the inclement weather coincided with the timing of approval of the access permit from the State; which prevented Quivira from performing any work activity with heavy equipment until conditions allowed for safe travel. Pending no additional delays due to weather, Quivira anticipates that an initial pass on all

areas delineated for windblown tailings retrieval should be completed by July 31, 1997; with verification of clean-up following this initial phase.

3. Inaccessibility to Areas Due to Other Licensed Activities.

Quivira's ground water corrective action plan (CAP) for the alluvium, approved by NRC as a component of license condition #34, requires Quivira to utilize an interceptor trench in conjunction with a fresh water recharge channel to flush and sweep the alluvium in the vicinity of the tailings impoundment. Progress towards remediating the alluvium continues as a result of continued operation of this program. The purpose of the fresh water creek is to allow clean water to infiltrate and flush the alluvium towards the interceptor trench. A reversed hydraulic gradient has developed within the alluvium as a result of the construction and continued operation of the fresh water creek and interceptor trench. However, some areas within this recharge zone were included within the area delineated for windblown tailings retrieval.

Due to the use of the fresh water for alluvial remediation, certain areas within this capture zone exhibit ground conditions which prevent access by heavy equipment for performing the prescribed windblown clean-up activities. The depth to ground water in some areas is very close to the surface making the area inaccessible at the present time (Figure 2). Access to these areas in a safe and productive manner will require lowering of the water table. However, this will occur only if operation of the fresh water channel, which is the source of the recharge water, is discontinued.

Because the fresh water creek has been a very effective component of the alluvium remediation program, Quivira believes that discontinuing its use in order to lower the water table to provide safe access to areas requiring windblown retrieval would possibly result in reducing the effectiveness of the alluvial ground water remediation program. This is due to the fact that elimination of the recharge source will result in the ground water flow path slowly returning to natural conditions; which is away from the capture zone.

Quivira believes that approval of the requested time extension will provide the necessary time to develop and test possible alternatives to how access to these areas could be performed in a safe and effective manner.

Quivira initially submitted a proposed milestone schedule to NRC in November 1991 which proposed that areas associated with mill processing activities would not be subject to the milestone dates. Areas which are presently inaccessible are inaccessible due to water discharges from the present processing activities which also provide the needed water to perform the alluvial ground water sweep. Quivira



believes that clean-up of these areas should be addressed during the mill decommissioning phase of the facility when access to the areas should not be impeded.

## Conclusion

The milestones established within license condition #40 requires Quivira to complete windblown tailings retrieval and placement on the pile by July 31, 1997. Due to the delays in acquiring necessary access permits; occurrence of inclement weather; and inaccessibility to some areas delineated for windblown tailings retrieval due to other licensed activities: Quivira will not be able to complete windblown tailings retrieval and placement on the pile by July 31, 1997. Quivira is requesting an extension to December 31, 1998 for completion of this task.

Quivira believes that extending the windblown tailings retrieval milestone is warranted for the following reasons:

1. All areas previously delineated for windblown retrieval, except those areas discussed in item 3 above, will have received an initial pass by earth moving equipment by July 31, 1997. Any residual windblown material identified by confirmatory sampling is expected to be minimal as the majority of the windblown material was present in surficial quantities;
2. Windblown tailings retrieval from areas which are not accessible to heavy equipment due to on-going licensed activities will be addressed during the mill decommissioning phase of facility reclamation; and
3. As a result of completing the final radon barrier on the impoundments, Quivira has demonstrated compliance with the purpose and intent of the MOU by limiting radon emissions from the facility almost one year ahead of the schedule established within the license.

Quivira proposes the following revision to license condition 40.A.1 to reflect this request (additions noted with underline text, deletions noted with strikeout):

- (1) *Windblown tailings retrieval and placement on the pile - ~~July 31,~~  
~~1997~~ December 31, 1998. Areas inaccessible due to activities  
authorized by this license will be addressed during final mill  
decommissioning.*

FIGURE 1

TOWNSHIP 14 NORTH, RANGE 9 WEST  
SECTION 31 AND 32

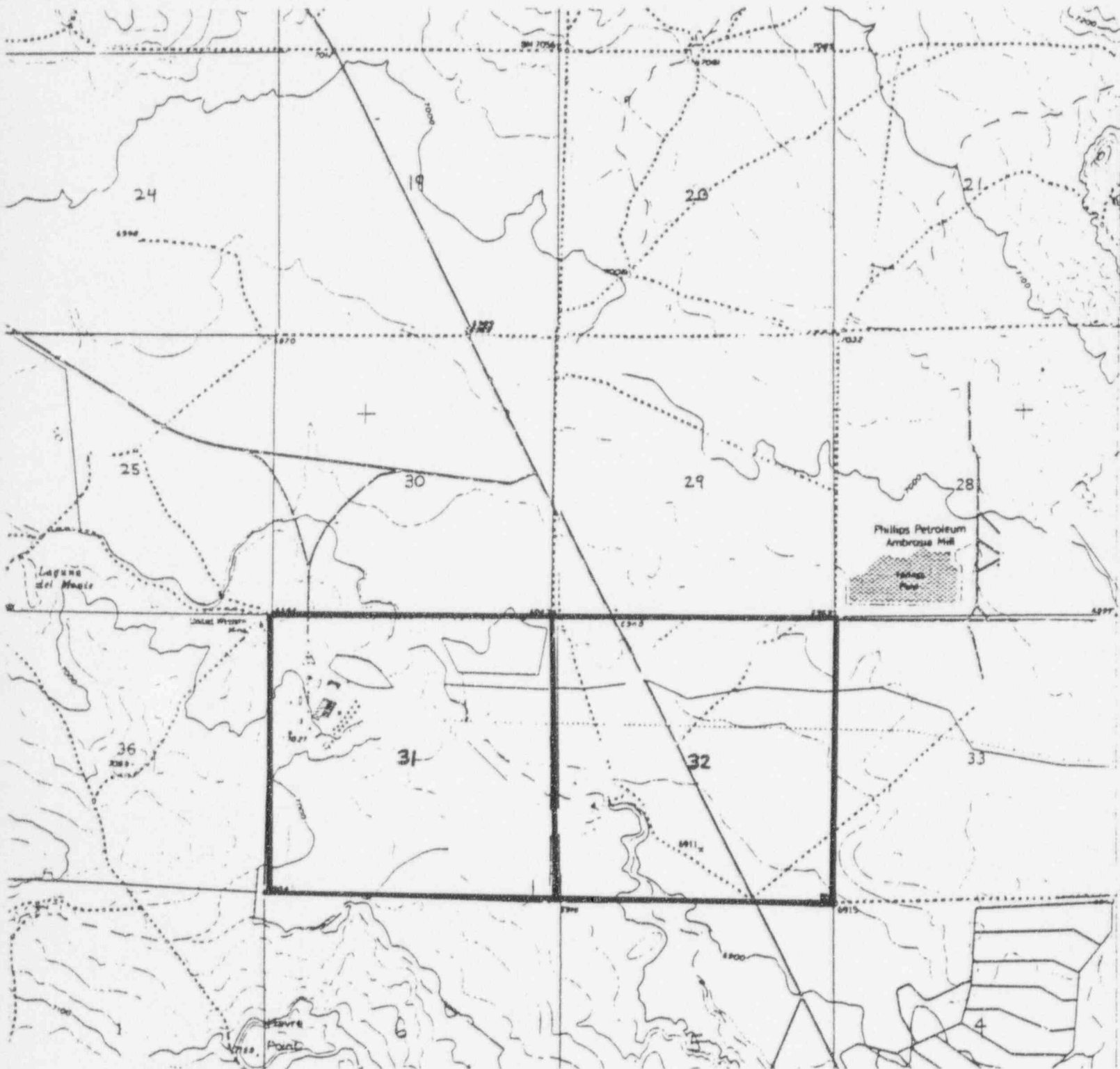


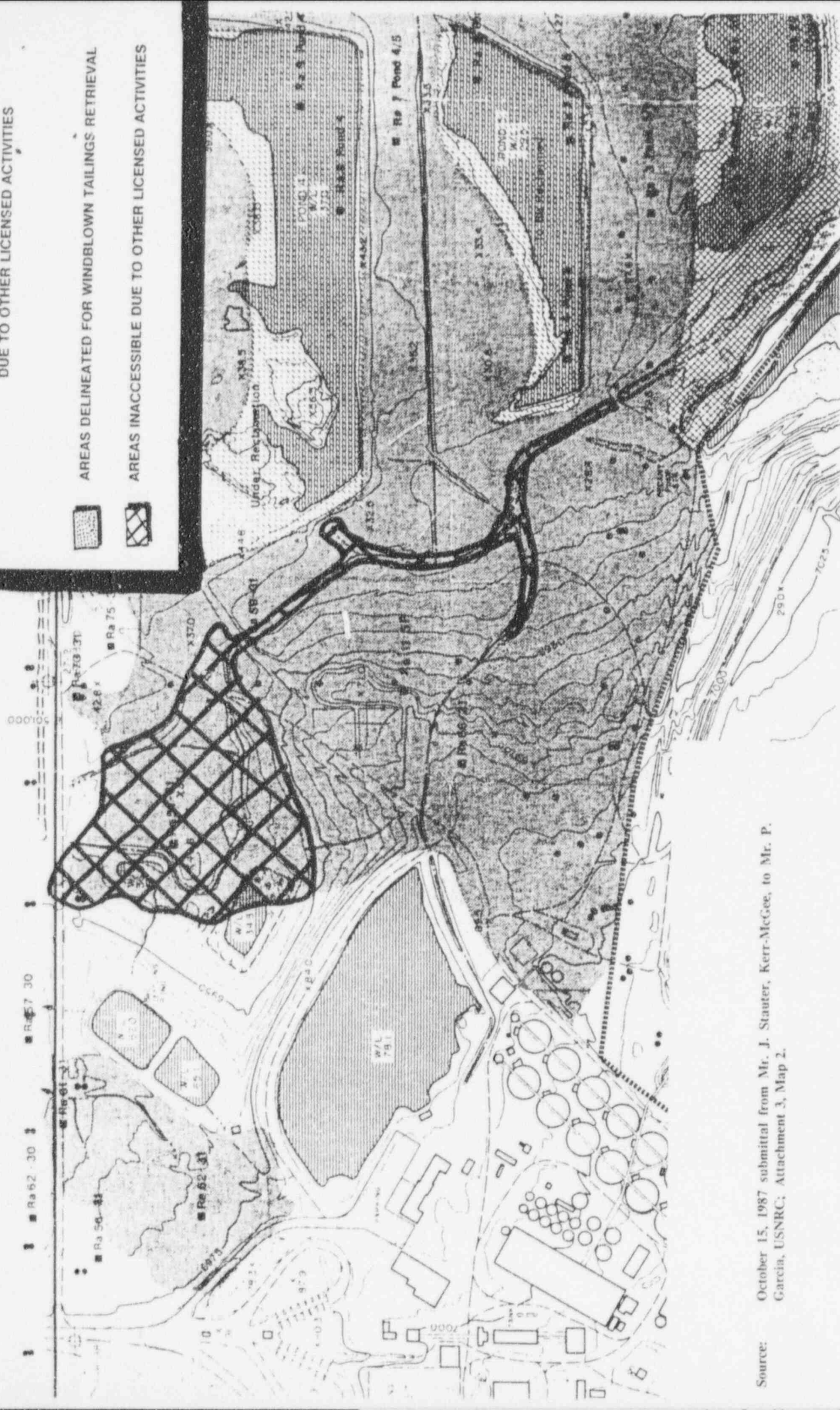


FIGURE 2

AREAS INACCESSIBLE TO HEAVY EQUIPMENT  
DUE TO OTHER LICENSED ACTIVITIES

AREAS DELINEATED FOR WINDBLOWN TAILINGS RETRIEVAL

AREAS INACCESSIBLE DUE TO OTHER LICENSED ACTIVITIES



Source: October 15, 1987 submittal from Mr. J. Stauter, Kerr-McGee, to Mr. P. Garcia, USNRC; Attachment 3, Map 2.