

INSPECTION FINDINGS AND LICENSEE ACKNOWLEDGMENT

I, King (6)

8/12/76

1. LICENSEE AMAX Specialty Metals, Inc. P. O. Box 1748 Parkersburg, West Virginia 26101	2. REGIONAL OFFICE U. S. Atomic Energy Commission Region II, Division of Compliance 290 Peachtree Street, NW, Suite 818 Atlanta, Georgia 30303
3. LICENSE NUMBER(S) RTB-440 (40-3001)	4. DATE OF INSPECTION 1
5. INSPECTION FINDINGS <p><input type="checkbox"/> A. No item of noncompliance was found.</p> <p><input type="checkbox"/> B. Rooms or areas were not properly posted to indicate the presence of a RADIATION AREA. 10 CFR 20.203(b) or 34.42</p> <p><input type="checkbox"/> C. Rooms or areas were not properly posted to indicate the presence of a HIGH RADIATION AREA. 10 CFR 20.203(c) (1) or 34.42</p> <p><input type="checkbox"/> D. Rooms or areas were not properly posted to indicate the presence of an AIRBORNE RADIOACTIVITY AREA. 10 CFR 20.203(d)</p> <p><input checked="" type="checkbox"/> E. Rooms or areas were not properly posted to indicate the presence of RADIOACTIVE MATERIAL. 10 CFR 20.203(e)</p> <p><input type="checkbox"/> F. Containers were not properly labeled to indicate the presence of RADIOACTIVE MATERIAL. 10 CFR 20.203(f) (1) or (f) (2)</p> <p><input type="checkbox"/> G. A current copy of 10 CFR 20, a copy of the license, or a copy of the operating procedures was not properly posted or made available. 10 CFR 20.206(b)</p> <p><input type="checkbox"/> H. Form AEC-3 was not properly posted. 10 CFR 20.206(c)</p> <p><input type="checkbox"/> I. Records of the radiation exposure of individuals were not properly maintained. 10 CFR 20.401(a) or 34.33(b)</p> <p><input type="checkbox"/> J. Records of surveys or disposals were not properly maintained. 10 CFR 20.401(b) or 34.41(d)</p> <p><input type="checkbox"/> K. Records of receipt, transfer, disposal, export or inventory of licensed material were not properly maintained. 10 CFR 30.51, 40.61 or 70.51</p> <p><input type="checkbox"/> L. Records of leak tests were not maintained as prescribed in your license, or 10 CFR 34.25(c)</p> <p><input type="checkbox"/> M. Records of inventories were not maintained. 10 CFR 34.26</p> <p><input type="checkbox"/> N. Utilization logs were not maintained. 10 CFR 34.27</p>	
6. LICENSEE'S ACKNOWLEDGMENT <p>The AEC Compliance Inspector has explained and I understand the items of noncompliance listed above. The items of noncompliance will be corrected within the next 30 days.</p> <p>_____ (Date)</p> <p><i>T. Hoyt Park</i> (Licensee Representative - Title or Position)</p>	

ORIGINAL: LICENSEE. COPIES: ☐ CO REGION ☒ CO HEADQUARTERS ☐ CO ENFORCEMENT

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July 25, 1960

TO: Dr. D. E. Spink
Carborundum Metals Co.
Akron, New York

FROM: R. J. Augustine, D. E. Barber and G. Hoyt Whipple
University of Michigan

SUBJECT: Report of the Radiological Surveys of Operations at the Parkersburg Plant, May 10 - July 22, 1960, and a Recommended Routine Radiological Program.

This report is divided into the following sections:

1. Introduction
2. Air Samples
3. Water Samples
4. Urinalysis
5. Gamma Measurements
6. Revised Counting Procedure
7. Conclusions and Recommendations
 - A. Carbiding
 - B. Chlorination
 - C. Separations
 - D. Maintenance
 - E. General
 - F. Routine Radiological Program

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 92-446



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1. Introduction

The data contained in this report were obtained during less than 100% plant production. Concentrations of radioactivity in air and water may be expected to increase when full production utilizing Nigerian ore is achieved.

Separations data were taken when the feed to that system was only 50% Nigerian tetrachloride.

No data has been obtained during the operation of more than one chlorinator.

2. Air Samples

Table 1 is a summary of air sample data obtained following the installation of additional ventilation equipment in the carbide building. All average values are less than MPC except for the drumming operation, the routine for which has not yet been definitely established. The use of the MHA respirator will effectively reduce the exposure during this operation to less than MPC.

A comparison of the data of Table 1 with those of Table 3 of our memo dated March 10, 1960, shows that the ventilating equipment and the more careful handling of the carbide and old mix has resulted in a reduction of average concentrations of radioactive material in the air.

Off site samples from the continuous air samplers located at the nearest neighbors of the plant indicate air concentrations of radioactive materials well below the MPC.

Concentrations of radioactive material in the air of the separations building are all below the occupational MPC for thorium. A single sample was taken at each location given in Table 1 except for the $ZrSO_4$ filter and tetrachloride feed locations. The values given for these latter two locations are maximums of two and three samples respectively. All reported values are also based on first counts of the sample; consequently, all are high estimates.

Table 1

SUMMARY OF AIR AND WATER SAMPLE DATA COVERING THE PERIOD

MAY 10 - JULY 22, 1960

Location and Operation	Average μm/ml	Highest μm/ml	Lowest μm/ml	No. of Samples	Average/MPC
Carbide Building, Coke Hole	2.7×10^{-11}	7.3×10^{-11}	2.1×10^{-13}	3	.54
Carbide Building, Locker Room	$<5.5 \times 10^{-12}$	4.9×10^{-11}	$<2.4 \times 10^{-13}$	10	<.11
Carbide Building, Control Room	$<1.0 \times 10^{-12}$	1.3×10^{-11}	$<2.1 \times 10^{-13}$	10	<.02
Carbide Building, Catwalk	5.9×10^{-12}	1.7×10^{-11}	1.1×10^{-12}	9	.12
Carbide Building, Picking Belt	2.7×10^{-11}	4.9×10^{-11}	1.0×10^{-11}	3	.54
Carbide Bldg., Brumming Carbide	2.4×10^{-10} 8X MPC	6.4×10^{-10}	8.5×10^{-12}	3	4.8
Carbide Bldg., Gar Pull - General	3.6×10^{-11} 4.2X MPC	1.3×10^{-10}	1.1×10^{-12}	6	.72
Harbon Roof, Off Site	$<3.4 \times 10^{-14}$	9.9×10^{-14}	$<2.6 \times 10^{-14}$	17	<.02
Moellendick Farm, Off Site	$<3.6 \times 10^{-14}$	$<1.2 \times 10^{-13}$	$<2.6 \times 10^{-14}$	12	<.02
Stevens Farm, Off Site	$<3.0 \times 10^{-14}$	1.3×10^{-13}	$<2.1 \times 10^{-14}$	27	<.02

Table 1a

AIR SAMPLE DATA FROM SAMPLES TAKEN IN SEPARATIONS ON 20-21 JULY 1960

<u>Location</u>	<u>mc/ml</u>
Catwalk - ZrSO_4 Filter	2.7×10^{-12}
ZrSO_4 Filter	1.5×10^{-12}
Feed Filter	9.5×10^{-13}
Tower, 1st Floor	7.5×10^{-13}
" 2nd "	8.2×10^{-13}
" 3rd "	1.1×10^{-12}
" 4th "	1.4×10^{-12}
" 5th "	1.5×10^{-12}
Tet Feed	8.3×10^{-12}
ZrO Drum Change	1.8×10^{-12}
ZrOH Filter	4.0×10^{-12}
HfOH Filter	1.1×10^{-12}
ZrOH Filter	3.3×10^{-12}
Hf Tray Dump	1.1×10^{-11}

? drum pulling
feeding carbide } over MAC
pulling last residue

3. Water Samples

There appear to be three components of the liquid effluent to the Ohio River.

These are:

- a. Surface drainage, which includes coolant water from the carbide furnaces and floor washings, as well as roof drainage from the several buildings.
- b. Process sewer drainage.
- c. Sanitary drainage through a septic tank.

All three of these components combine on plant property to form the single line which empties into the river. Total effluent flow rate is estimated by Mr. Tuttle to be from 450 to 900 gallons per minute.

Samples taken from the effluent contain a large amount of solids. From inspection of samples thus far counted our experience forces us to apply a self-absorption correction factor of 10 to the water sample counting data. This correction factor applied to two samples taken during chlorination operations only and to two samples taken during both separations and chlorination operations provides an estimate of liquid effluent concentration at the river of 4.9×10^{-7} $\mu\text{Ci/ml}$ which is approximately ten times the MPC for natural thorium in water. ^{MPC 10}

An intensive sewer effluent and river radiological survey is recommended when the plant achieves full production on 100% Nigerian ore. The results of this survey will help to determine the magnitude of the effluent problem.

4. Urinalysis

All reported alpha activity concentrations in urine are well below the Maximum Permissible Urinary Excretion Rate (MPUER) of 1.5×10^{-2} dpm/ml which we had recommended in a previous report.

No definite pattern can be recognized from the compilation of data in Table 2 either by work location or with respect to time. Consequently, it is recommended that urinalyses not be performed at frequent intervals but be used as a check to demonstrate the absence of entry of radioactivity into the body.

It is suggested that urinalyses be performed following six months of operation. A review of the data will then enable determination of an appropriate interval at which these analyses should be performed. Specimens from one or two office workers may serve as controls for these analyses.

It is considered advisable to include radioactive urinalyses as a part of pre-employment and terminal physical examinations.

5. Gamma Measurements

Gamma radiation measurements tabulated in Table 3 show that a conclusion of a previous report continues to hold true and film badges as a routine monitoring tool are unnecessary anywhere in the plant. It is considered advisable to begin a gamma radiation log book wherein measurements can be permanently recorded.

A gamma measurement on the HrCl_4 feed tanks indicated nearly background radiation or a net of .01 mr/hr. It is not expected that other vessels will give much if any greater readings than this, but measurements should be made and recorded if film badges are not to be used.

As a matter of legal record it would be advisable to monitor with film badges those individuals most exposed, at six month intervals.

6. Revised Counting Procedure

Count the standard source at least once each day and record the result in the log book! Any major deviation from the expected standard count indicates

Table 2

SUMMARY OF URINALYSIS DATA

(DPVER = 1.5×10^{-2} dpm/ml)

Report Date		Feb. 15	March 17	June 14	June 27
Name	Position or Location	After Carbiding	Before Chlorination	After Chlorination and Before Carbiding	After Carbiding
			0		
			21 \pm 23	0	
			3 \pm 13	13 \pm 27	
			0	0	
			43 \pm 26	54 \pm 60	
			3 \pm 13	13 \pm 23	
			0	6 \pm 13	
			4 \pm 6	27 \pm 30	
			38 \pm 29	0	*
			17 \pm 19	0	
			3 \pm 13	59 \pm 30	*
			23 \pm 23	0	
			30 \pm 23	0	*
			0	13 \pm 27	
			0	46 \pm 27	*
			4 \pm 16	33 \pm 34	
			3 \pm 13	8 \pm 13	
			4 \pm 16	74 \pm 38	*
			3 \pm 13	27 \pm 30	
			43 \pm 26	44 \pm 45	
			105 \pm 44	13 \pm 23	*

Table 2 (Continued)

Report Date		Feb. 15	March 17	June 14	June 27
Name	Position or Location	After Carbiding	Before Chlorination	After Chlorination and Before Carbiding	After Carbiding
			95 ± 50	26 ± 27	
			0	48 ± 30	*
			4 ± 16	0	
			17 ± 18	0	
			4 ± 16	66 ± 35	*
			21 ± 23	398 ± 99	*
				13 ± 23	
			21 ± 23	0	
			38 ± 29	83 ± 42	
			17 ± 18	9 ± 20	
		124 ± 42	0	0	*
		15 ± 19	57 ± 30		
		82 ± 35	17 ± 18		*
			3 ± 13		
			4 ± 16		
			43 ± 26		
		82 ± 35		13 ± 23	5 ± 23 *
		42 ± 27		80 ± 38	0 *
		28 ± 23		0	49 ± 33 *
		15 ± 19		26 ± 27	6 ± 23
		57 ± 30		40 ± 30	0 *
		15 ± 19		19 ± 19	22 ± 27
		149 ± 46			
		109 ± 40		46 ± 27	6 ± 23 *
		2 ± 13		6 ± 13	0

Table 2 (Continued)

Report Date		Feb. 15	March 17	June 14	June 27
Name	Position or Location	After Carbiding	Before Chlorination	After Chlorination and Before Carbiding	After Carbiding
		95 \pm 38			
		55 \pm 30		66 \pm 35	0 *
		57 \pm 30		27 \pm 27	9 \pm 39
		15 \pm 19		26 \pm 27	46 \pm 33
		28 \pm 23		53 \pm 35	
		42 \pm 27		99 \pm 50	17 \pm 23 *
		83 \pm 35		13 \pm 23	9 \pm 39 *
		2 \pm 13		0	31 \pm 38
		69 \pm 33		59 \pm 40	22 \pm 27
		97 \pm 38			
				46 \pm 27	35 \pm 30
				40 \pm 30	

NOTES:

1. *Changes outside limits of error.
2. All figures $\times 10^{-5}$ dpm/ml.

Table 3

GAMMA RADIATION MEASUREMENTS, JULY 22, 1960

(DECONTAMINATION BUILDING)

Location	Date IrCl_4 Container Filled	Net μr/hr	Floor
IrCl_4 Container, Top, Center	7-22-60	5.0	First
" Top, Side	"	2.0	"
" Bottom, Side	"	.76	"
" Top, Center	7-18-60	.36	"
" Top, Side	"	.41	"
" Bottom, Side	"	.41	"
" Top, Center	7-14-60	.21	"
" Top, Side	"	.14	"
" Bottom, Side	"	.21	"
A - Chlorinator	"	.56	First
"	"	Top .21 Bottom .56	Second
"	"	.06	Third
A - Condenser	"	.76	First
"	"	Top .36 Bottom .66	Second
"	"	.11	Third
IrCl_4 Container, Top, Side	Being filled	.76	First
" Bottom, Side	"	2.5	"

some trouble with the counter, i.e., dirty chamber, dirty center wire electrode, change in high voltage setting, or malfunction of the electronics. The validity of the sample counts depends on this standard source check procedure!

Background should continue to be counted twice a day or after counting "sloppy" samples and recorded in the log book. The chamber should be cleaned to reduce background below 1 c.p.m. With background counts at or above 1 c.p.m. the background count should be subtracted from the sample count before recording the count in the log book.

Air samples need only to be counted at approximately 100 hours after collection ($\Delta t = 90-110$ hours.)

The formulae for calculating the air activity concentrations are as follows:

High Vel. Air Sampler:

$$\frac{\mu\text{C}}{\text{ml}(\text{air})} = 2.2 \times 10^{-10} \times \frac{(\text{net } 100 \text{ hr. c.p.m.})}{(\text{vol. in cu. ft.})}$$

Continuous 24 hr. Samplers:

$$\frac{\mu\text{C}}{\text{ml}(\text{air})} = 2.75 \times 10^{-11} \times \frac{(\text{net } 100 \text{ hr c.p.m.})}{(\text{vol. in cu. ft.})}$$

Air filter samples should be dry when counted. This may require heating them before counting!

Liquid samples should be prepared with care and placed in the planchets carefully to avoid getting sample material on the outside of the planchet. The final slurry in the planchet must be dried slowly to avoid bubbling, splattering, pepping, frothing, etc. After drying, continue to heat the sample to drive off organic vapors, ammonia vapors, etc. Some samples may need to be stored in a desiccator until counted! Calculate the activity of liquid samples by using the following formula:

$$\frac{\mu\text{C}}{\text{ml}_{\text{liquid}}} = 4.5 \times 10^{-6} \times \frac{(\text{net } 100 \text{ hr. c.p.m.})}{(\text{vol. in ml.})}$$

7. Conclusions and Recommendations

A. Carbiding: Continued care in handling ore, carbide, and old mix coupled with the use of the ventilating equipment will help to keep the air concentrations in the general carbiding area below the MPC. Prompt repair of furnace leaks is essential to maintain low air concentrations. Respirators should be worn for any dusty operation or when visible clouds of dust are being generated. Respirators are not required, however, merely to walk through the building, in the locker room, or in the control room, as long as one stays out of the dust cloud. ~~conscious~~ effort to keep dust to a minimum is essential for this area.

Protective clothing, consisting of caps, gloves, and coveralls should be worn for all operations involving contact with radioactive material or very dusty conditions. Protective clothing is not necessary when merely walking through the building.

The following two types of signs should be posted at all entrances to the carbiding area:

- (1) "Caution - Airborne Radioactivity Area"
- (2) "Caution - Radioactive Materials"

In addition all containers, bins, hoppers, etc., containing radioactive ore, carbide, or old mix should be posted as follows:

"Caution - Radioactive Materials"

B. Chlorination: In this area the general air concentrations are below MPC, except for the dusty operations of drum pulling, feeding carbide, and pulling the bed residue. Respirators should be worn for these operations. Also, during bed residue pulls the air concentrations in the general chlorination area requires wearing of respirators. Continual care in the handling of dusty materials and use of the ventilation equipment is essential for the safe conduct of these operations.

Coveralls, caps, and gloves should be worn during feeding carbide, tet drum pulling, and bed residue pulls. Protective clothing is not required at other times.

The two types of signs are required here:

- (1) "Caution - Airborne Radioactivity Area"
- (2) "Caution - Radioactive Materials"

All drums, bins, and hoppers containing radioactive material should be posted with: "Caution - Radioactive Materials."

C. Separations Building: All air samples indicated no airborne hazard although the dusty and fuming operations showed higher concentrations than the others. Respirators need not be generally worn in the area, but it is recommended that they be used for the dusty operations or bad fume conditions, i.e., feeding tet.

Protective clothing (caps, gloves, and coveralls) should be worn to prevent contamination whenever contact is made with the open systems or there is a possibility of contact with solutions, powders, etc.

The sign "Caution - Radioactive Materials" is required at all entrances to the Separations Building and on all process vessels, tanks, etc.

D. Maintenance: Air concentrations for maintenance operations are not known, but possibly could be high. Coveralls, caps, gloves, and respirators should be worn anytime radioactive material is encountered or the process system is opened. This must be carefully watched!

E. General Items:

- a. Temporary change shed is not necessary. The locker room in the Carbide Building and the change room in the Chlorination Building can be used to change into protective clothing. Emphasis

must be placed, however, on keeping these change rooms clean and on providing proper washing facilities for the workers.

- b. There should be a designated area in each building for lunching and no eating should be allowed at other places. The lunch rooms must be kept clean and hand washing facilities provided.
- c. The record of each man's time in the various areas is now unnecessary since the total plant is now 100% Nigerian.
- d. It is recommended that work shoes be provided in the carbiding operation only. These shoes should remain at the plant and should not be worn home.
- e. Laboratory personnel should be advised that the samples may contain radioactivity and the samples should be handled with care.
- f. All personnel should be advised of the necessity for cleanliness in working with the radioactive material. Handwashing after contact with the process stream and especially before eating should be required. A shower before going home is highly recommended and should be encouraged.

F. Routine Radiological Program: Table 4 shows a proposed routine radiological program of sampling and monitoring to be carried out by plant personnel during operation with radioactive materials.

All air samples taken with the High Volume Sampler should be for a sampling duration of 10 minutes if possible or until the flow rate drops to 18 c.f.m. The off-site continuous air samplers should be changed every 48 hours.

A sewer effluent monitoring program will be set up after the intensive effluent survey has been accomplished.

The importance of recording the results of all sampling and monitoring information in a permanent log book can not be over-emphasized!

Table 4

ROUTINE RADIOLOGICAL PROGRAM

Air Samples:

<u>AREA</u>	<u>LOCATION</u>	<u>FREQUENCY</u>
Carbide	ore and coke hole	1 per week during loading
	locker room	1 per week
	control room	1 per week
	main floor	1 per week
	catwalk	1 per week
	car pulling	1 per car
	carbide sorting	1 per car
	drumming operations	1 per car
	feeding carbide	1 per week
	IrO _{1.4} drum pull	1 per week
Chlorination	bed residue pull	1 per residue pull
	general area	1 per week
	change room	1 per week
	lunch room	1 per week
	feeding tet	1 per week
Separations	Ir oxide drumming	1 per week
	lunch room	1 per week
	four directions from plant at nearest neighbor	continuous
Off-site		

Laundry Samples:

100 ml. of first wash water, 1 per week.

Garage Measurements:

<u>AREA</u>	<u>LOCATION</u>	<u>FREQUENCY</u>
Carbide	drums or bags of ore	1 per week
	drums of carbide	1 per week
	drums of old mix	1 per week
Chlorination	chlorinator	1 per week
	chlorinator condenser	1 per week
	drum of bed residue	1 per week
	drum of tat	1 per week
Separations	feed storage tank	1 per week
	feed filter press	1 per week
	Er raffinate tank	1 per week
	H _f raffinate tank	1 per week
	Er sulfate tank	1 per week
	Er OH tank	1 per week
	drum of H _f OH	1 per week
	H _f filter press	1 per week

Urinalysis:

Recommended for all personnel after 6 months of operation with 100% Nigerian ore and as a part of a pre-employment and terminal employment physical examination.

R. J. Augustine
R. J. Augustine

D. E. Barber
D. E. Barber

G. Hoyt Whipple
G. Hoyt Whipple

Copy: G. Chapman

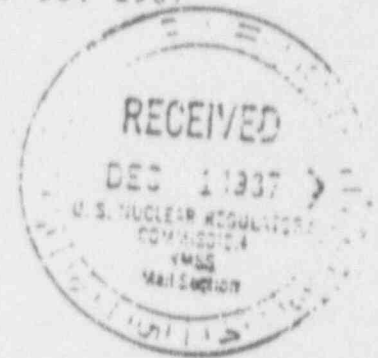
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AMAX
Minerals + Energy



November 25, 1987



The Hon. John S. Herrington
Secretary
Department of Energy
Forrestal Building
1000 Independence Avenue S.W.
Washington, D.C. 20585

Dear Mr. Secretary:

AMAX Inc. is the owner of an industrial plant site near Parkersburg in Wood County, West Virginia. This site was used in the early 1960's by a predecessor company for processing mineral ore to recover zirconium and hafnium under contract with the Atomic Energy Commission. Some of the ore contained up to 6% thorium and thus had to be licensed with the AEC as source material.

After this facility was acquired by Amax in 1967, the unused ore containing thorium and some process residues were removed from the site and disposed in a licensed radioactive waste disposal site in Kentucky in 1968 and 1969. The source material license was terminated by Amax in 1974.

A site inspection by Nuclear Regulatory Commission (NRC) officials in 1977 revealed some residual radioactivity on the Parkersburg site. A notice of violation was issued by the NRC in 1978 for alleged violations of the previous license that had been terminated in 1974. In order to resolve this matter, Amax agreed to prepare and implement a program to consolidate and stabilize the radioactive material on-site in a designated stabilization area. A storage license was issued by the NRC in June 1982 authorizing Amax to perform this on-site consolidation and stabilization work.

Pursuant to the stabilization plan approved by the NRC and incorporated into the storage license, Amax completed the on-site stabilization in late 1982. The

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[Signature]

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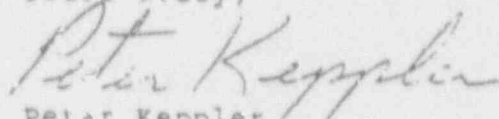
State of West Virginia, Department of Health, has conducted periodic monitoring of the groundwater at the site and confirmed that the area is secure and no radioactive contamination has occurred.

The NRC recently granted Amax's request to release from the storage license all areas of this plant site except the stabilization area. NRC is currently processing renewal of the license for the stabilization area.

The Nuclear Waste Policy Act of 1982 contains a provision applicable to the low level radioactive waste stabilization area at the Parkersburg site (see §151(c) attached). Pursuant to this provision of the NWPA, Amax hereby requests that the Secretary of the Department of Energy assume title and custody of the stabilization area. Amax has decontaminated and stabilized the low-level radioactive waste at this site in accordance with NRC requirements and will provide adequate financial arrangements for the long term maintenance and monitoring of this site. A proposal for the financial arrangements for long term maintenance and monitoring is in preparation and will be submitted to NRC for approval in the near future.

A description of the stabilization area is enclosed. Please advise as to what additional information or documentation is necessary in order to complete the transfer of the stabilization area from Amax to the Department of Energy.

Yours truly,



Peter Keppler
Assistant General Counsel

dm

cc: L. C. Rouse, Acting Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and Material Safety, NMSS
Nuclear Regulatory Commission
Washington D.C. 20555

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42 U.S.C. § 10161 [N.W.P.A. § 141]

analysis of the relative advantages and disadvantages of all 3 such alternative combinations of proposed sites and proposed facility designs.

(c) Environmental impact statements

(1) Preparation and submission to the Congress of the annual report required in this section shall not require the preparation of an environmental impact statement under section 10222(c) of the National Environmental Policy Act of 1969 (42 U.S.C. 4322(c)). The Secretary shall prepare, in accordance with regulations issued by the Secretary implementing such Act (42 U.S.C. 4321 et seq.), an environmental assessment with respect to such proposal. Such environmental assessment shall be based upon available information regarding alternative technologies for the storage of spent nuclear fuel and high-level radioactive waste. The Secretary shall submit such environmental assessment to the Congress at the time such proposal is submitted.

(2) If the Congress by law, after review of the proposal submitted by the Secretary under subsection (b) of this section, specifically authorizes construction of a monitored retrievable storage facility, the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) shall apply with respect to construction of such facility, except that any environmental impact statement prepared with respect to such facility shall not be required to consider the need for such facility or any alternative to the design criteria for such facility set forth in subsection (b)(1) of this section.

(d) Licensing

Any facility authorized pursuant to this section shall be subject to licensing under section 554231 of this title. In reviewing the application filed by the Secretary for licensing of the first such facility, the Commission may not consider the need for such facility or any alternative to the design criteria for such facility set forth in subsection (b)(1) of this section.

(e) Clarification

Nothing in this section limits the consideration of alternative facility designs consistent with the criteria of paragraph (1) of subsection (b) of this section in any environmental impact statement, or in any licensing procedure of the Commission with respect to any monitored, retrievable facility authorized pursuant to this section.

(f) Impact assistance

(1) Upon receipt by the Secretary of congressional authorization to construct a facility described in subsection (b) of this section, the Secretary shall commence making annual impact aid payments to appropriate units of general local government in order to mitigate any social or economic impacts resulting from the construction and subsequent operation of any such facility within the jurisdictional boundaries of any such unit.

(2) Payments made available to units of general local government under this subsection shall be—

(A) allocated in a fair and equitable manner, with priority given to units of general local government determined by the Secretary to be most severely affected; and

(B) utilized by units of general local government only for planning, construction, maintenance, and provision of public services related to the siting of such facility.

(3) Such payments shall be subject to such terms and conditions as the Secretary determines to be necessary to ensure achievement of the purposes of this subsection. The Secretary shall issue such regulations as may be necessary to carry out the provisions of this subsection.

(4) Such payments shall be made available entirely from funds held in the Nuclear Waste Fund established in section 10222(c) of this title and shall be available only to the extent provided in advance in appropriation Acts.

(5) The Secretary may consult with appropriate units of general local government in advance of commencement of construction of any such facility in an effort to determine the level of payments each such unit is eligible to receive under this subsection.

(g) Limitations

No monitored retrievable storage facility developed pursuant to this section may be constructed in any State in which there is located any site approved for site characterization under section 10132 of this title. The restriction in the preceding sentence shall only apply until such time as the Secretary decides that such candidate site is no longer a candidate site under consideration for development as a repository.

Such restriction shall continue to apply to any site selected for construction as a repository.

(h) Participation of States and Indian tribes

Any facility authorized pursuant to this section shall be subject to the provisions of sections 10135, 10136(a), 10136(b), 10136(c), 10137, and 10138 of this title. For purposes of carrying out the provisions of this subsection, any reference in sections 10135 through 10138 of this title to a repository shall be considered to refer to a monitored retrievable storage facility.

(Pub. L. 97-420, § 131, Jan. 7, 1982, 96 Stat. 2241.)

Revisions to text. Such Act and the title "Nuclear Waste Fund" are amended, which is classified under Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), chapter 42, section 4321, to read as follows: (a) Pub. L. 97-420, Jan. 7, 1982, 96 Stat. 2241.

Part D—Low-level radioactive waste

§ 10171. [N.W.P.A. § 151]

Financial arrangements for low-level radioactive waste site closure

(a) Financial arrangements

(1) The Commission shall establish by rule, regulation, or order, after public notice, and in accordance with section 2021 of this title, such standards and instructions as the Commission may deem necessary or desirable to ensure in the case of each licensee for the disposal of low-level radioactive waste that an adequate bond, surety, or other financial arrangement (as determined by the Commission) will be provided by a licensee to permit completion of all requirements established by the Commission for the decontamination, decommissioning, site closure, and reclamation of sites, structures, and equipment used in conjunction with such low-level radioactive waste. Such financial arrangements shall be provided and approved by the Commission, or, in the case of sites within the boundaries of any agreement State under section 2021 of this title, by the appropriate State or State entity, prior to issuance of license for low-level radioactive waste disposal or, in the case of licenses in effect on January 7, 1983, prior to termination of such license.

(2) If the Commission determines that any long-term maintenance or monitoring, or both, will be necessary at a site described in paragraph (1), the Commission shall ensure before termination of the license involved that the licensee has made available such bonding, surety, or other financial arrangements as may be necessary to ensure that any necessary long-term maintenance or monitoring needed for such site will be carried out by the person having title and custody for such site following license termination.

(b) Title and custody

(1) The Secretary shall have authority to assume title and custody of low-level radioactive waste and the land on which such waste is disposed of, upon request of the owner of such waste and land and following termination of the license issued by the Commission for such disposal, if the Commission determines that—

(A) the requirements of the Commission for site closure, decontamination, and decommissioning have been met by the licensee involved and that such licensee is in compliance with the provisions of subsection (a) of this section;

(B) such title and custody will be transferred to the Secretary without cost to the Federal Government; and

(C) Federal ownership and management of such site is necessary or desirable in order to protect the public health and safety, and the environment.

(2) If the Secretary assumes title and custody of any such waste and land under this subsection, the Secretary shall maintain such waste and land in a manner that will protect the public health and safety, and the environment.

(c) Special sites

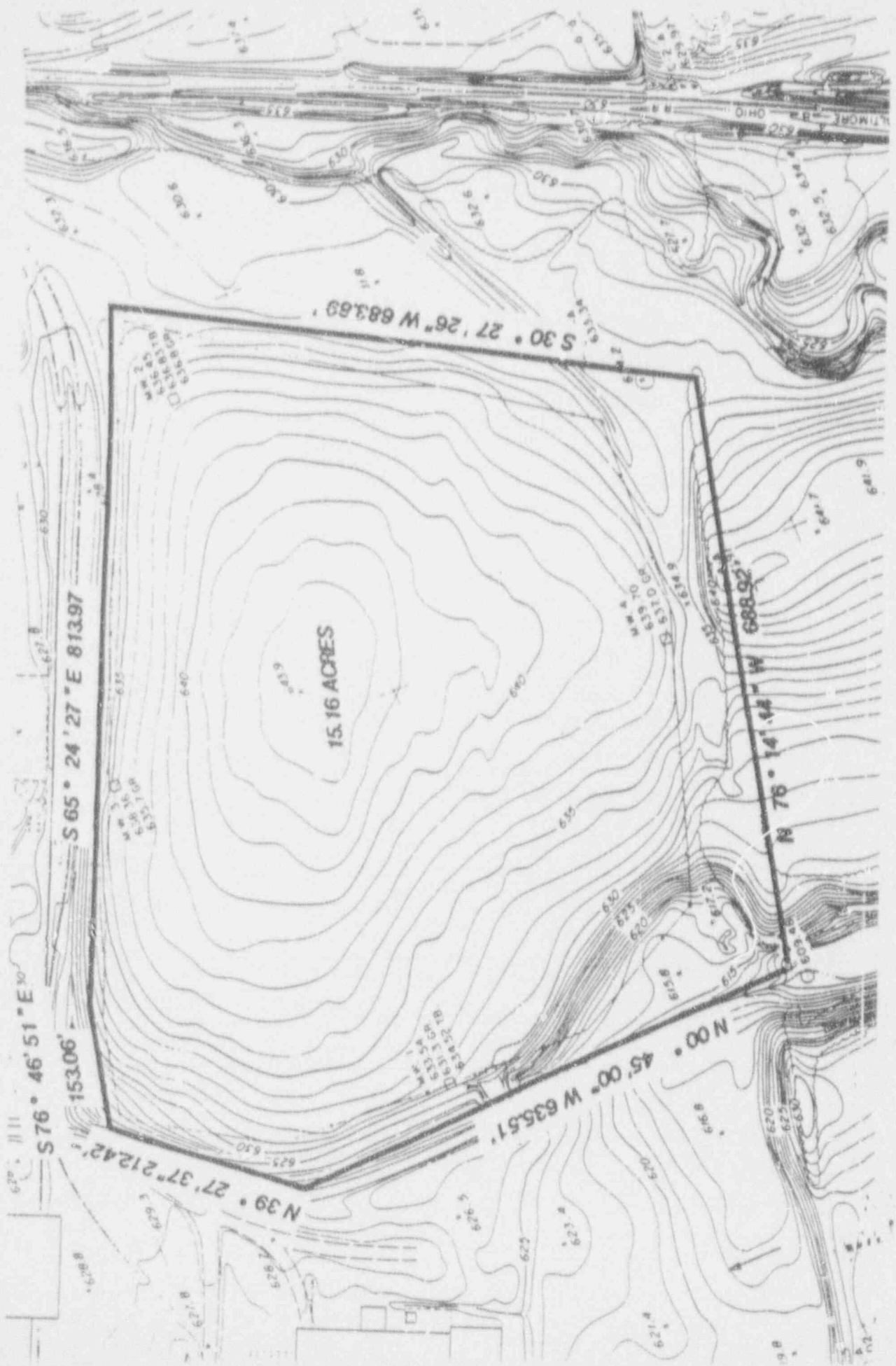
If the low-level radioactive waste involved is the result of a licensed activity to recover uranium, hafnium, and rare earths from source material, the Secretary, upon request of the owner of the site involved, shall assume title and custody of such waste and the land on which it is disposed when such site has been decontaminated and stabilized in accordance with the requirements established by the Commission and when such owner has made adequate financial arrangements approved by the Commission for the long-term maintenance and monitoring of such site.

(Pub. L. 97-420, Title I, § 131, Jan. 7, 1982, 96 Stat. 2241.)

BEGINNING at an iron pin in the westerly right-of-way line of the Baltimore & Ohio Railroad Company in the northerly line of Lot No. 2 of the Francis Keene Lewis Partition, a plat of which is of record in the Office of the Clerk of the County Commission of Wood County, West Virginia, in Deed Book No. 124, at page 313, which beginning point is also N. $67^{\circ} 57' 58''$ W. 2564.68 feet from an iron pipe at the northeasterly corner of said Lot No. 2; thence S. $25^{\circ} 04' 22''$ W. along the westerly right-of-way line of the Baltimore & Ohio Railroad Company a distance of 709.96 feet to a point in the southerly line of said Lot No. 2, which point is also S. $76^{\circ} 14' 44''$ E. 10.20 feet from a concrete monument in the southerly line of said Lot No. 2; thence N. $76^{\circ} 14' 44''$ W. along the southerly line of Lot No. 2 a distance of 300.00' to the TRUE POINT OF BEGINNING:

THENCE N. $76^{\circ} 14' 44''$ W. a distance of 688.92'; THENCE N. $00^{\circ} 45' 00''$ W a distance of 635.51'; THENCE N. $39^{\circ} 27' 37''$ E. a distance of 212.42'; THENCE S. $76^{\circ} 46' 51''$ E. a distance of 153.06'; THENCE S. $65^{\circ} 24' 27''$ E. a distance of 813.97'; THENCE S. $30^{\circ} 27' 26''$ W. a distance of 683.89' to the TRUE POINT OF BEGINNING:

Containing 15.16 acres, more or less.



The main reason we propose to require \$5,000 per year instead of \$10,000 per year, and \$30,000 up front instead of \$150,000, was that a substantial portion of the money included in DOE's proposal was to bring the site into compliance with the permitting requirements of the Resource Conservation and Recovery Act (RCRA) or to monitor for hazardous wastes in accordance with RCRA. We believe this to be unnecessary since the decommissioning was completed prior to the November 19, 1980, cut-off date cited in RCRA regulations.

Our intention is to terminate the Amax license once DOE takes custody of and title to the site. Establishment of funding arrangements along the lines described above is under way and will be completed soon. Based on a meeting with DOE staff members on March 20, 1991, we understand that DOE is actively preparing to acquire title to the site. We would appreciate it if the land acquisition process could be pursued as expeditiously as possible and if we could be kept informed of its progress.

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

Enclosures:

1. Letter to Secretary Herrington from CJHaughney dated 11/25/87
2. Letter to PKeppler from CJHaughney dated

cc: Peter Keppler
Amax, Incorporated

PDU

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EXPERT SYSTEM LICENSE EVALUATION
EVALUATION REPORT FOR LICENSE STB-00440

Licensee: AMAX SPECIALTY METALS CORP. FORMER. CARBORUNDUM CO
Site of operation: PARKERSBURG PLANT AT WASHINGTON, WV

This report is generated from a previous
expert system evaluation done for this license number.

The final ranking for SITE CONTAMINATION is: 321

DESCRIPTION OF ACTIVITY OR FACILITY: SOURCE MATERIAL PROCESSING

--Type and form of materials licensed--
Material--
SOURCE MATERIAL

--Form--
Loose material

--For evaluation purposes, amounts of the following materials were obtained--			
Material--	--Form--	--Amount--	--Unit--
SOURCE MATERIAL	LOOSE	24000.00	LB

Rank of the license based on the loose materials licensed: 27

1. There were unlimited amounts of at least one source material licensed
2. There was one identifiable site with this license.
3. High likelihood that activity could have generated significant contamination. Rank=rank*1.5
4. There was NO verifiable decontamination of the site at closeout. Rank=rank*1.2
5. No closeout survey was conducted for this license. Rank=rank*2.
6. There was an NRC FINAL INSPECTION of the facility. Change in rank dependent on subsequent information.
7. Final inspection was thorough, could have missed potential problems. Rank=0.75*rank
8. There was inconclusive evidence of releases to the environment or there was evidence of limited release. Rank=1.2*rank
9. There was VERY HIGH turnover of materials in the facility. Rank=rank*2
10. There was limited use of glove boxes, hoods, or protective clothing
11. Possible inappropriate disposal or abandonment of contaminated material from glove boxes, hoods, clothing. Rank=rank*1.1
12. There was significant generation of waste material in routine cleanup of facility. Rank=rank*1.5
13. Possible inappropriate disposal or abandonment of contaminated material from cleanup. Rank=rank*1.2
14. There was adequate documentation of the disposition of materials.
15. There was no information in file indicating burial or dumping by licensee. Rank not changed
16. There were no verifiable intermediate decontamination efforts. No change in rank
17. High rank of this license was due to both the amount of material and indications that site HAD HIGH likelihood of contamination

CATEGORY FOR POTENTIAL SITE CONTAMINATION:
HIGHEST PRIORITY-Category 1A

The final ranking for SITE CONTAMINATION is: 321

Reviewer's comments concerning license STB-00440

This license(terminated in April, 71) covered the processing(for about 5 years of the 12 years the facility was licensed for nuclear material) of Nigerian zircon ore mainly for the hafnium and zirconium content. However this ore has approximately 6% thorium which was isolated as a residue and sold if there was a favorable market. Due to economic reasons, processing stopped in 1964 and by 1967 a letter from Mr. R. W. Ritchy(plant manager) stated he felt they needed help very soon from AEC as the steel storage drums(Th residue) were corroding and the material was scattering enough to make the situation intolerable in a very short time. Mr. Ellis of the AEC visited the site and recommended that the material be buried either at an approved burial ground or seek a license amendment to bury on site. The licensee decided to use Nuclear Engineering and burial at Morehead, Ky. for the disposal according to a letter of 4-6-71 from J. W. Walters. Mr. Walters also states in the same letter that they surveyed the site and met specifications outlined on a Oct. 69, memo by Don Harmon. On July 18, 78, thru Sept. 28, 78, (many years after the termination of license STB-440) NRC made 4 special inspections of the facility placing results in the file. It appears that AMAX tried very hard to operate the plant in a safe manner for both employees and the environment, but the situation got out of control. The 1978 survey and inspection needs to be reviewed by present standards.

EXPERT SYSTEM EVALUATION WAS BASED ON THE
INVENTORY RECORD IN JOB 0680, BOX 05

Docket 40-05001

Licensee: AMAX SPECIALTY METALS CORP. FORMER, CARBORUNDUM CO
Address: AKRON NEW YORK Zip:
State of operation: WV
Site used: PARKERSBURG PLANT AT WASHINGTON, WV
Disposition information present: LICENSEE LETTER STATING DISPOSITION
Contents of letter:
4-6-71:ALL RAD. ACT. MATER. BURIED AT MOREHEAD, KY. BY NUC. ENG. CO.
Info on disposal: NUCLEAR ENGINEERING CO., MOREHEAD, KY.
This license was listed as terminated on 04/27/71
Remarks:

JOB NUMBER: 0680 BCX NUMBER: 05

CONTENTS OF
INVENTORY RECORD IN JOB 0261, BOX 01

Docket 40-05001

Licensee: AMAX SPECIALTY METALS INC
Address: PARKERSBURG WEST VIRGINIA Zip: 26101
State of operation: WV
Site used: PARKERSBURG PL, WASHINGTON WV
Disposition information present: LICENSEE LETTER STATING DISPOSITION
Contents of letter:

ALL RADIO ACTIVE MTLs BURIED AT MOREHEAD KY BY NUCLEAR ENGINEERING CO
There is an NRC inspection report in this license file
This license was listed as terminated on 04/27/71
Remarks:

JOB NUMBER: 0261 BOX NUMBER: 01

memorandum

DATE February 23, 1990

SUBJECT Review of the NRC's File on the AMAX Site, Parkersburg, West Virginia

TO Dr. Sally A. Mann, EM-451, DOE/GTN

Attached is a summary of the review of the NRC file on the AMAX site, Parkersburg, West Virginia, and the AMAX proposed trust agreement. In general, the site, as constructed, appears to represent a very low health risk to the public. However, the remedial action design and plan, and the records and data documenting construction activities and post-construction site performance, do not meet today's standards. In addition, hydrologic information in the file is insufficient to evaluate groundwater conditions at the site, and additional groundwater data should be collected if possible. The time to do this would be in the spring, following the period of heaviest rainfall, when water levels in the monitoring wells may be highest.

The trust fund should be of sufficient size to cover the cost of long-term surveillance and maintenance of the site. The matter of recovering the cost of major repairs or corrective action at the site, if required, should also be considered before final wording of the trust agreement is agreed to. Monitoring and maintenance contractors should not be specified in the trust agreement; that will be a DOE decision based on Federal procurement regulations.

If it is determined that additional groundwater data are required before the DOE is willing to accept the Parkersburg site, the GJPO would like to collect those samples or send an observer if the State of West Virginia will be collecting the samples. Information in the NRC's file indicates that the State intends to sample in April, 1990. The GJPO's participation in this sampling will help the GJPO determine if the existing wells are adequate for long-term monitoring of the site.

The GJPO is prepared to meet again with you and the NRC to discuss the Parkersburg site and its eventual transfer to the DOE for long-term surveillance and maintenance. At this time, the weeks of March 12, April 9, or April 23, 1990, are equally convenient.

While in the Germantown area for this meeting, the GJPO would also like the opportunity to discuss with you the post-UMTRA residual tailings proposal and the Action Description Memorandum for long-term surveillance and maintenance of off-site disposal sites. The GJPO

additional info

NF 11

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63

Dr. Sally Mann

-2-

February 23, 1990

will also be prepared at that time to give a presentation to R. P. Whitfield on the Long-Term Surveillance and Maintenance Program and the Action Description Memorandum, if a suitable time and place can be arranged.

If you have any questions or require any additional information, please contact Charles Jones, UNC Geotech, at FTS 326-6019 or me.


Joseph E. Virgona
Project Manager

Attachment

cc: J. Gatrell, DOE/EM
C. Nichols, DOE/ID, w/o att.
C. Jones, UNC w/o att.

UNC Geotech

UNC Geotech
2597 B 3/4 Road
P.O. Box 14000
Grand Junction, Colorado 81502-5504
303/242-8621

February 23, 1990

Mr. Joseph E. Virgona
U.S. Department of Energy
Grand Junction Projects Office
P.O. Box 2567
Grand Junction, CO 81502

SUBJECT: Review of the NRC's File on the AMAX site, Parkersburg, West Virginia, and the AMAX Proposed Trust Agreement

Dear Mr. Virgona:

UNC has completed its review of both the file on the AMAX site and the trust agreement proposed by AMAX. Based on the information in the file, UNC arrived at two conclusions. First, the site, as constructed, appears to represent a very low health risk to the public. Second, the remedial action design and plan, and records documenting site construction and post-construction site performance, are not to today's standards.

The site was apparently constructed in a manner that was consistent with standards of the late 1970's and early 1980's. Standards today are more rigorous. However, there is nothing in the file that clearly indicates that the performance of the Parkersburg site will be inadequate or that further remedial action needs to be performed. For the record, however, the following concerns are noted.

Engineering concerns:

- o Quality control records that describe the selection of cap or cover materials and information on compaction tests are missing.
- o Construction quality verification, such as in situ tests of hydraulic conductivity, is missing.
- o Calculations of infiltration tests are missing.
- o Erosion protection plan is missing.
- o There is no evidence of radon emanation tests or monitoring. Radon is not mentioned as a parameter of concern in the radiological assessment, nor as a cap performance consideration.
- o There is no evidence that risk due to animal intrusion was addressed.

Mr. Joseph Virgona
Page 2
February 23, 1990

It is possible that some or all of the missing information exists in AMAX company files. It was not in the NRC's file on the site, so it was not possible for UNC to evaluate it.

Hydrology concerns:

- o Complete data on the four monitoring wells are missing. There are no data on water-level measurements. There are no lithologic logs, borehole geophysical logs, or completion diagrams for two of the wells. There are discrepancies between the driller's logs and the accompanying text on the screened intervals in the wells. Pump test and related data to support the statement that pumping from nearby wells will not affect groundwater flow beneath the site are missing.
- o Hydraulic gradients (both direction and magnitude), which may be changing seasonally, are neither calculated nor discussed; and no field measurements from which to calculate hydraulic gradients are provided or alluded to.
- o The rationale for the location of monitoring wells and depths of screened intervals is inadequate. The seriousness of this matter is borne out by the fact that certain wells do not produce water samples, at least at certain times of the year.
- o It is difficult to assess whether the number of monitoring wells and their locations are sufficient to detect excursion or leakage because of the lack of sufficient hydrologic data in the file that UNC reviewed.
- o If purposeful attempts have been made to sample wells at times of the year when the chances of obtaining water from them is greatest, these attempts appear to be undocumented.
- o Based on hydrologic information in the AMAX file, there is insufficient data to know what the groundwater is doing and what it may contain as far as contaminants are concerned.

The foregoing hydrology concerns are potentially serious. The long-term performance of the Parkersburg site will be judged heavily on the basis of groundwater information. There is serious question whether the number of monitoring wells, their location, and completion characteristics (depth of screening) are adequate for the GJPO to determine whether a problem is or is not developing at the site.

Comments on the AMAX proposed trust agreement were provided in the trip report memorandum, dated December 29, 1990. Comments are summarized as follows:

Mr. Joseph Virgona
Page 3
February 23, 1990

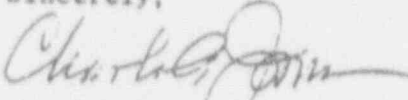
- o The dollar amount of the proposed trust was unspecified. The foremost concern is whether the amount of the trust will be sufficient to cover 1) the yearly cost of site inspections, site maintenance, and environmental monitoring; and 2) the cost of additional work at the site if problems develop some time in the future.

UNC expects to have cost estimates for routine site activities ready for the GJPO by March 30, 1990. Cost of additional remedial action, including the cost of major repairs, can not be estimated unless the scope of the work is known. UNC supports the suggestion made at the December 6, 1990, meeting that the DOE ask for a clause in the trust agreement that would protect the Government from the cost of additional remedial action (construction) or the installation of additional monitoring wells, if such are ever needed at the site.

- o Details about who will perform routine maintenance at the site or who will perform environmental or groundwater monitoring should not be part of the trust agreement. At the time the site is transferred to the DOE, the DOE will decide whether to continue in the arrangements established by AMAX for these services or whether to make other arrangements. In either case, the DOE will wish to make its own contractual agreements according to Federal procurement regulations. Therefore, specification of vendors should not be part of the trust agreement.

If there are questions or if further information is required, please call me.

Sincerely,



Charles A. Jones
Program Manager
Long-Term Surveillance
and Maintenance Program

CAJ/sn

File

MAY 25 1990

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Docket No. 40-8820

Peter Keppler
Assistant General Counsel
Amax, Inc.
Western Area Law Department
1626 Cole Boulevard
Golden, CO 80401-3293

Dear Mr. Keppler:

The Department of Energy (DOE) engaged a consultant, UNC Geotech, to help them understand the condition of the ~~Amax~~ site in Parkersburg, West Virginia. The consultant prepared a short report, which DOE sent to the Nuclear Regulatory Commission (NRC) staff, and we are sending to you. We are interested in your opinion of the report.

As I understand you discussed with Davis Hurt of my staff, representatives of NRC and DOE are planning to visit the Parkersburg site on June 26, 1990. It may be that some or all of the points raised in the DOE report can be resolved at that time.

Mr. Hurt has replaced ~~William~~ LaRoche as NRC project manager for the Amax license. Any questions you have about the status of your request for transfer of the site to DOE ownership can be directed to him at (301) 492-0694. We hope to resolve the issues raised by DOE and execute your request for transfer as quickly as possible.

Sincerely,

Original Signed By

Charles J. Haughney, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

Enclosure:
DOE memorandum of
February 23, 1990

cc: J. Gatrell, DOE
w/o enclosure

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Region II
[RDH/AMAX LETTER]

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AME	: RDHurt:flb	: FBrown	: JSwift	: CHaughney	:	:	:
ATE	: 05/24/90	: 05/24/90	: 05/24/90	: 05/24/90	:	:	:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 9, 1990

Docket No. 40-8820

Peter Keppler
Assistant General Counsel
Amax, Inc.
Western Area Law Department
1626 Cole Boulevard
Golden, CO 80401-3293

Dear Mr. Keppler:

A financial analyst from the NRC staff, Robert S. Wood, has reviewed your trust fund arrangements for long-term care of the Parkersburg, West Virginia, site. Mr. Wood expressed the opinion that the inflation rate and earnings assumptions you made in establishing the trust fund are not sufficiently conservative. He believes that a 4 percent real pre-tax interest rate cannot be safely extrapolated into the indefinite future, when historical real interest rates have generally been 2-3 percent.

You have proposed that \$3,000.00 per year in fund earnings would be enough to pay for annual maintenance costs and replacement of the fence every 25 years. We agree that \$3,000.00 per year is a reasonable figure if the only necessary maintenance costs are mowing, occasional surveillance, and a new fence at 25-year intervals. We have transmitted your proposal to the Department of Energy (DOE) for their evaluation. Since DOE will have long-term custody of the site, it is important for them to agree that the annual maintenance funds are adequate. In our meeting at Parkersburg in June 1990, the DOE representatives suggested that \$3,000.00 per year may not be enough for the maintenance they envision, but we have not heard from them officially.

Sincerely,

Charles J. Haggan, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

cc: J. Gatrell, DOE
J. Virgona, DOE

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UNC Geotech

40-8-30
Pain

UNC Geotech
2597 B 3/4 Road
P.O. Box 14000
Grand Junction, Colorado 81502-5504
903/242-8621

October 12, 1990

Mr. Joseph E. Virgona
U.S. Department of Energy
Grand Junction Projects Office
P.O. Box 2567
Grand Junction, CO 81502

SUBJECT: Specifications for New Monitoring Wells at AMAX 151(c) Site,
Parkersburg, WV.

Dear Mr. Virgona:

The specifications that Geotech recommends for drilling and installation of new monitoring wells at the AMAX 151(c) site are attached.

Geotech understands that these specifications will be submitted to EM-451 which will send them to the NRC for review and comment. Geotech further understands that the NRC may send these specifications to AMAX as recommended specifications for AMAX's contract with their driller. These specifications were written with these actions in mind. If Amax plans to depart significantly from these specifications, Geotech recommends the departure be reviewed by the DOE before drilling proceeds.

Submittal of these specification, at this time, is in one sense, premature. Submittal should not be construed that Geotech is ready to suggest (or concur in) the number and locations of new wells that will be required. Data on the groundwater gradient(s) at the site are too few. Water-level measurements to be obtained in October (this month) may help correct the problem of insufficient data. Geotech looks forward to receiving the October water-level data at the earliest possible date.

With respect to the attached specifications, the following need to be emphasized:

1. Installation of groundwater monitoring wells is a more rigorous undertaking than drilling water supply wells. A prerequisite for the drilling contract should be that the driller be experienced in the installation of wells for environmental monitoring. This prerequisite will narrow the number of qualified drilling contractors.

Mr. J. Virgona
Page 2
October 12, 1990

2. New monitoring wells must, without exception, provide representative water samples and must be capable of doing so over a long period of time. The attached specifications are directed to this end. These specifications may affect the cost of well installation.
3. Hollow-stem augers and split-barrel sampling are the preferred methods for drilling the new monitoring wells. Rotary drilling methods should be used only if conditions at the site preclude use of hollow-stem augers. Rotary drilling usually requires water or drilling mud to advance the borehole. Introduction of water or mud complicates well development and is to be avoided if possible.

Geotech recommends that the DOE have a representative on site during drilling and installation of the new monitoring wells. The responsibility of the representative will be to observe the drilling and installation of the new wells; to note problems if they arise; and to review proposed solutions or deviations from the attached specifications. Geotech also recommends that the DOE have a representative present when the new wells are developed and the initial samples collected.

Finally, the question of what to do with existing wells on the site is unresolved. Options are to cement and abandon the old wells or keep them open. The old wells could be kept open to allow additional water level measurements and future sampling if the new wells have different screened intervals or locations. It would be well if this question were resolved before new wells are installed.

If you have questions or wish to discuss any matters related to specifications for the new wells, please call me or Mr. Jack McCaslin, Geotech, at x6561. Mr. McCaslin is available to discuss the attached specifications with the DOE on the NRC. He may be contacted directly.

Sincerely,



Charles A. Jones
Program Manager
Long-Term Surveillance
and Maintenance Program

CAJ/rm

Attachments: 1

bcc: LS Cahn
JL McCaslin
DL Riddle
DL Scheurerman
File
CA File

PROPOSED MONITOR WELL DRILLING SPECIFICATIONS
FOR
AMAX SITE, PARKERSBURG, WEST VIRGINIA

INTRODUCTION: These proposed methods, techniques, and specifications for the drilling and installation of additional monitor wells at this site are designed for maximum utility of the wells for present and long term surveillance of the shallow ground water underlying the site.

These specifications, methods, and techniques are listed in order of preference for obtaining optimum representative geological and hydrological data. However, the preferred drilling methods may not be possible or cost effective for a number of reasons. Factors that might influence the selection of drilling methods are: availability of suitable equipment and technical expertise within a reasonable distance of the site, funding available for well installation, and subsurface conditions not compatible with the selected drilling methods.

The following drilling methods and specifications are based on several assumptions. These assumptions are: (a) adequate funding is available for standard state-of-the-art monitor well installation techniques, (b) technical expertise and the required equipment is available within a reasonable mobilization distance of the site, and (c) no unusual subsurface conditions exist, e.g. excessive buried debris or abnormal formation pressures.

DRILLING METHODS

1. HOLLOW-STEM AUGER/SPLIT-BARREL SAMPLING METHODS:

The preferred method of drilling and installing these monitor wells is the use of hollow-stem augers and split-barrel drive sampling or continuous split-tube sampling. These methods provide a means of obtaining relatively undisturbed samples of the subsurface materials as the borehole is advanced and for installing well completion materials (e.g. casing, well screens, seals, grout, etc.) at precise, selected intervals through the hollow-stem augers. The use of fluids during the drilling phase is not usually necessary except in cases where abnormal geological conditions are present, e.g. heaving sands where a positive hydrostatic head must be maintained within the hollow-stem auger column to overcome the formation pressure.

Suggested Drilling and Well Installation Procedure(s):

A drilling contractor should be selected who is experienced in hazardous waste investigation, as well as competent in the use of hollow-stem auger methods and techniques commonly used for installation of monitor wells. The drilling contractor shall use a hollow-stem auger rig rated by the manufacturer to at least 150 feet depth using 7 5/8-inch O.D. hollow-stem augers and equipped to place grout, under pressure, at that depth. Actual drilling will be accomplished by using 7 5/8-inch O.D. X 4 1/4-inch I.D. (larger sizes are acceptable) hollow-stem augers and a retrievable center bit or a flexible center plug.

All samples shall be taken using a 3 inch O.D. X 24 inch long, stainless steel split-barrel drive sampler. In all cases, drive sampling will be accomplished using standard soil sampling procedures and methods, such as: the split-barrel sampler shall be driven into undisturbed ground beneath the lead hollow-stem auger to its usable length or until a blow count of 50 blows per six inches or less of penetration is reached. Fifty blows per six inches or less will be considered as refusal and no further attempt will be made to sample at that interval. The split-barrel sampler will be driven by a free-falling drop hammer, weighing 140 lbs. and falling 30 inches. A hydraulic driver may be used, and in fact, is encouraged, in lieu of the 140 lb. drop hammer. All blow counts per six inches of penetration will be observed and recorded on the Daily Drilling Report.

A continuous sampling system (e.g. CME or Mobile) may be used with the hollow-stem augers in lieu of the split-barrel drive sampling system, providing the continuous sampling system recovery rate is sufficient for lithology identification.

Once the desired depth has been reached and the screen interval selected by a competent groundwater professional, the drilling contractor will install 2-inch I.D. PVC Schedule 40 slotted well screen and casing (Trilok or equivalent) to the desired depth through the hollow-stem augers. The well screen slot-size should be determined by a sieve analysis or by available reliable data from previous drilling. The 2-inch PVC casing shall be flush-joint, threaded, and have an "O" ring joint seal. The top of the riser casing will extend 30 inches above the surface. The annular area between the well screen and hole wall, and extending two feet above the top of the screened interval, will be packed with a well-rounded silica well-sand compatible with the screen-slot size selected. A 1-foot fine-grained silica sand pack (e.g. Mortar Sand) will then be placed, followed by a two to three foot granular or pelletized bentonite seal. If the bentonite seal is placed above the top of the static water table, 5 gallons (or more if needed) of distilled water will be added to aid the hydration of the bentonite material. A weighted measuring tape or similar device will be used to accurately measure the depth of all material as it is placed. All measurements will be recorded to the closest one-tenth of a foot. The hollow-stem auger column should not be raised more than two feet above the top of the material while the material is being installed.

If the bottom of the selected screen interval is above the total borehole depth, the borehole annular area below the screen interval will be filled with well sand or bentonite grout to within two feet of the screen bottom. The remaining annular area between the casing and borehole wall will be filled with a neat cement or bentonite grout to within two feet of the surface. This grout will be placed, under pressure, with a "tremmie" pipe to minimize the possibility of voids or channeling of the grout.

2. ROTARY DRILLING AND SAMPLING:

If hollow-stem auger drilling methods and techniques can not be used for drilling and installation of the monitor wells at this site, rotary drilling is the preferred alternative. Three types of rotary drilling are commonly

used; air rotary, mud rotary, and reverse circulation rotary. Each type has distinct advantages and disadvantages as compared to the hollow-stem auger methods.

The major disadvantage of rotary drilling for installing monitor wells is that a circulation medium must be used, which may alter the prevailing groundwater characteristics. The normal circulation mediums are air, water, and drilling mud. Each type of circulation medium has inherent undesirable qualities. However, if used correctly and for the proper application, these mediums will have minimal effects on sample quality.

If air is used to drill monitor wells where organics or heavy metals are suspected, all air must be filtered to remove possible oil emissions produced by the compressors. In addition, all pipe lubricants must be of a composition that will not compromise sample analytical quality.

The use of water as the circulation medium may dilute target contaminants below detection levels, and thus a longer well stabilization period may be required. Also, the quality of water used for drilling must be known prior to usage, as the introduction of water of unknown quality may greatly bias groundwater analyses, and thus compromise the entire sampling effort.

The use of drilling mud in the drilling of monitor wells has many of the inherent undesirable traits as with the use of clear water. Additionally, it is more difficult to remove excess drilling mud and resulting wall mud-cake from the screen intervals and the formation being monitored, thus well development efforts may be extensive and less effective than wells installed with hollow-stem augers. However, certain geological conditions may exist that mandate the use of mud rotary drilling methods to ensure successful completion of the well(s). Such conditions may include heaving sands, unstable saturated zones, and extremely large gravels.

Suggested Drilling and Well Installation Procedure(s):

Assuming that two-inch I.D. diameter screen and casing are of sufficient size and a maximum depth of 150 foot or less is anticipated, a small rotary rig or combination auger/rotary rig is adequate for completion of the well(s).

If air is to be utilized as the circulation medium, filters must be installed in the air lines, after the compressor receiver tank, to remove all traces of oil which may be generated by the compressor. In addition, all drill rods, drillpipe, bit subs, bits and other downhole tools must be thoroughly purged/cleaned of all residue prior to drilling. A filtering system must be integrated into the borehole air discharge so as to prevent any release of potential contaminants to the atmosphere.

If drilling fluid (water or drilling mud) is used as the circulation medium, all fluid must be obtained from an approved source and the quality of the fluids ascertained prior to usage. All fluids should be contained in steel, fiberglass, or other similar impoundments during the drilling operations. The use of earthen pits is not acceptable for the drilling and installation of monitoring wells.

In previous rotary drilling of two monitor wells at this site, it appears that a high-viscosity, medium-weight drilling mud was used to prevent wall caving and excessive fluid filtration to the formation. As the top thirty feet seemed to be the most unstable, a 40 to 50 second viscosity mud should be used to drill this interval. A 9 7/8-inch diameter hole is suggested to approximately 30 feet. Temporary 7-inch I.D. (or larger) casing (steel or PVC) should be set and seated. Fluid properties should then be reduced to the minimum viscosity and weight necessary to prevent caving for drilling of the remainder of the hole.

A minimum-size 6 1/4-inch hole should be drilled out from under the temporary casing seat to the desired depth. The temporary casing will be removed after the well screen, riser casing, filter packs, and seals are installed. Once the borehole has reached the desired depth, all excess cuttings shall be circulated from the borehole. This may require changing or dilution of the drilling fluid as any addition of dispersant agents may bias the groundwater sample quality.

Once the borehole is sufficiently cleaned of excess wall mud-cake and cuttings, 2-inch I.D. Schedule 40, PVC slotted screen and casing (TriLok or equivalent) will be set. The screen and casing must be flush-joint, threaded, and have an "O" ring joint seal. Screen slot-size should be determined by a field sieve analysis or by reliable existing data. The bottom of the well screen will be fitted with a "flow-through" valve to aid in placement of the screen and casing at the desired depth in the event of borehole wall caving. Stainless steel or PVC casing centralizers will be installed approximately 5 feet above the top of the well screen, midpoint, and 5 feet below the surface to center the screen and casing in the borehole and to insure an evenly distributed filter-pack and bentonite seal. The top of the riser casing will extend 30 inches above the surface. The annular area between the well screen and hole wall, and extending two feet above the top of the screened interval, will be packed with a well-rounded silica well-sand compatible with the screen-slot size selected. A 1-foot fine-grained silica sand-pack (e.g. Mortar Sand) will then be placed, followed by a minimum two-foot (no more than 5 feet) granular or pelletized bentonite seal. If the bentonite seal is placed above the top of the static water table, 5 gallons (or more if needed) of distilled water will be added to aid the hydration of the bentonite. A weighted measuring tape or similar device will be used to accurately measure the depth of all material as it is placed. All measurements will be recorded to the closest one-tenth of a foot.

It is suggested that the "backwashing method" be used when installing well materials in a fluid-filled hole. If borehole wall collapse is a problem, material may be placed with tremmie pipe and clear water of known chemical composition. Two samples of the water should be collected prior to usage. One sample should be analyzed and one sample archived.

If the bottom of the selected screen interval is above the total borehole depth, the borehole annular area below the screen interval should be filled with well sand or bentonite grout to within two feet of the screen bottom.

SURFACE COMPLETION OF MONITOR WELLS

Each monitor well will be completed at the surface by installing a steel protective well-cover over the PVC riser casing. This cover shall have a weatherproof, hinged, locking cap equipped with a brass padlock having a marine shackle. The well cover shall extend at least two feet below the surface. All padlocks should be keyed alike to facilitate sampling efforts. A concrete pad, with a minimum thickness of 4-inches and extending a minimum of two feet from the well cover in all directions, will be poured. The concrete pad will be sloped away from the well cover to facilitate drainage. The annular area between the riser casing and the inside of the well cover shall be filled to the corresponding height of the outside concrete pad with a non-binding material so as to allow movement during frost-heaving conditions. Steel guard posts (3-inch O.D. x 60 inches long) will be placed equal distance around the well cover and cemented at least two feet into the ground. The posts may be cemented into the surrounding pad as it is poured. The well covers and riser casing caps will have data plates attached, listing pertinent well data, e.g. well number, owner, elevation, survey coordinates, and etc. Final surface completion of the monitor well should consist of priming and painting the guard posts and well cover with a high-visibility, rust inhibitor paint. Care must be exercised to insure that paint residue is not introduced into the monitor well during priming and painting operations.

WELL DEVELOPMENT:

Each monitor well must be developed to remove silt, fine-grained sand, mud cake, and other particulate matter to insure optimum well productivity and water sample quality. Each well must be left undisturbed a sufficient amount of time after completion for the bentonite seal(s) to hydrate and the grout to set. The amount of time required will vary, depending upon the type of materials installed.

The use of surge-block surging, bailing, and pumping are the preferred methods for well development. Additional techniques, such as gas (nitrogen) lift and "backwashing" may be applied if the primary methods do not develop the well to satisfactory standards.

DECONTAMINATION:

All drilling equipment should be thoroughly cleaned and/or washed prior to commencing any work on this project. The equipment should then be inspected for compliance with any EPA, State, or local statutes applicable to this site. No piece of equipment should be removed from the project site unless it is decontaminated and inspected.

Due to the unknown nature of the subsurface materials, all drillpipe, drill-rod, augers, bits, samplers, and other downhole tools may have some level of contamination after their respective use. Therefore, the Driller should be prepared to decontaminate any downhole tool(s) after usage.

It is suggested that all downhole tools be decontaminated in the following manner:

- a. The contaminated tools shall be cleaned, using a high-pressure steam cleaner or hot water washer, until all visible contamination is removed.
- b. All tools will be rinsed with clean potable water.
- c. All tools will be rinsed with laboratory grade methanol.
- d. All tools will be rinsed with distilled water.
- e. All tools will be air dried.
- f. All tools will be inspected before being returned to service.

QUALITY ASSURANCE:

A drilling plan, safety plan, and other applicable documents must be assembled prior to the actual drilling of monitor wells at this site. All pertinent drilling and well installation data should be recorded in an established format. Further, it is suggested that the actual drilling operations be monitored by a Chem Nuclear Geotech representative to ensure compliance with all applicable regulations, specifications, industry standards, and other directives as set forth for this work task.



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Building 3, Capitol Complex
Charleston, WV 25305

Gaston Caperton
Governor

October 30, 1990

AMAX
Environmental Services, Inc.
1707 Cole Boulevard
Golden, Colorado 80401

Attention: James E. Kerrigan

Dear Mr. Kerrigan:

In accordance with our agreement with AMAX, we wish to submit the results of our site visit to the stabilization site in Washington, Wood county, West Virginia on October 23, 1990. Our next visit will be in April, 1991.

WELL MONITORING

The four wells located around the stabilization area were sampled by Rodney Kovack and Beattie DeBord. The pump on wells #1, 2, 3, and 4 were run for 15 minutes before a sample was collected in a PVC bottle, capped and labeled.

The samples were returned to our laboratory and counted on October 24, 1990. The results of alpha and beta activity found was below 15 pCi/l alpha and 50 pCi/l beta. Enclosed are copies of the individual analysis.

PHYSICAL CONDITION OF THE SITE

1. STABILIZATION AREA - no channel erosion was noted and the area has an excellent stand of grass.
2. FENCE - the chain-link fence enclosing the stabilization area was sound and secure. The main gates and equipment were secured with keyed industrial locks.
3. MONITORING WELLS - the pumps on all four wells appeared to be working.
4. DRAINAGE AREA - the slopes outside the fenced area were void of channel erosion and have a good stand of grass.

Sincerely yours,

Beattie L. DeBord, Chief
Radiological Health Section

cc: Germain LaRoch

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WEST VIRGINIA DEPARTMENT OF HEALTH
RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 10/23/90 Sample No. one
 Date Counted 10/24/90 Sample Volume 200 ml
 Type of Sample Wall #4 Analyst Burt D. Borch
 Sample Location L.B. Foster

TOTAL SOLIDS

Gross wt. 7.9408 gm.
 Tare wt. 7.8030 gm.
 Net wt. 137.8 mg.
 Alpha efficiency 14 %
 Beta efficiency 34 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	BKG	Net Count Rate CPM
Alpha	Background	60	17	.28	XXX	XXXXXXXXXX
Beta	Background	60	96	1.60	XXX	XXXXXXXXXX
Alpha	Total	60	17	.28	.28	0.0
Beta	Total	60	103	1.71	1.60	0.11

SUMMARY OF RESULTS

Activity - pCi/l @ 95% C.L.

	Total
Alpha	<u>0.00 ± 3.11</u>
Beta	<u>0.73 ± 3.11</u>

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427

WEST VIRGINIA DEPARTMENT OF HEALTH
RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 10/23/90 Sample No. Two
 Date Counted _____ Sample Volume 200 ml
 Type of Sample Well # 2 Analyst Beattie D. Bond
 Sample Location L. B. Foster

TOTAL SOLIDS

Gross wt. 6.2406 gm.
 Tare wt. 6.1168 gm.
 Net wt. 123.8 mg.
 Alpha efficiency 16 %
 Beta efficiency 37 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	BKG	Net Count Rate CPM
Alpha	Background	60	17	28	XXX	XXXXXXXXXX
Beta	Background	60	96	1.6	XXX	XXXXXXXXXX
Alpha	Total	60	9	.15	.28	- 0.13
Beta	Total	60	110	1.83	1.6	0.23

SUMMARY OF RESULTS

Activity - pCi/l @ 95% C.L.

	Total
Alpha	- 1.83 ± 2.38
Beta	1.40 ± 2.91

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427

WEST VIRGINIA DEPARTMENT OF HEALTH
RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 10/23/90 Sample No. three
 Date Counted _____ Sample Volume 100 ml
 Type of Sample Well #3 Analyst Debbie DeBord
 Sample Location L.B. Foster

TOTAL SOLIDS

Gross wt. 6.2495 gm.
 Tare wt. 6.1663 gm.
 Net wt. 73.2 mg.
 Alpha efficiency 22 %
 Beta efficiency 44 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	BKG	Net Count Rate CPM
Alpha	Background	60	17	.28	XXX	XXXXXXXXXX
Beta	Background	60	96	1.6	XXX	XXXXXXXXXX
Alpha	Total	60	12	.20	.28	- 0.08
Beta	Total	60	88	1.46	1.6 1.46	- .14

SUMMARY OF RESULTS

Activity - pCi/l @ 95% C.L.

	Total
Alpha	-1.64 ± 3.66
Beta	-1.43 ± 4.62

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427

WEST VIRGINIA DEPARTMENT OF HEALTH
RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 10/23/90 Sample No. Four
 Date Counted _____ Sample Volume 200 ml
 Type of Sample Well #1 Analyst Debbie DeBord
 Sample Location L. B. Foster

TOTAL SOLIDS

Gross wt. 6.2379 gm.
 Tare wt. 6.1013 gm.
 Net wt. 1.1366 mg.
 Alpha efficiency 14 %
 Beta efficiency 35 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	EKG	Net Count Rate CPM
Alpha	Background	60	17	28	XXX	XXXXXXXXXX
Beta	Background	60	96	1.60	XXX	XXXXXXXXXX
Alpha	Total	60	19	31	28	.03
Beta	Total	60	99	1.65	1.60	.05

SUMMARY OF RESULTS

Activity - pCi/l @ 95% C.L.

	Total
Alpha	0.48 ± 3.19
Beta	0.32 ± 3.00

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427

MEETING ON THE PARKERSBURG, WEST VIRGINIA SITE

Rockville, Maryland

March 20, 1991

ATTENDEES:

Amax, Incorporated

Peter Keppler
James Kerrigan

Department of Energy

Ralph Leitner, HQ
Tony Brazely, HQ
Steve Miller, HQ
Charles Jones, UNC Geotech, Grand Junction, CO

Nuclear Regulatory Commission

Dick Bangart
Charles Haughney
Jerry Swift
Davis Hurt
Robert Fchner
Jack Parrott

A/68



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 22 1991

Docket No. 40-8820

MEMORANDUM FOR: Charles J. Haughney, Chief
Fuel Cycle Safety Branch *CHH*
Division of Industrial and
Medical Nuclear Safety, NMSS

FROM: R. Davis Hurt
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

SUBJECT: MEETING ON THE PARKERSBURG, WEST VIRGINIA, SITE

On March 20, 1991, the NRC staff met with representatives of the U.S. Department of Energy (DOE) and Amax, Incorporated to discuss the transfer to DOE of custody of the Amax site in Parkersburg, West Virginia. A list of meeting attendees is enclosed.

The general subjects of discussion were (1) procedural and legal issues involved in the transfer of custody, (2) financial arrangements that Amax must make to provide for long-term monitoring and maintenance of the site, and (3) the possibility that new wells need to be installed on the site, sampled, and the samples analyzed before the transfer of custody proceeds. The following agreements were reached.

- DOE will begin the process of arranging for the property transfer by next week (the week of 3/25/91).
- The funding to be provided by Amax will be thought of for now as consisting of two parts: a fund for long-term maintenance of the site and a fund for near-term site investigation work. The former is required by legislation; the latter may be requested by DOE to compensate for less-than-perfect present knowledge of groundwater conditions under and around the site. Amax has already proposed a dollar figure for long-term maintenance. By April 8, 1991, DOE will provide NRC with an opinion on whether Amax's proposal for the long-term maintenance fund is adequate, as well as DOE's rationale, should they choose to present one, for requesting additional funds for near-term site investigation. The Amax representatives believe that further site investigation work is unjustified. Based on information presented by DOE representatives to date, the NRC staff agrees with Amax. We indicated that if DOE wants to present a written argument for additional site investigation work and an estimate of the costs of that work, it should be prepared to the same schedule, to accompany DOE's opinion on the maintenance fund.

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MAR 22 1991

- 2 -

- Amax representatives will be available to meet with DOE's contractors in Grand Junction, Colorado, to discuss any details of site hydrology that might still be in question. It is expected that such a meeting would take place before April 8, 1991, if it is to provide input to any estimate of additional site investigation costs.

Original Signed by

R. Davis Hurt
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

Enclosure: List of Attendees

DISTRIBUTION:

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Docket No. 40-8820

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IMSB R/F

IMAF R/F

DHurt

JSwift

FBrown

Beveridge/Cornell 1-23

KMcDaniel

RFonner, OGC

JParrott, LLWM

JAustin, LLWM

RBangert, LLWM

RCunningham

GSjoblom

[DH/HAUGHNEY MEMO]

OFC	: IMAF	: IMAF			
NAME	: DHurt:ls	: FBrown	: JSwift		
DATE	: 03/24/91	: 03/27/91	: 03/27/91		

OFFICIAL RECORD COPY

MAR 25 1991

Docket No. 40-8820

Ralph G. Leitner, Director
Southwestern Area Program Division
Office of Environmental Restoration
U.S. Department of Energy
Washington, DC 20545

Dear Mr. Leitner:

The enclosure is a report on our meeting of March 20, 1991, concerning the Amax site in Parkersburg, West Virginia. As noted in the report, we are expecting to receive your estimate of the funds necessary to provide for long-term monitoring and maintenance of the site, as well as funds needed for initial site characterization expenses (if any), by April 8, 1991.

Thank you for your assistance and participation during the March 20 meeting. We hope to make continued progress based upon our discussions during that meeting.

Sincerely,

Original Signed by

Charles J. Haughney, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Enclosure:
Memorandum from R. D. Hurt
to C. J. Haughney
dated March 5, 1991

cc: P. Keppler, Amax

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IMAF R/F	RFonner, OGC	GSjoblom
[OH/LEITNER LTR]		

*see previous concurrence

NAME	: DHurt	: ls: jc	: FBrown	: JSwift	: CHaughney
DATE	3/22/91	3/22/91	3/22/91	3/22/91	

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Department of Energy
Grand Junction Projects Office
Post Office Box 2567
Grand Junction, Colorado 81502-2567

April 5, 1991

Mr. Charles J. Haughney, Chief
Fuel Cycle Safety Branch
U.S. Nuclear Regulatory Commission
1 White Flint North
11555 Rockville Pike
Rockville, MD 20852

Subject: Tasks and Cost Estimates for the AMAX 151(c) Site, Parkersburg, WV

Dear Mr. Haughney:

Enclosed is a list of tasks and estimated costs for continuing work on the AMAX 151(c) site at Parkersburg, West Virginia, that should be funded by AMAX. This information was developed as a result of an action item from the DOE-NRC meeting in Rockville on March 20. This action item was to develop a list of tasks required to 1) complete site transfer, and 2) bring the site into long-term surveillance and maintenance (LTSM) status, as rapidly as possible. This information is sent to you at the request of L. C. Brazley, DOE EM-451.

DOE Headquarters requested that each task be assigned to one of two categories:

I. Environmental and Risk Assessment of the Site

II. Long-Term Surveillance and Maintenance

For each task in these two categories, a cost estimate and explanation is provided. Costs are summarized on the first page of the enclosure, and information on each task is provided on the following pages. In general, these tasks are those 1) required to obtain basic environmental information on the site, which currently does not exist, and 2) those associated with long-term custody of the site.

Basic environmental data are required if the DOE is to evaluate 1) what risks, if any, the site poses to the environment or health and safety of the public, and 2) status of the site if compliance with current regulations (CERCLA, RCRA, SDWA, or CWA) were to be imposed on the site.

Mr. Charles J. Haughney

-2-

April 5, 1991

Questions about this information may be directed to me at FTS
326-6006 or Charles Jones of Chem-Nuclear Geotech at FTS 326-6019.

Sincerely,

Joseph E. Virgona
Supervisory General Engineer

Enclosure

cc: R. Lightner, DOE/HQ, EM-45, GTN, w/o enc.
L. Brazley, DOE/HQ, EM-451, GTN, w/enc.
J. Solecki, DOE/ID, MS-1115, w/o enc.
C. Jones, Geotech, w/o enc.

PLAN FOR
ENVIRONMENTAL ASSESSMENT
AND
LONG-TERM SURVEILLANCE AND MAINTENANCE
OF THE AMAX SITE, PARKERSBURG, WEST VIRGINIA

Tasks that the DOE wishes AMAX to fund are summarized on the next page. Additional information on each task is provided on the pages that follow.

These tasks fall into two groups:

1. Tasks required to obtain basic environmental data that the party responsible for remedial action would normally be expected to have and provide.
2. Recurring tasks associated with long-term care and custody of the site, as provided for in Section 151(c) of the Nuclear Waste Policy Act of 1982.

All costs are in \$1000's, or K, and include 10 percent contingency. All costs are in constant FY 1991 dollars.

SUMMARY OF TASKS AND ESTIMATED COSTS

I. Environmental and Risk Assessment - ONE TIME ONLY COSTS

	<u>Est. Cost</u>	<u>FY-91</u>	<u>FY-92</u>
A. New Monitoring Wells	60K	60K	OK
B. Groundwater Sampling/Analysis	72	18	54
C. Radon Monitoring	9	9	0
D. Surveillance and Maintenance Plan	<u>\$10</u>	<u>0</u>	<u>10</u>
Total	\$151K	\$87K	\$64K

II. Long-Term Surveillance and Maintenance - ANNUAL COSTS

	<u>Estimated Annual Cost Beginning FY 1992</u>
A. Annual Site Inspection and Report	\$ 8K
B. Site Maintenance	<u>2</u>
Total	\$10K

EXPLANATION OF TASKS

I. ENVIRONMENTAL AND RISK ASSESSMENT

Costs for the following tasks are one-time only costs. They are not annual or recurrent costs.

A. Install New Monitoring Wells

Activity: Install four new groundwater monitoring wells

Rationale: None of the existing monitoring wells can be demonstrated to be in proper position, with respect to gradient, for compliance with RCRA specifications for monitoring wells.

Estimate: \$60K.

Confidence in estimate: Moderate.

B. Analysis of Groundwater Samples

Activity: Sample and analyze groundwater.

Rationale: Baseline data are required to determine water quality and assess performance of site design and construction.

Estimate: \$72K.

Confidence of estimate: Moderate. One year of quarterly to semiannual sampling will provide baseline data sufficient to evaluate risk with respect to potential compliance issues. This estimate assumes that costs for additional items, such as disposal of groundwater accumulated during bailing, are not significant.

C. Radon Monitoring

Activity: Monitor radon in air.

Rationale: Performance monitoring for compliance with NESHAP for radon in air.

Estimate: \$9K

Confidence in estimate: High.

D. Surveillance and Maintenance Plan (SMP)

Activity: Write surveillance and maintenance plan (SMP) to support long-term care and custody of the site. SMP summarizes regulatory requirements that may be enforced at the site, site history (before, during, and after remedial actions), environmental (site characterization) data, and includes the long-term plan for surveillance and maintenance of the site.

Rationale: Routine quality assurance requirement.

Estimate: \$10K

Confidence in estimate: High

II. LONG-TERM SURVEILLANCE AND MAINTENANCE

Costs for tasks listed below are annual costs.

A. Site Inspections

Activity: Annual site inspection and inspection report.

Rationale: Ensure site integrity, monitor continued performance of the site, and provide historical record of site conditions and surveillance and maintenance activities at the site.

Estimate: \$8K per year.

Confidence in estimate: High.

B. Site Maintenance

Activity: Vegetation control, fence and sign repair, and similar tasks.

Rationale: Standard procedure

Estimate: \$2K per year.

Confidence in estimate: Moderate.



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Gaston Caperton
Governor

May 2, 1991

AMAX
Environmental Services, Inc.
1707 Cole Boulevard
Golden, Colorado 80401

Attention: James E. Kerrigan

Dear Mr. Kerrigan:

In accordance with our agreement with AMAX, we wish to submit the results of our site visit to the stabilization site in Washington, Wood county, West Virginia on April 29, 1991. Our next visit will be in October 1991.

WELL MONITORING

The four wells located around the stabilization area were sampled by Rodney Kovack and Beattie DeBord. The pump on wells # 1, 3, and 4 were run for 15 minutes before a sample was collected in a PVC bottle, capped and labeled. The pump on well # 2 would not run.

The samples were returned to our laboratory and counted on April 30, 1991. The results of alpha and beta activity found was below 15 pCi/l alpha and 50 pCi/l beta. Enclosed are copies of the individual analysis.

PHYSICAL CONDITION OF THE SITE

1. STABILIZATION AREA - no channel erosion was noted and the area has an excellent stand of grass.
2. FENCE - the chain-link fence enclosing the stabilization area was sound and secure. The main gates and equipment were secured with keyed industrial locks.
3. MONITORING WELLS - the pumps on three wells were working but the pump on well # 2 was not working
4. DRAINAGE AREA - the slopes outside the fenced area were void of channel erosion and have a good stand of grass.

Sincerely yours,

Beattie DeBord

Beattie L. DeBord, Chief
Radiological Health Section

Copy: Keith McDaniel

9105080100 910502
PDR ADDCK 04008820
C PDR

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OFFICE OF ENVIRONMENTAL HEALTH SERVICES
RADIOLOGICAL HEALTH PROGRAM
151 11th AVENUE

SOUTH CHARLESTON, WV 25303 TELEPHONE (304) 348-3526/3427

Handwritten notes and stamps:
A/23
Add
McDaniel
Ltr. Encl
NF11

WEST VIRGINIA DEPARTMENT OF HEALTH
RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 4/29/91 Sample No. 1
 Date Counted 5/2/91 Sample Volume 100 ml
 Type of Sample Well Water Analyst R. Corvack
 Sample Location AMAX Washington Works
well # 1

TOTAL SOLIDS

Gross wt. 7.9860 gm.
 Tare wt. 7.8914 gm.
 Net wt. 94.6 mg.
 Alpha efficiency 10 %
 Beta efficiency 28 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	BKG	Net Count Rate CPM
Alpha	Background	60	11	.18	XXX	XXXXXXXXXX
Beta	Background	60	81	1.35	XXX	XXXXXXXXXX
Alpha	Total	60	18	.30	.18	.12
Beta	Total	60	84	1.48	1.35	.13

SUMMARY OF RESULTS

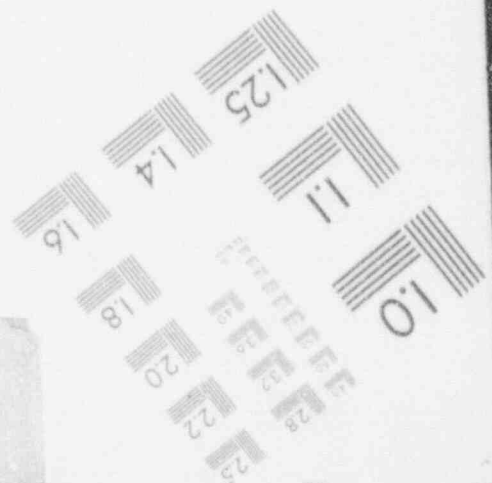
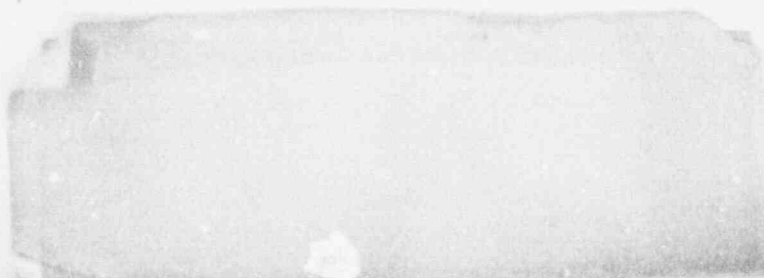
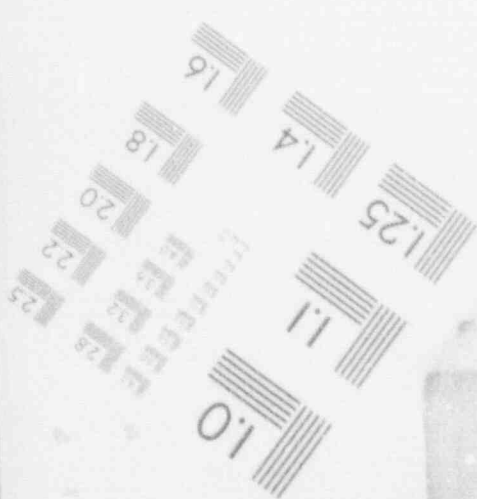
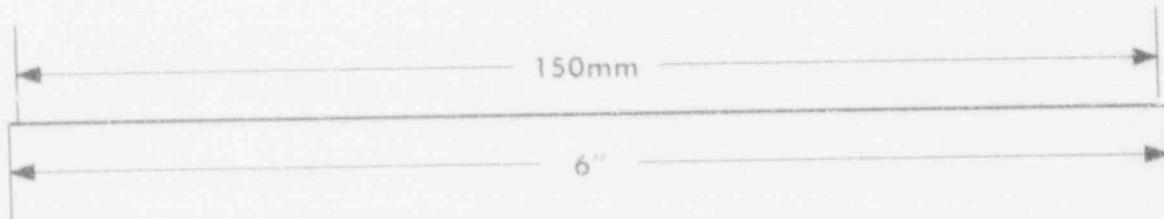
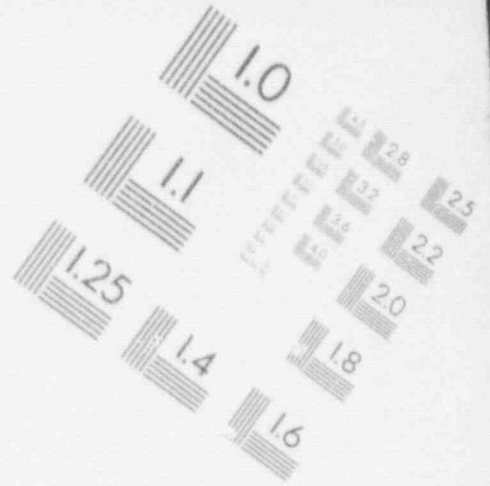
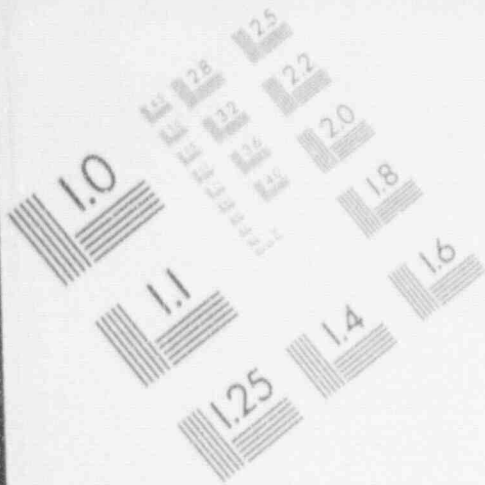
Activity - pCi/l @ 95% C.L.

	Total
Alpha	5.40 ± 8.05
Beta	2.09 ± 6.78

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427

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IMAGE EVALUATION
TEST TARGET (MT-3)



1

IMAGE EVALUATION
TEST TARGET (MT-3)

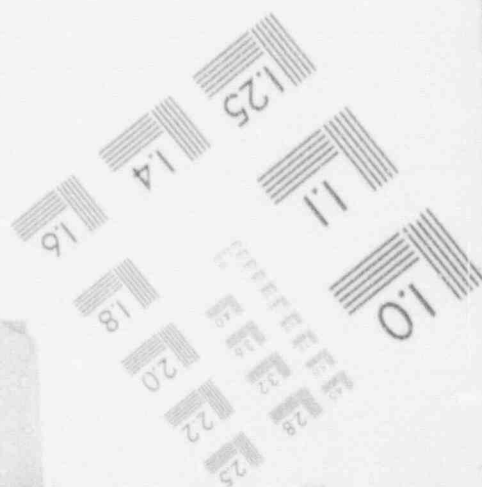
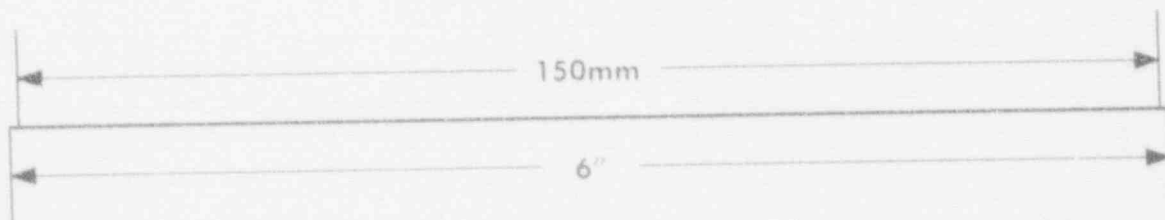
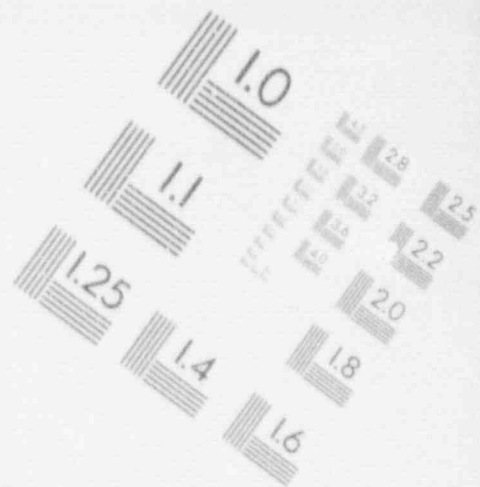
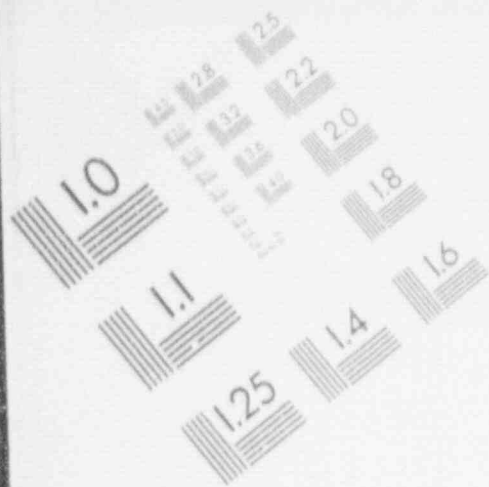
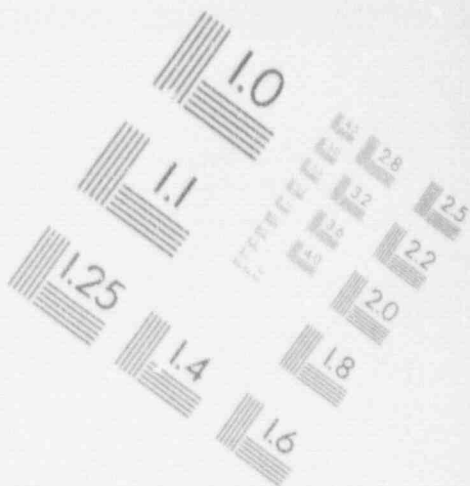
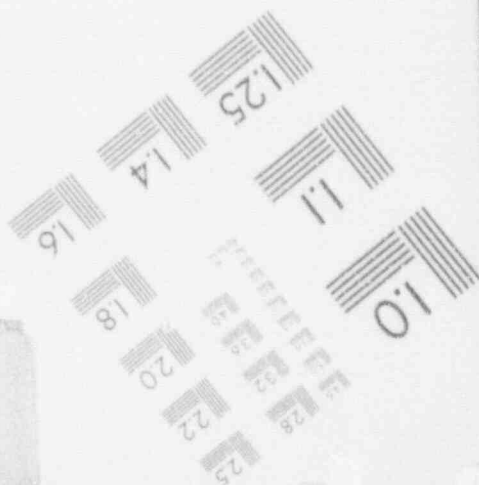


IMAGE EVALUATION
TEST TARGET (MT-3)



1.50mm

6



WEST VIRGINIA DEPARTMENT OF HEALTH RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 7/30/41 Sample No.
 Date Counted 7/30/41 Sample Volume ml
 Type of Sample 1.5 ml Analyst R. L. G. R.
 Sample Location

TOTAL SOLIDS

Gross wt. 7.0 gm.
 Tare wt. 7.0 gm.
 Net wt. 0.0 mg.
 Alpha efficiency 10 %
 Beta efficiency ~~28~~ 28 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	BKG	Net Count Rate CPM
Alpha	Background	60	11	.18	XXX	XXXXXXXXXX
Beta	Background	60	81	1.35	XXX	XXXXXXXXXX
Alpha	Total	60	7	.11	.18	-0.07
Beta	Total	60	77	1.27	1.35	-0.08

SUMMARY OF RESULTS

Activity - pCi/l @ 95% C.L.

	Total
Alpha	- 2.15 = 6.26
Beta	- 1.15 = 6.11

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427

WEST VIRGINIA DEPARTMENT OF HEALTH
RADIOLOGICAL HEALTH PROGRAM

DATA SHEET

Date Collected 4/29/91 Sample No. ?
 Date Counted 5/2/91 Sample Volume 100 ml
 Type of Sample Well WATER Analyst R. Couck
 Sample Location 1-1 MAX Washington Works
Well #4

TOTAL SOLIDS

Gross wt. 7.8888 gm.
 Tare wt. 7.7948 gm.
 Net wt. 94.0 mg.
 Alpha efficiency 10 %
 Beta efficiency 2.8 %

Plateau	Fractions	Time of Count	Total Count	Count Rate CPM	BKG	Net Count Rate CPM
Alpha	Background	60	11	.18	XXX	XXXXXXXXXX
Beta	Background	60	81	1.35	XXX	XXXXXXXXXX
Alpha	Total	60	11	.18	.18	0
Beta	Total	60	71	1.18		-0.17

SUMMARY OF RESULTS

Activity - pCi/l @ 95% C.L.

	Total
Alpha	0 ± 6.97
Beta	-2.73 ± 6.60

Industrial Hygiene Division - Radiological Health
 151-11th Avenue
 South Charleston, West Virginia 25303
 348-3526/3427



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

June 17, 1991

Docket No. 40-8820

Peter Keppler
Assistant General Counsel
Amax, Inc.
Western Area Law Department
1626 Cole Boulevard
Golden, CO 80401-3293

Dear Mr. Keppler:

In your letters of September 19, 1989, and February 12, 1990, you proposed financial arrangements for long-term monitoring and maintenance of the Parkersburg, West Virginia, site. We believe that your proposal is reasonable in most respects. The features of your proposal with which we completely agree are as follows.

1. Amax will establish a trust fund with a local bank for the purpose of providing funds for long-term monitoring and maintenance of the Parkersburg property once title and custody are passed to the Department of Energy (DOE).
2. The structure of the trust fund will be as described in your letter of September 19, 1989 (enclosed for reference), with the modification that DOE rather than the Nuclear Regulatory Commission (NRC) be named as the agency having access to the trust fund.

We suggest some modifications to other features of your proposal.

1. The fund should be arranged to provide \$5,000.00 a year in interest earnings. The \$5,000.00 would cover grass mowing, regular site inspection (three or four times a year), occasional fence and sign replacement or repair, minor site remedial action (such as filling animal holes and occasional reseeding), sampling and analysis of water samples from site monitoring wells, and bank service fees. We believe that the \$3,000.00 a year proposed in your letter of February 12, 1990, (enclosed for reference) may not quite cover the site's needs in light of the likelihood that DOE will have to pay for the well sampling and monitoring work now performed by the State of West Virginia without charge.
2. In calculating the monies required to generate \$5,000.00 in interest income, you should assume a real pre-tax interest rate of no more than 3 percent. The reasons for this are explained in our letter to Amax of August 9, 1990 (enclosed for reference).

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June 17, 1991

3. In addition to the trust fund, you should provide DOE with funds for installation of two new monitoring wells. DOE has estimated that the cost will be \$15,000.00 a well, for a total of \$30,000.00. This money could be provided to DOE at the time of title transfer or at any time before.

We believe that these modifications are necessary to provide adequate funding for long-term monitoring and maintenance. If you agree with these modifications, and notify us formally to that effect, we will promptly write a letter to DOE stating that we have approved of Amax's financial arrangements for long-term monitoring and maintenance of the Parkersburg site as required by Section 151(c) of the Nuclear Waste Policy Act of 1982. At the same time, we will begin the process of terminating Amax's NRC license. The termination amendment will be written to take effect upon DOE notifying us that they have taken title to and custody of the site.

We hope to expedite the site turnover process in every way possible. Please call me or Davis Hurt of my staff (301-492-0694) if you have any questions.

Jerry J. Swift for
 Charles J. Haughney, Chief
 Fuel Cycle Safety Branch
 Division of Industrial and
 Medical Nuclear Safety
 Office of Nuclear Material Safety
 and Safeguards

cc: J. Gatrell, DOE
 J. Virgona, DOE

Enclosures:

1. Letter from Keppler to Rouse,
dated 9/19/89
2. Letter from Keppler to LaRoche,
dated 2/12/90
3. Letter from Haughney to Keppler,
dated 8/3/90

DISTRIBUTION Docket No. 40-8820

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NAME	:RHurt:jc	:FBrown	:JSwift	:RWood	:CHaughney
DATE	:6/31/91	:6/1/91	:6/3/91	:6/17/91	:6/17/91

OFFICIAL RECORD COPY



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

JUN 25 1991

Docket No. 40-8820

Ralph G. Leitner, Director
Southwestern Area Program Division
Office of Environmental Restoration
U.S. Department of Energy
Washington, DC 20545

Dear Mr. Leitner:

The Nuclear Waste Policy Act of 1982 (NWSA) contains a provision (Section 151c) that applies to a decommissioned Nuclear Regulatory Commission (NRC)-licensed site near Parkersburg, West Virginia, owned by Amax, Incorporated. The site was used in the 1960's for processing mineral ore to recover zirconium and hafnium. Some of the ore contained enough thorium to require licensing by the Atomic Energy Commission as source material. At present, Amax holds a possession-only source material license from the NRC.

Section 151c of the NWSA states that the Department of Energy (DOE) shall assume title and custody of the site upon the satisfaction of three conditions: first, that the owner of the site request that DOE assume title and custody; second, that the site be decontaminated and stabilized in accordance with the requirements of NRC; and third, that NRC approve financial arrangements made by the owner for long-term maintenance and monitoring of the site.

The first two conditions have been satisfied. The site owner, Amax, requested that DOE assume title and custody of the site by letter of November 25, 1987 (Enclosure 1). The measures taken to decontaminate and stabilize the site were the subject of an Environmental Assessment issued by NRC in April 1982. NRC subsequently amended the license, authorizing Amax to undertake their proposed site stabilization program. The Environmental Assessment concluded that the Amax site stabilization program was consistent with NRC regulations in effect at that time, would improve the condition of the Parkersburg site, and would not have any significant adverse environmental impacts. The stabilization program was successfully completed in accordance with the plans approved by NRC. The site was then subject to a radiation survey to confirm that there was no excessive residual contamination. Monitoring by the State of West Virginia and recent visits to the site by NRC personnel have not revealed any problems with the site.

Amax and DOE have both submitted proposals to NRC concerning the amount of money that should be made available by Amax for long-term monitoring and maintenance. Amax proposed that \$3,000 would be enough for annual expenses. DOE proposed \$10,000 annually plus an up-front payment of \$150,000, mainly for upgrading site monitoring wells and analysis of groundwater samples. Upon careful consideration of the two proposals, we believe that a fair arrangement is for an up-front payment of \$30,000 (for two new monitoring wells) and a fund to provide \$5,000 of earnings in perpetuity. Our letter to Amax proposing this funding is enclosed (Enclosure 2).

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JUN 28 1991

Ralph G. Leitner

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The main reason we propose to require \$5,000 per year instead of \$10,000 per year, and \$30,000 up front instead of \$150,000, was that a substantial portion of the money included in DOE's proposal was to bring the site into compliance with the permitting requirements of the Resource Conservation and Recovery Act (RCRA) or to monitor for hazardous wastes in accordance with RCRA. We believe this to be unnecessary since the decommissioning was completed prior to the November 19, 1980, cut-off date cited in RCRA regulations.

Our intention is to terminate the Amax license once DOE takes custody of and title to the site. Establishment of funding arrangements along the lines described above is under way and will be completed soon. Based on a meeting with DOE staff members on March 20, 1991, we understand that DOE is actively preparing to acquire title to the site. We would appreciate it if the land acquisition process could be pursued as expeditiously as possible and if we could be kept informed of its progress.

Sincerely,
Original Signed by
Jerry A. Swift

Charles J. Haughney, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Enclosures:

1. Letter to Secretary Herrington
from PKeppler dated 11/25/87
2. Letter to PKeppler from
from CJHaughney dated 6/17/91

cc: Peter Keppler
Amax, Incorporated

Distribution:	Docket 40-8820 PDR	RBangart, LLWM
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DATE :6/14/91	:6/14/91	:6/14/91	:6/25/91

40-8820

POPHAM HAIK

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PETER KEPPLER
SPECIAL COUNSEL
(303) 693-1200

1300 I STREET, N.W.
SUITE 500 EAST
WASHINGTON, D.C. 20005
TELEPHONE 202-962-8700
TELECOPIER 202-962-8799

July 29, 1991

Mr. Charles J. Haughney, Chief
Fuel Cycle Safety Branch
Division of Industrial and Medical
Nuclear Safety
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Radioactive Waste Storage Area
Parkersburg, West Virginia

Dear Mr. Haughney:

This is in response to your letter dated June 17, 1991 regarding the subject site that is covered by NRC License No. SMB-1418 issued to AMAX Inc. I represent AMAX with respect to the Parkersburg site and the planned transfer of the area covered by license to the Department of Energy pursuant to Section 151(c) of the Nuclear Waste Policy Act of 1982.

In your June 17, 1991 letter, you requested that AMAX modify its proposal for financial arrangements for the long term monitoring and maintenance of the Parkersburg site. Specifically, NRC requests that the trust fund proposed by AMAX be adequate to provide \$5,000 per year in interest earnings assuming a real pre-tax interest rate of 3%. In addition, AMAX is asked to provide an additional \$30,000 to DOE for installation of two new ground water monitoring wells.

I have discussed your request with AMAX representatives and they have authorized me to state that AMAX will accept the modifications requested in your June 17,

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C PDR

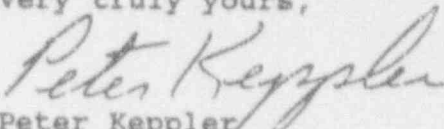
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Mr. Charles J. Haughney
July 29, 1991
Page 2

1991 letter. This will require a much larger trust fund than proposed by AMAX (\$200,000 v. the \$100,000 proposed) plus the \$30,000 payment for two new monitoring wells to be installed by DOE. Jim Kerrigan of AMAX has prepared the enclosed table and graph showing the earnings and expenses by year using a \$200,000 trust fund and a 3% real interest rate. Mr. Kerrigan's calculations indicate that the \$200,000 fund will be more than adequate to cover the annual \$5,000 monitoring and maintenance costs and periodic replacement of the fence around the stabilization area.

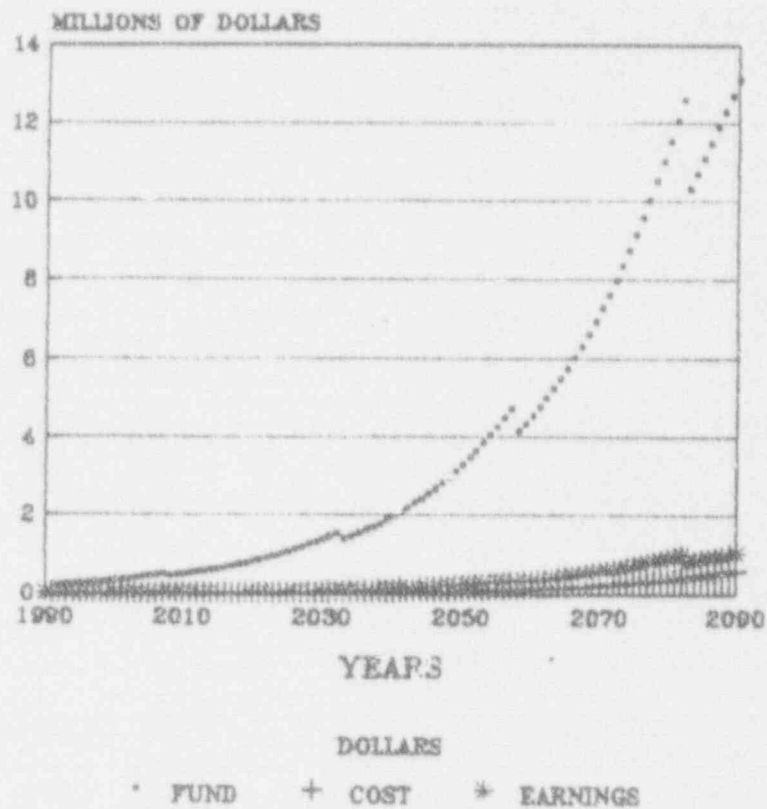
As indicated in your letter, we understand that the NRC will now notify DOE that AMAX has accepted the NRC modifications and that the parties can proceed to closing on the transfer of the Parkersburg site to DOE. I received a copy of your letter dated June 25, 1991 to Ralph G. Leitner at DOE regarding this matter and asking DOE to pursue the acquisition of this site as expeditiously as possible. AMAX is ready to move forward and complete the site transfer on the terms stated in your letters of June 17 and June 25, 1991.

Very truly yours,


Peter Keppler

47.ZPK/lad
Enclosures
cc: Jim Kerrigan (w/o enc.)

WOOD COUNTY, WV PROPERTY INITIAL FUND - \$200,000



CALCULATIONS FOR THE LONG-TERM MAINTENANCE COST AT THE WOOD COUNTY, W.V. STABILIZATION SITE

CAPITALIZATION FUND	\$200,000
INITIAL ANNUAL COST	\$5,000
REPLACE FENCE EVERY	25 YEARS
INITIAL FENCE COST IN 1982	\$21,825
INTEREST ON FUNDS	8.00 PERCENT
INFLATION RATE	5.00 PERCENT

YEAR	FUNDS	ANNUAL COST	FENCE	EARNINGS
1990				
1991	\$200,000	\$5,000		\$16,000
1992	211,000	5,250		16,880
1993	222,630	5,513		17,810
1994	234,928	5,788		18,794
1995	247,934	6,078		19,835
1996	261,691	6,381		20,935
1997	276,245	6,700		22,100
1998	291,644	7,036		23,332
1999	307,940	7,387		24,635
2000	325,188	7,757		26,015
2001	343,447	8,144		27,476
2002	362,778	8,552		29,022
2003	383,248	8,979		30,660
2004	404,929	9,428		32,394
2005	427,895	9,900		34,232
2006	452,227	10,395		36,178
2007	478,011	10,914	73,907	38,241
2008	431,430	11,460		34,514
2009	454,484	12,033		36,359
2010	478,810	12,635		38,305
2011	504,480	13,265		40,358
2012	531,572	13,930		42,526
2013	560,168	14,626		44,813
2014	590,355	15,358		47,228
2015	622,225	16,125		49,778
2016	655,878	16,932		52,470
2017	691,416	17,778		55,313
2018	728,951	18,667		58,316

Page 2

YEAR	FUNDS	ANNUAL COST	FENCE	EARNINGS
2020	810,488	20,581		64,839
2021	854,746	21,610		68,380
2022	901,516	22,690		72,121
2023	950,947	23,825		76,076
2024	1,003,198	25,016		80,256
2025	1,058,438	26,267		84,675
2026	1,116,846	27,580		89,348
2027	1,178,614	28,959		94,269
2028	1,243,944	30,407		99,515
2029	1,313,052	31,927		105,044
2030	1,386,169	33,524		110,894
2031	1,463,539	35,200		117,083
2032	1,545,422	36,960	250,276	123,634
2033	1,381,820	38,808		110,548
2034	1,453,557	40,748		116,285
2035	1,529,094	42,786		122,327
2036	1,608,635	44,925		128,691
2037	1,692,401	47,171		135,392
2038	1,780,622	49,527		142,450
2039	1,873,542	52,000		149,883
2040	1,971,419	54,600		157,714
2041	2,074,526	57,337		165,962
2042	2,183,151	60,204		174,652
2043	2,297,599	63,214		183,808
2044	2,418,193	66,375		193,455
2045	2,545,274	69,693		203,622
2046	2,679,202	73,178		214,336
2047	2,820,360	76,837		225,629
2048	2,969,152	80,679		237,532
2049	3,126,005	84,713		250,080
2050	3,291,372	88,949		263,310
2051	3,465,734	93,396		277,259
2052	3,649,596	98,068		291,968
2053	3,843,498	102,969		307,480
2054	4,048,009	108,117		323,841
2055	4,263,733	113,523		341,099
2056	4,491,308	119,200		359,305
2057	4,731,413	125,159	847,523	378,513
2058	4,137,243	131,417		330,879
2059	4,336,805	137,988		346,944
2060	4,545,761	144,888		363,661
2061	4,764,534	152,132		381,163
2062	4,993,565	159,739		399,485
2063	5,233,311	167,726		418,665
2064	5,484,251	176,112		438,740

Page 3

YEAR	FUNDS	ANNUAL COST	FENCE	EARNINGS
2065	5,746,879	184,918		459,750
2066	6,021,712	194,163		491,737
2067	6,309,285	203,872		504,743
2068	6,610,156	214,085		528,812
2069	6,924,904	224,768		553,992
2071	7,598,451	247,807		607,876
2072	7,958,520	260,198		636,682
2073	8,335,004	273,207		666,800
2074	8,728,596	286,868		698,268
2075	9,140,016	301,211		721,201
2076	9,570,006	316,272		35,601
2077	10,019,335	332,085		101,547
2078	10,488,797	348,690		839,104
2079	10,979,211	366,124		878,337
2080	11,491,423	384,430		919,314
2081	12,026,307	403,652		962,105
2082	12,584,760	423,834	2,870,015	1,006,781
2083	10,297,691	445,028		823,815
2084	10,676,480	467,277		854,118
2085	11,063,321	490,641		885,066
2086	11,457,746	515,173		916,620
2087	11,859,192	540,932		948,735
2088	12,266,995	567,979		981,360
2089	12,680,376	596,378		1,014,430
2090	\$13,098,429	\$626,196		\$1,047,874



August 16, 1991

U.S. Nuclear Regulatory Commission
Region II
Nuclear Materials Safety Section
101 Marietta Street, Suite 2900
Atlanta, Georgia 30323

Re: License No. SMB-1418

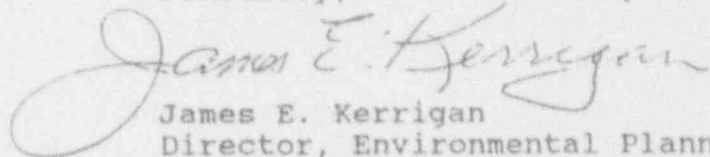
Gentlemen:

AMAX Inc. is holder of Nuclear Regulatory Commission License No. SMB-1418 covering storage of low-level radioactive waste material at an industrial site in Wood County, West Virginia.

As provided in Section 151(c) of the Nuclear Waste Policy Act of 1982, AMAX has requested the Department of Energy to assume title and custody of the stabilization area subject to this license. AMAX has satisfied the requirements of Section 151(c) of the NWPA and the stabilization area will be transferred to DOE in the near future.

As requested, AMAX hereby submits the enclosed Certificate of Disposition of Materials, NRC Form 314. AMAX requests that License No. SMB-1418 be terminated at the time the stabilization area in Wood County, West Virginia is transferred to the Department of Energy.

Sincerely,


James E. Kerrigan
Director, Environmental Planning

cc: Mr. Davis Hurt
Fuel Cycle Safety Branch
Division of Industrial and Medical
Nuclear Safety
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*sent to Murren
on
HQS
8/21/91*

4109030070

NRC FORM 314
1-80
10 CFR 20.38(c)(1)(iv)
10 CFR 40.42(c)(1)(iv)
10 CFR 70.38(c)(1)(iv)

CERTIFICATE OF DISPOSITION OF MATERIALS

INSTRUCTIONS: SEND THE COMPLETED CERTIFICATE TO THE
NRC OFFICE SPECIFIED ON THE REVERSE.

(All items MUST be completed—
print or type)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
INFORMATION COLLECTION REQUEST: 30 MIN. FORWARD
COMMENTS REGARDING BURDEN ESTIMATE TO THE
INFORMATION AND RECORDS MANAGEMENT BRANCH
(MNSB-7714), U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555 AND TO THE PAPERWORK
REDUCTION PROJECT (3150-0028), OFFICE OF MANAGE-
MENT AND BUDGET, WASHINGTON, DC 20503

LICENSEE NAME AND ADDRESS

AMAX Inc.
1626 Cole Blvd.
Golden, Colorado 80401

LICENSE NUMBER

SNB-1418

LICENSE EXPIRATION DATE

3/31/93

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT
(Check and/or complete the appropriate item(s) below.)

A. MATERIALS DATA (Check one and complete as necessary)

- ☐ 1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE.
- OR
- ☒ 2. ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF
IN THE FOLLOWING MANNER: (If additional space is needed, use the reverse side or provide attachments.)

Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal actions, including the
disposition of low-level radioactive waste, mixed waste, Greater than-Class C waste, and sealed sources, if applicable.

Soil, rubble and other materials containing low-level radioactive waste were
consolidated, stabilized and stored in a designated area on the industrial site
owned by AMAX in Wood County, West Virginia.

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement State name and
license number.

Custody and title of the materials and designated storage area are being transferred
to the Department of Energy under Section 151(c) of the Nuclear Waste Policy Act of
1982.
If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the
specific disposal procedures (e.g., decay in storage).

(see above)

B. OTHER DATA

- ☒ 1. OUR LICENSE HAS NOT YET EXPIRED. PLEASE TERMINATE IT.
2. WAS A RADIATION SURVEY CONDUCTED TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS AND TO DETERMINE WHETHER
ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE? (Check one)
- ☐ NO (Attach explanation)
- ☒ YES. THE RESULTS (Check one)
- ☐ ARE ATTACHED, or
- ☒ WERE FORWARDED TO NRC ON (Date) - 1984; Chem-Nuclear Engineering, Inc.
3. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM

NAME

James E. Kerrigan

TELEPHONE NUMBER

(303) 234-9020

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

James E. Kerrigan
Amen Resource Conservation Co.
1626 Cole Blvd.
Golden, Colorado 80401

CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

SIGNATURE

James E. Kerrigan

DATE

3/16/93

PRINTED NAME AND TITLE

JAMES E. KERRIGAN, DIRECTOR, ENVIRONMENTAL PLANNING

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC
REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS.
18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION
TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

9-109030076

STABILIZATION PLAN

CONSTRUCTION AND FINAL SURVEY

AMAX Inc. Property
Wood County, West Virginia

AMAX Inc.
Environmental Services Inc.
March 1984

Assisted by:

Chem-Nuclear Systems Inc.
Health Physics

Construction Services, Inc.
Earthwork

ALARA
Health Physics

Bell Consultants
Mapping, Surveying and Engineering

Mid-Eastern GeoTech Inc.
Geotechnical Engineering

Carl Morris Consultant
Construction Engineering

August 9, 1991

Docket No. 40-8820

Roger P. Whitfield, Director
Office of Environmental Restoration
U.S. Department of Energy
Washington, DC 20545

Dear Mr. Whitfield:

The enclosure is a letter from AMAX Incorporated, to the U.S. Nuclear Regulatory Commission (NRC) concerning the AMAX property in Parkersburg, West Virginia. AMAX has accepted a compromise financial arrangement for the long-term monitoring and maintenance of the Parkersburg property proposed by the NRC. This is the same compromise described in the letter of June 25, 1991 from Charles J. Haughney to Ralph G. Lightner.

In our opinion, all of the conditions of the Nuclear Waste Policy Act of 1982 bearing on the Parkersburg property have been satisfied. The next step is for the U.S. Department of Energy (DOE) to take title and custody of the site as required by the legislation.

We understand that the paperwork necessary to acquiring the Parkersburg site is being prepared. When DOE has completed the acquisition process, we will terminate the NRC license held by AMAX. Please inform us of the schedule to take title and custody. We would appreciate your response by September 16, 1991, so that the Commission can complete this termination in a timely manner.

Sincerely,

John Greeves for
/S/

Richard E. Cunningham, Director
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material
Safety and Safeguards

Enclosure:

Letter of July 29, 1991, from
Peter Keppler to Charles Haughney

cc: Peter Keppler, AMAX

Distribution:
NRC File Center

IMSB R/F

JAustin, LLWM

IMIF R/F

IMSB R/F

*SEE PREVIOUS CONCURRENCE

Docket No. 40-8820

IMNS Central File

JSwift

JParrot, LLWM

TJohnson, LLWM

JGreeves

[RDH/LIGHTNER]

PDR

IMAF R/F

RDhurt

RFonner, OGC

RWood, 12-E-4

NMSS R/F

FBrown

TJohnson, LLWM

R Bangert, LLWM

OFFC	:IMAF*	:IMIF	:IMAF*	:PTSB:NR*	:IMSB	:DC:IMNS	:D:IMNS
NAME	:RDhurt	:c:ls:FBrown	:JSwift	:RWood	:CHaughney	:JGreeves	:RCunningham
DATE	:8/07/91	:8/ /91	:8/07/91	:8/07/91	:8/ /91	:08/9/91	:08/9/91

OFFICE RECORD COPY



46-5536
PDR

August 16, 1991

U.S. Nuclear Regulatory Commission
Region II
Nuclear Materials Safety Section
101 Marietta Street, Suite 2900
Atlanta, Georgia 30323

Re: License No. SMB-1418

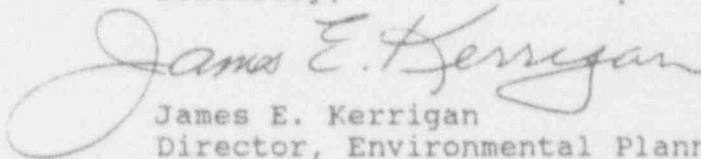
Gentlemen:

AMAX Inc. is holder of Nuclear Regulatory Commission License No. SMB-1418 covering storage of low-level radioactive waste material at an industrial site in Wood County, West Virginia.

As provided in Section 151(c) of the Nuclear Waste Policy Act of 1982, AMAX has requested the Department of Energy to assume title and custody of the stabilization area subject to this license. AMAX has satisfied the requirements of Section 151(c) of the NWPA and the stabilization area will be transferred to DOE in the near future.

As requested, AMAX hereby submits the enclosed Certificate of Disposition of Materials, NRC Form 314. AMAX requests that License No. SMB-1418 be terminated at the time the stabilization area in Wood County, West Virginia is transferred to the Department of Energy.

Sincerely,


James E. Kerrigan
Director, Environmental Planning

cc: Mr. Davis Hurt
Fuel Cycle Safety Branch
Division of Industrial and Medical
Nuclear Safety
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

230017

REC'D
F10V030070 F10816
PDR ADDCK 04008820

Amax Resource Conservation Company
1626 Cole Boulevard, Golden, Colorado 80401-3293 USA
Telephone (303)-234-9020, Facsimile (303)-231-0230

A/27
NF11
11

NRC FORM 314
6-80
10 CFR 30.36(c)(1)(iv)
10 CFR 40.42(c)(1)(iv)
10 CFR 70.36(c)(1)(iv)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB 3150-004
EXPIRES 4/30/82

CERTIFICATE OF DISPOSITION OF MATERIALS

INSTRUCTIONS: SEND THE COMPLETED CERTIFICATE TO THE
NRC OFFICE SPECIFIED ON THE REVERSE.

(All items MUST be completed—
print or type)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
INFORMATION COLLECTION REQUEST: 30 MIN. FORWARD
COMMENTS REGARDING BURDEN ESTIMATE TO THE
INFORMATION AND RECORDS MANAGEMENT BRANCH
(MWR-7710), U.S. NUCLEAR REGULATORY COMMISSION,
1415 IOWA, DC 20545 AND TO THE PAPERWORK
REDUCTION PROJECT (3150-0029), OFFICE OF MANAGE-
MENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE NAME AND ADDRESS

AMAX Inc.
1626 Cole Blvd.
Golden, Colorado 80401

LICENSE NUMBER

SMB-1418

LICENSE EXPIRATION DATE

3/31/93

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT:
(Check and/or complete the appropriate items below.)

A. MATERIALS DATA (Check one and complete as necessary)

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- OR
- ☒ 2. ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF
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owned by AMAX in Wood County, West Virginia.

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement State name and
license number.

Custody and title of the materials and designated storage area are being transferred
to the Department of Energy under Section 151(c) of the Nuclear Waste Policy Act of
1982.
If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the
specific disposal procedures (e.g., slurry in storage).

(see above)

B. OTHER DATA

- ☒ 1. OUR LICENSE HAS NOT YET EXPIRED. PLEASE TERMINATE IT.
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ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE? (Check one)

☐ NO (Attach explanation)

☒ YES. THE RESULTS (Check one)

☐ ARE ATTACHED, or

☒ WERE FORWARDED TO NRC ON (Date) — 1984; Chem-Nuclear Engineering, Inc.

3. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM

NAME

James E. Kerrigan

TELEPHONE NUMBER

(303) 234-9020

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

James E. Kerrigan
Amax Resource Conservation Co.
1626 Cole Blvd.
Golden, Colorado 80401

CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

SIGNATURE

James E. Kerrigan

DATE

8/16/91

PRINTED NAME AND TITLE

JAMES E. KERRIGAN, DIRECTOR, ENVIRONMENTAL PLANNING

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC
REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS.
18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION
TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

STABILIZATION PLAN

CONSTRUCTION AND FINAL SURVEY

AMAX Inc. Property
Wood County, West Virginia

AMAX Inc.
Environmental Services Inc.
March 1984

Assisted by:

Chem-Nuclear Systems Inc.
Health Physics

Construction Services, Inc.
Earthwork

ALARA
Health Physics

Bell Consultants
Mapping, Surveying and Engineering

Mid-Eastern GeoTech Inc.
Geotechnical Engineering

Carl Morris Consultant
Construction Engineering

AUG 19 1991

Docket No. 40-3820

MEMORANDUM FOR: Jerry J. Swift, Section Leader
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety

FROM: R. Davis Hunt
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety

SUBJECT: RADIATION SURVEY FOR TERMINATION OF THE AMAX LICENSE

I have reviewed the radiation survey for the Parkersburg site stabilization area submitted by AMAX, Incorporated, in 1984. In my opinion, it conforms in all important respects to the requirements of 10 CFR 40.42, Expiration and Termination of Licenses. It will not be necessary for AMAX to submit any additional information on residual contamination.

Original Signed By

R. Davis Hurt
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety

DISTRIBUTION	Docket No. 40-8820 PDR
NRC File Center	IMNS Central File
INAF R/F	NMSS R/F
IMSB R/F	JSwift
RDHurt	FBrown

[RDH/MEMO TO SWIFT]

1FC	IMAF	PR4	111	IMAF					
NAME	RDHurt:jc	FBrown	JSwift						A
DATE	8/19/91	8/19/91	7/17/91						

OFFICIAL RECORD COPY

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PDR ADOCK 0400 3820
PDR

SEP 16 1991

File

Docket No. 40-8820

Mr. Peter Keppler
Assistant General Counsel
Amax, Inc.
Western Area Law Department
1626 Cole Boulevard
Golden, CO 80401-3293

Dear Mr. Keppler:

Dr. A. Thomas Clark has been assigned NRC Project Manager for license SMB-1418 held by Amax, Incorporated, on its site near Parkersburg, West Virginia. Dr. Clark succeeds R. Davis Hurt, who has accepted a position with the Defense Nuclear Safety Board.

Dr. Clark is located at:

U.S. Nuclear Regulatory Commission
Advanced Fuel and Special Facilities Section
Fuel Cycle Safety Branch
Mail Stop 6H-3
Division of Industrial and Medical Nuclear Safety
Office of Nuclear Material Safety and Safeguards
Washington, DC 20555

He may also be reached at (301)-492-3424.

Sincerely,

Original Signed

John W. N. Hickey, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

9

DISTRIBUTION		Docket 40-8820	PDR
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IMIF r/f	NMSS r/f	JParrott	
INSB r/f	TClark	JAustin	
TJohnson	JSwift	RFonner	
FBrown	RWood		

170109 JS/MEMO TO PETER KEPPLER

DFC :IMIF	:IMIF	:IMIF
NAME :JSwift:jc:fb	FBrown	:JHickey
DATE :09/13/91	:09/13/91	:09/14/91

040-2/0071 710719
PTR ADUCK 04008820
PDR

79
A/DM
N.F.

40-476

POPHAM HAIK

2400 ONE TOWER CENTER
1200 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303-693-1200
TELECOPIER 303-693-2164

SCHNOBRICH & KAUFMAN, LTD.

DENVER, COLORADO

3300 PIPER JAFFRAY TOWER
252 SOUTH NINTH STREET
MINNEAPOLIS, MINNESOTA 55402
TELEPHONE 612-332-4800
TELECOPIER 612-334-2713

4100 CENTRAUS FINANCIAL CENTER
100 S.E. SECOND STREET
MIAMI, FLORIDA 33131
TELEPHONE 305-530-0050
TELECOPIER 305-530-0055

PETER KEPPLER
SPECIAL COUNSEL
(303) 693-1200

1300 I STREET, N.W.
SUITE 500 EAST
WASHINGTON, D.C. 20005
TELEPHONE 202-962-8700
TELECOPIER 202-962-8798

September 24, 1991

Dr. A. Thomas Clark
U.S. Nuclear Regulatory Commission
Advanced Fuel and Special Facilities Section
Fuel Cycle Safety Branch
Mail Stop 6H-3
Division of Industrial and Medical Nuclear Safety
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

Dear Dr. Clark:

I recently received a letter stating that you had been assigned as the NRC Project Manager for license SMB-1418 issued to Amax Inc. for low level radioactive waste storage at an industrial plant site near Parkersburg, West Virginia. It is my understanding that Amax has submitted all information and assurances necessary to satisfy requirements under the Nuclear Waste Policy Act of 1982 in order to transfer the low level radioactive waste storage area to the Department of Energy. Amax is anticipating that the site transfer can be completed by the end of 1991.

As you can see from the letterhead, I am no longer with Amax but I am continuing to handle this matter for the company. If you have any questions or need information regarding the Parkersburg site, please contact me at the letterhead address.

Very truly yours,

Peter Keppler
Peter Keppler

101.ZPK/lad

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10/11/91

March 6, 1992

MEMORANDUM FOR: Jerry J. Swift, Section Leader
Advanced Fuel and Special
Facilities Section

FROM: A. Thomas Clark, Jr.
Advanced Fuel and Special
Facilities Section

SUBJECT: LETTER FROM POPHAM HAIK ON AMAX

The subject letter, received on March 6, 1992, states that "a document has been submitted to the NRC Commissioners regarding the Amax Parkersburg, West Virginia site". The letter also further thanks me for my "assistance in obtaining favorable consideration of this matter by the NRC Commissioners".

I did not inform Mr. Keppler, the author of the letter, that a document had been submitted to the Commission(ers). Rather, I told him we were preparing such a document and wanted some confirmation on a point concerning the Resource Conservation and Recovery Act. In addition, I intend to treat Amax as I would any other licensee and do not intend to seek favorable consideration for them in this matter, only as it may be consistent with normal agency practice.

/S/

A. Thomas Clark, Jr.
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety

DISTRIBUTION:

Docket No. 40-8820

Central Files

JWNHickey

NMSS R/F
JJSwift

IMNS R/F
FBrown

IMAF R/F
ATClark

OFC	: IMAF	ATC	3/16	: IMAF	:	:	:	:
NAME	: ATClark	: FBrown	: JJSwift	:	:	:	:	:
DATE	: 3/6	1992	: 3/6	1992	:	1	1	: 1 1 : 1 1

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/i



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

JUL 06 1992

Docket No. 40-8820
License No. SMB-1418

Mr. Henry L. Longest, II
Director
Office of Emergency and Remediation Response
U. S. Environmental Protection Agency
Washington, DC 20460

Dear Mr. Longest:

This letter is to inform the U. S. Environmental Protection Agency (EPA) that the U. S. Nuclear Regulatory Commission is preparing to terminate the license of AMAX Incorporated for its site near Parkersburg, West Virginia, upon the transfer of title and custody of the site to the U. S. Department of Energy (DOE) in accordance with the provisions of Section 151(c) of the Nuclear Waste Policy Act of 1982.

This information is being provided to EPA in accordance with NRC policy published in its Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites, 57 FR 13389, April 16, 1992, which states that NRC will inform EPA about specific decommissioning actions at Site Decommissioning Management Plan sites.

From 1957 to 1974, the AMAX site was used for the production of zirconium metal, primarily for the United States government. Some of the ores from which the zirconium was extracted in 1961 and 1962 contained more than 0.05 per cent by weight thorium plus uranium, and, therefore, the extraction was performed under a license issued by the Atomic Energy Commission. Following the removal of some wastes, the license was terminated. At a later date a manufacturer of welded steel pipe purchased the site and began to construct a plant on a portion of the site. The manufacturer stopped construction in 1978 after an explosion and three fires occurred when construction equipment encountered buried zirconium sponge. The license was reactivated in 1978 by the NRC.

As described in an environmental appraisal prepared by the NRC (see enclosed document) in 1982, the site was stabilized in 1982 by the removal of some contaminated soil and the formation of an earthen berm over the contaminated soil containing the zirconium. The State of West Virginia's Department of Health and Human Resources, Office of Environmental Health Services has monitored ground water at the stabilized site since that time.

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C PDR

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A/ [initials]
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A/83

Mr. Henry L. Longest, II

-2-

July 6, 1992

Congress set forth conditions in Section 151 of the Nuclear Waste Policy Act of 1982 for the NRC to use in determining that a site is ready for transfer to the DOE. Those conditions have now been met and the NRC has so informed the DOE. The site will remain under permanent Federal custody, with restricted access. AMAX has provided appropriate funds for site maintenance, access barriers, and monitoring.

The project manager for this site is Dr. A. Thomas Clark, Jr. [(301) 504-3424]. If you have any questions or comments on this matter, please contact Dr. Clark.

Sincerely,

Original signed by
Robert M. Bernero

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

Enclosure:
Environmental Impact
Appraisal dated April 1982

cc: Mr. Edwin B. Erickson, Administrator
U. S. Environmental Protection Agency, Region 3
841 Chestnut Building
Philadelphia, PA 19107

Mr. James Elder, Director
Office of Ground Water and Drinking Water
U. S. Environmental Protection Agency
401 M Street, S. W.
Washington, DC 20460

DISTRIBUTION: Docket No. 40-8820 /w/o Encl PDR

NRC Central File

RCunningham

JParrott

JSwift

NMSS R/F

JGreeves

RFonner

ATClark

IMNS R/F

RBangart

JHickey

NMSS OD R/F

IMSB R/F

JAustin

FBrown

*See previous concurrence

OFC	IMAF* <i>ATC</i>	IMAF*	IMAF*	IMSB*	LLDR*
NAME	ATClark:ls	FBrown	JSwift	JHickey	JAustin
DATE	06/25/92	06/ /92	06/ /92	06/ /92	06/ /92
OFC	LLWM*	DD:IMNS*	D:IMNS	DD:IMNS <i>ATC</i>	D:NMSS <i>RB</i>
NAME	RBangart	JGreeves	RCunningham	GArletto	RBernero
DATE	06/ /92	06/ /92	06/ /92	06/ /92	06/ /92

OFFICIAL RECORD COPY
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July 8, 1992

Docket No. 40-8820

Mr. James E. Kerrigan
AMAX Resource Conservation Company
1626 Cole Boulevard
Golden, CO 80401-3293

Dear Mr. Kerrigan:

This is to inform you that responsibility for managing Docket No. 40-8820 for the AMAX Parkersburg site now resides in the Decommissioning and Regulatory Issues Branch within the Division of Low Level Waste Management and Decommissioning. Any questions you may have should be directed to:

Dr. John H. Austin, Chief
Decommissioning and Regulatory
Issues Branch
Division of Low Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

Dr. Austin can be reached on (301) 504-3435 .

Sincerely,

/S/

John W. N. Hickey, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety

DISTRIBUTION:

Docket No. 40-8820

JWNHickey

JHAustin

PDR

INWS Central Files

JJSwift

JParrott

IMSB R/F

ATClark

MHarvey

IMF R/F

FLBrown

NRC Central File

OFFICE	IMAF ATC	SCDB	IMAF	IMSB	
NAME	ATClark	FLBrown	JJSwift	JWNHickey	
DATE	7/8/92	7/17/92	7/8/92	7/8/92	1/1

OFFICIAL RECORD COPY

G:KERRIGAN.LTR

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C PDR

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Heim
Divide, make
run less reflects
done
this
7/20/92

July 8, 1992

MEMORANDUM FOR: John H. Austin, Chief
Decommissioning and Regulatory Issues Branch
Division of Low-Level Waste Management
and Decommissioning, NMSS

FROM: John W. N. Hickey, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

SUBJECT: TRANSFER OF LICENSING RESPONSIBILITY FOR SITES UNDERGOING
DECOMMISSIONING: AMAX SITE

In discussions between our Divisions on March 9, 1992, it was agreed that licensing responsibility for the Amax, Inc. site near Parkersburg, West Virginia, would be transferred to the Division of Low-Level Waste Management and Decommissioning once the commission paper had been sent advising the Commission of the intent to terminate the license, No. SMB-1418. The commission paper, SECY-92-234, was sent June 30, 1992. This condition having been accomplished, the Amax, Inc. site is transferred effective July 8, 1992.

/S/

John W. N. Hickey, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

DISTRIBUTION: Docket No. 40-8820

NRC File Center	Region II	JGreeves
PDR	RBangart, LLW	RCunningham
NMSS R/F	WBrach, LLW	FCombs, IMOB
IMSB R/F	MMessier, LFDCB	
FBrown	PTing, SG	
JSwift	RGramann, SGIB	

OFC	IMAF <i>[Signature]</i>	IMAF <i>[Signature]</i>	IMSB <i>[Signature]</i>	DO: IMNS	D: IMNS
NAME	JSwift:ls	FBrown	JHickey <i>[Signature]</i>	JGreeves	RCunningham
DATE	07/07/92	07/13/92	07/07/92	07/13/92	07/13/92

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