



Department of Energy

Ohio Field Office
West Valley Area Office
P.O. Box 191
West Valley, NY 14171

*Docket
M-32*

March 24, 1997

Mr. Gary C. Comfort, Project Manager
U.S. Nuclear Regulatory Commission
MS T8D14
Washington, DC 20555

SUBJECT: Transmittal of Information on Sludge Wash and THOREX Wash Cement-Waste Long-Term Testing at the West Valley Demonstration Project (WVDP)

REFERENCE: Letter 1795:96:08, G. C. Comfort to T. J. Rowland, "Long-Term Testing for Cement Stabilization of Supernatant and Sludge Wash Recipes (TAC NO. L21412)," dated October 17, 1996

Dear Mr. Comfort:

The U.S. Nuclear Regulatory Commission's (NRC) alternative proposal for test frequency, as presented in the referenced letter, has been reviewed by WVDP personnel. As is clearly demonstrated in the enclosed documents,

WVNS-TRQ-062, Revision 1, and WVNS-TP-062, Revision 2, "Long-Term Compressive Strength Testing of the Sludge Wash Liquid/Portland Type I Cement Waste Form;"

WVNS-TRQ-063, Revision 1, and WVNS-TP-063, Revision 2, "Long-Term Compressive Strength Testing of the Sludge Wash Liquid/Portland Type V Cement Waste Form;" and

WVNS-TR-70-027, Revision 0, "Final Report on Long-Term Testing of Sludge Wash Cement-Waste Form"

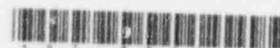
all test data exceed NRC requirements and display an overall increasing compressive strength with extended cure time.

If, after reviewing the enclosed reports, the NRC still desires the extension of the test program, the WVDP proposes to conduct testing annually for two additional years, resulting in a five year test program. The "final" report would be revised after each annual test and submitted to the NRC to satisfy the annual reporting requirement.

Testing of the THOREX cement waste drums would follow the same philosophy, with testing every twelve months for a five year period. This would result in the desired reductions in cost, personnel dose, and radioactive waste generation while still providing additional data on the

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condition of the cement waste. WVNS-TRQ-075, Revision 1, and WVNS-TP-075, Revision 1, "Long-Term Compressive Strength Testing of the THOREX Wash Cement Waste Form" which describe the planned testing are also enclosed.

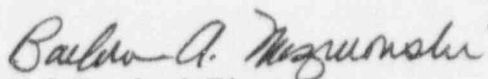
The WVDP is currently addressing the 208 - 300 "transition drums" produced with the early sludge wash #1 liquid and containing some amount of PUREX supernatant from previous processing. The approach is two-fold: (1) determine the impact of including the waste inventory of these drums in the site closure performance assessment as unstabilized waste and, (2) perform additional testing on the actual waste samples extracted from the cement drums after their approximate five-year cure period to determine if the cement waste now passes NRC stability criteria.

The test procedure for testing samples from 268 of the potential transition drums, which comprise the first two large decontaminated sludge wash concentrate lots, has been drafted and the drum locations have been established within the Drum Cell. Samples of two drums from each drum lot will be obtained. Compressive strengths before and after a 90-day immersion in synthetic saltwater will be determined. If test results are positive, the Waste Qualification Report will be updated and resubmitted to the NRC for review. Any potential testing on the remaining 32 transition drums of cemented sludge wash 1, produced just prior to cementing the above concentrate lots, will be addressed after the results of identified testing are available.

Updated indexes for Volumes 2 and 3 of the Sludge Wash Waste Form Qualification Program notebooks that reflect the new information are also included.

Please contact P. A. Abrams at (716) 942-4769 if you have any questions related to this matter.

Sincerely,



T. J. Rowland, Director
West Valley Demonstration Project

Enclosures: WVDP Procedures

cc: D. C. Meess, WVNS, WV-C, w/o enc.

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Volume 2
Waste Form Qualification Program
For Cement Solidification Of Sludge Wash Liquids
With Type I Portland Cement

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<u>DOCUMENT NO.</u>	<u>TITLE</u>	<u>REVISION</u>	<u>STATUS</u>
WVNS-TPL-70-12	Cement-Waste Form Qualification Of Sludge Wash Liquids	2	Complete
WVNS-TRQ-044	Waste Form Qualification Work For Sludge Wash Liquids	0	Complete
WVNS-TP-044	Procedure For Waste Form Qualification Work For Sludge Wash Liquids	0	Complete
WVNS-TSR-044	Waste Form Qualification Work For Sludge Wash Liquids	0	Complete
WVNS-TRQ-051	Test Request-Sludge Wash Cement-Waste Windows of Composition	0	Complete
WVNS-TP-051	Test Procedure-Sludge Wash Cement- Waste Windows of Composition	0	Complete
WVNS-TSR-051	Test Summary Report-Sludge Wash Cement-Waste Cores Window of Composition	0	Complete
WVNS-TRQ-053	Verification Cubes For 20% TDS Sludge Wash Cement-Waste	0	Complete
WVNS-TP-053	Verification Cubes For 20% TDS Sludge Wash Cement	0	Complete
WVNS-TSR-053	Verification Cubes For 20% TDS Sludge Wash Cement-Waste	0	Complete
WVNS-PCP-002	Process Control Plan for Cement Solidification of Sludge Wash liquid	9	Complete
WVNS-TR-70-024	Waste Form Qualification Report WVDP Stabilized Sludge Wash Cement-Waste With Type I Portland Cement	0	Complete
N/A	Transmittal Letters	N/A	N/A

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<u>DOCUMENT NO.</u>	<u>TITLE</u>	<u>REVISION</u>	<u>STATUS</u>
WVNS-TRQ-062	Long Term Compressive Strength Testing of the Sludge Wash Liquid/Portland Type I Cement Waste Form	1	Complete
WVNS-TP-062	Long-Term Compressive Strength Testing of the Sludge Wash Liquid/Portland Type I Cement Waste Form	2	Complete
Long-Term Testing	LONG-TERM COMPRESSIVE STRENGTH TESTING OF THE SLUDGE WASH LIQUID/PORTLAND TYPE I CEMENT WASTE FORM ● First Test Period Letter Report, March 18, 1994 Cores	N/A	Complete

Volume 3
Waste Form Qualification Program
For Solidification Of Sludge Wash Liquid With
Type V Portland Cement

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<u>Document No.</u>	<u>Title</u>	<u>Revision</u>	<u>Status</u>
N/A	Introduction to Volume 3	N/A	N/A
N/A	Transmittal Letters	N/A	N/A
WVNS-PCP-004	Process Control Plan For Cement Solidification Of Sludge Wash Liquid With Type V Portland Cement	4	Complete
WVNS-TR-70-023	Waste Form Qualification Report: WVDP Stabilized Sludge Wash Cement-Waste With Type V Portland Cement	1	Complete
N/A	WVNS Internal Letters	N/A	N/A
WVNS-TRQ-052	Test Request, Sludge Wash Cement-Waste Cores Windows of Composition Type V Cement	0	Complete
WVNS-TP-052	Test Procedure, Sludge Wash Type V Cement-Waste Cores: Windows Composition	1	Complete
WVNS-TSR-052	Test Procedure, Sludge Wash Type V Cement-Waste Cores: Windows Composition	0	Complete

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<u>Document No.</u>	<u>Title</u>	<u>Revision</u>	<u>Status</u>
WVNS-TRQ-057	Verification Cubes for Sludge Wash Cement-Waste With Type V Portland Cement	1	Complete
WVNS-TP-057	Verification Cubes Sludge Wash Cement-Waste With Type V Portland Cement	1	Complete
WVNS-TSR-057	Verification Cubes Sludge Wash Cement-Waste With Type V Portland Cement	0	Complete
WVNS-TRQ-063	Long Term Compressive Strength Testing of the Sludge Wash Liquid/Portland Type V Cement Waste Form	1	Complete
WVNS-TP-063	Long-Term Compressive Strength Testing of the Sludge Wash Liquid/Portland Type V Cement Waste Form	2	Complete
Long-Term Testing	LONG-TERM COMPRESSIVE STRENGTH TESTING OF THE SLUDGE WASH LIQUID/PORTLAND TYPE V CEMENT WASTE FORM		
	• First Test Period Letter Report, March 18, 1994 Cores	N/A	Complete