

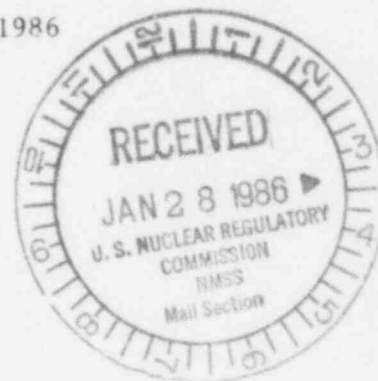
ARGONNE NATIONAL LABORATORY

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Telephone: (312) 972-7798

January 20, 1986

Ms. Merri Horn
Division of Fuel Cycle and Material
Safety
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Merri:

In preparation for the impact analysis for West Chicago project, ANL team members have reviewed the background information and identified the missing data which are pertinent to the analysis.

The data requirements, as indicated in the attachment, include four waste components: sludge and tailings, contaminated soils underlying West Chicago site, vicinity property wastes, and other wastes. Please forward the attached list to Kerr-McGee Chemical Corporation as soon as possible. We would like to have these data before February 14, 1986, if possible.

If you have any questions about our data needs, please call me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Steve Y. Tsai".

Steve Y. Tsai
Environmental Research Division

SYT:maz

Attachment

cc: S. Lewis, NRC-OELD
P. Merry-Libby



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Data Requirements for Kerr-McGee West Chicago Project

Missing Data	Reasons Data Are Needed
Sludge (Pond Sediments) and Tailings (Ore Residue)	
1. Concentrations in solid waste of RCRA hazardous chemical species as defined in 40 CFR 264.92-94 (imposed under 40 CFR 192).	To carry out modeling of leaching and groundwater transport of regulated chemical species [needed to get leach times].
2. Concentrations in solid waste of all chemical species regulated in groundwater by the State of Illinois (Title 35, Subtitle C, Chap. 1, Sections 302.208, 302.304, 303.202, 303.203).	To carry out modeling of leaching and groundwater transport of regulated chemical species [needed to get leach times].
3. Independent measurements of Th-230 concentration.	Values given in FES assume equilibrium in U decay series which may be very wrong. Only one sludge and one tailings sample were measured directly for Th-230. Good values of Th-230 concentrations are needed because of the ingrowth of Ra-226.
4. Good data on concentrations of regulated chemical species (described above) in samples of leachate from sludge and tailings neutralized in a way similar to that to be used in the actual cleanup. Studies on the sensitivity of leachate concentrations to changes in the amounts of lime used for neutralization should also be carried out.	Data is needed for several reasons: 1) The Stabilization Plan (p.3.28a) states that composite samples were first leached and then the leachate was neutralized. Data obtained in this manner is not useful for modeling studies which require concentrations in leachate from samples which are neutralized by the method to be used in the actual cleanup, 2) More data than one composite sample from each pile are needed. Samples from several points in each pile should be separately neutralized and leached. Variations in the results, along with the requested sensitivity analysis, will show the reliability of this important data.
5. Densities and water contents of sludge and tailings.	Needed for source inventories, dose estimates, cost estimates and for modelling groundwater transport.
Contaminated Soils Underlying West Chicago Site	
1. Depth profile of regulated species, (i.e., some metals, fluoride, radioactive species, etc.)	Needed to ensure that volumes of soil under ponds, waste pile, factory site which are proposed to be removed by Kerr-McGee (Stabilization Plan) include all contaminants which have migrated down, and may be attached to underlying soil. The fact that most mobile species (SO_4 , Cl, etc) have appeared in nearby aquifers suggests that other less mobile regulated species may appear in the future.
2. Concentrations of all regulated chemical species as described above for sludge residues. This includes data on radioactive species (U, Th-232, Th-230) which are	Needed to carry out modelling of leaching and groundwater transport of regulated chemical and radioactive species.
3. Concentrations of all regulated chemical species in leachate from samples neutralized in a way similar to that proposed in cleanup.	Needed to carry out modelling of leaching and groundwater transport of regulated chemical and radioactive species.
4. Density and water content of contaminated soils.	Needed for source inventories, dose estimates, cost estimates and for modelling groundwater transport.

Data Requirements for Kerr-McGee West Chicago Project (cont'd)

Missing Data

Reasons Data Are Needed

Vicinity Property Wastes

1. Same data as in 2 and 3 above for contaminated soils.

See reasons above

2. Definite volumes, densities, and water contents of wastes (Volumes of Reed Kepler material depend on desired level of concentrations remaining after cleanup).

Needed for dose estimates and cost estimates for various alternatives and for modeling described above.

Other Waste Components

1. Same data as is required in 2 and 3 above for Contaminated Soils.

Data is needed for same reasons as above. However because these are small volume components, concentrations are needed for only those regulated species which appear in high concentrations. For others it is sufficient to know upper limits to concentrations.

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FCUF ☒ PDR ☒
FCAF ☐ LPDR ☒
WM ☐ I&E REF. ☒
WMUR ☐ SAFEGUARDS ☐
FCTC ☐ OTHER ☐

DESCRIPTION:

attached are
data requirements

01/29/86 INITIAL CEC