

0047257

Project Managers' Meeting
3718-F Alkali Metal Treatment and Storage Facility
2440 Stevens Center, Room 2200
Richland, Washington

Meeting Held February 3, 1997
From 1:00 to 3:00 p.m.



The undersigned indicate by their signatures that these meeting minutes reflect the actual occurrences of above dated Project Managers' Meeting.

Ellen Mattlin Date: 5-1-97
Ellen M. Mattlin, Project Manager, RL

Douglas H. Chapin Date: 5/1/97
Douglas H. Chapin, Transition Projects Division/FFTF Program, RL

Jeanne J. Wallace Date: 5/1/97
Jeanne J. Wallace, Project Manager, Washington State Department of Ecology

3718-F, Contractor Concurrence

Fred A. Ruck, III Date: 5/1/97
Fred A. Ruck, III, Contractor Representative, FDH

Thomas A. Dillhoff Date: 5/1/97
Thomas A. Dillhoff, Contractor Representative, B&W

Purpose: Discuss Closure

Meeting Minutes are attached. The minutes are comprised of the following:

- Attachment 1 - Agenda
- Attachment 2 - Summary of Discussion and Commitments/Agreements
- Attachment 3 - Attendance List

ATTACHMENT 1
AGENDA

- o Concerns raised at previous meeting
 - o Proposed sampling plan
 - o Discussion
 - o Ecology concurrence on path forward
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CONCERNS

- o Components Treated at Facility
 - Types of components/component materials
 - "Laboratory" equipment
 - Prior use of components
 - Potential for PCB contamination
 - o Chemical Reactions of Alkali Metal in alcohols
 - Reaction Products
 - Corrosivity of reaction productsFOIL
 - o Reaction Tank Waste Disposal
 - Spent alcohols
 - Water solutions
 - Separator drain sumpDRAIN SUMP DRAWING
 - o Soil Discoloration
- FACILITY DRAWING

PROPOSED SAMPLING PLAN/PATH FORWARD

- o List of analytes
 - o Revisions to SAP
 - Sample locations
 - Sampling methods/Duplicate samples
 - Analytical methods
 - QA/QC
 - Data validationFOIL
 - o PE Involvement
 - o Summary Table
- FOIL

ATTACHMENT 2
MINUTES FROM PROJECT MANAGERS MEETING
3718-F Alkali Metal Treatment and Storage Facility
February 3, 1997

During the initial DQO meeting on 1/14/97, Ecology representatives raised several questions concerning the treatment of sodium wetted components at 3718-F and the associated waste streams. The Part A permit for the facility mentions the cleaning of "laboratory" equipment, but does not clearly define what this means, or the materials or possible contaminants on this equipment. Additionally, Ecology wanted information on the composition of cleaned components and the chemical reactions involved in the cleaning process to ascertain the possible dangerous waste constituents that may have been released to the soils near 3718-F. The potential for the release of PCBs from treatment of machined parts also was discussed.

In order to provide first hand knowledge of operations, Dave Roohr was invited to the DQO meeting to answer specific questions about the treatment process. Mr. Roohr worked at the TSD unit from 1974 until it ceased operations in 1987. Dr. Bill Brehm was also present at the DQO meeting to discuss the chemistry of the treatment process and any possible deleterious effects on the materials being treated.

COMPONENTS TREATED AT 3718-F

Dave Roohr discussed the treatment tanks used at the TSD unit, and the components treated at the unit. He stated that components used in several buildings on site for sodium loop and sodium component testing were cleaned for subsequent disposal or reuse. These test loops were prototypic of systems and components used in Fast Flux Test Facility (FFTF), and were, therefore, considered "laboratory-scale" equipment. This term is used in the context of an engineering laboratory; no equipment from analytical laboratories was treated at 3718-F.

Mr. Roohr discussed the three stainless steel treatment tanks, and the use of each. The long narrow tank was used for the cleaning of flux monitors of the type destined for use at FFTF. These monitors are long stainless steel encapsulated instruments used to measure the neutron flux levels from the FFTF reactor core. They were cleaned by immersion in Dowanol, which is a trade name for 2-butoxy ethanol. Dowanol was used because the reaction rate with sodium was slower than the reaction rate of lighter alcohols or water and, therefore, better controlled.

There were also two other reaction tanks used at the TSD unit. One of these had been removed and disposed of several years ago and the other was still on the concrete pad when 3718-F closure commenced. One reaction vessel contained Dowanol and the other contained water. These were used to clean other stainless steel components for reuse or disposal. Mr. Roohr stated that no

materials other than stainless or possibly carbon steel were treated in the reaction tanks.

All components treated in the tanks had been used in sodium environments prior to cleaning. The components consisted of piping, valves, sealed instruments, and electromagnetic pumps. No freshly machined parts were cleaned; therefore, it is highly unlikely that components treated at the facility could be a source of PCB contamination. The reaction process took up to several days to complete, depending on the amount of sodium on the component, and the presence of tight crevices which would minimize the surface area available for reaction. Dave also stated that he saw no evidence of any corrosion on components or materials after cleaning which could result in leaching of metals into the reaction solutions.

CHEMICAL REACTIONS (TREATMENT PROCESS)

Dr. Bill Brehm next discussed sodium/water and sodium/alcohol reactions, and the potential for corrosion of components treated in the alcohol or water baths. Dr. Brehm stressed the fact that the cleaning techniques used at the TSD unit were common industry practices and were used in several nations for cleaning sodium wetted components.

In discussions on sodium/water reactions, Dr. Brehm stated that the reaction will produce sodium hydroxide and hydrogen. Sodium hydroxide from these reactions would not be present in sufficient concentrations to cause appreciable corrosion of stainless steel components. He also discussed a study he had taken part in to determine the most appropriate material for the construction of new double shell tanks at Hanford. This study focused on the effects of strong caustic and high temperature environments on stainless steel. Experimental data determined that stainless steel was highly resistant to caustic attack, even at caustic concentrations greater than 20% NaOH and the temperatures greater than 200°F, which were much more severe conditions than those present in the 3718-F reaction tanks.

In sodium/alcohol reactions, Dr. Brehm stated that the products would be alkoxides and hydrogen. Alkoxides are the organic equivalent of strong inorganic bases, such as sodium hydroxide. He indicated that the alkoxides would not be present in sufficient concentrations in the reaction tanks to present a significant corrosion potential, thus it is unlikely that hazardous constituents were leached out of the stainless steel during treatment.

REACTION TANK WASTE DISPOSAL

Dave Roohr stated that the fluids in the cleaning tanks were changed out when the sodium reaction rate had significantly decreased. Prior to 1985, both the alcohol and water tanks were emptied directly onto the concrete pad, which was sloped towards a concrete drain trough which connected to the 300 Area process sewer system. Prior to performing this discharge, Dave stated

that the drain trough was cleaned out to ensure that the liquids would not overflow the trough. In 1985, the alcohol solutions were placed in drums and handled as hazardous waste. Water solutions continued to be discharged to the process sewer until the TSD unit ceased treatment operations in 1987.

SEPARATOR DRAIN SUMP

There was a discussion concerning the separator drain sump shown on the TSD unit drawings. This sump is located near the East side of the concrete pad and consists of two vertical steel tubes which extend from near ground level to approximately 5 feet deep into the ground. The drawing shows that one of the tubes collected liquid effluents from the burn scrubber and had a piping connection to the 300 Area process sewer. This tube had a cover plate on the bottom, with a valved piped connected to the cover plate for the apparent purpose of draining liquids or sludge into the second tube. This second tube appears to be open to the soil on the bottom. Mr. Roohr does not recall the valve ever being opened to drain the collection tube; however, this would be a likely place for any potential soil contamination, and will be included in the Sampling and Analysis Plan.

SOIL DISCOLORATION

The subject of soil discoloration was also discussed. Tom Dillhoff and Jack Sonnichsen met with Steve Moore and Clint Stuart at the TSD on January 22nd to review his photographs and discuss the need to sample at this location. It was difficult to tell from the photographs where to locate a sampling point. Steve discussed some discoloration along the edge of the concrete pad. He generally believed that this discoloration ran along the entire East edge of the pad and that any soil sample collected along the edge of the pad and near the surface would be adequate. Therefore, it was agreed at the meeting that sampling along the East side of the concrete pad made the most sense during Phase I.

PATH FORWARD

It was tentatively agreed that the path forward would consist of the following.

- o The analytes of concern will be total lithium, total sodium, and total potassium
- o The initial sampling would be limited to three locations. This will represent Phase 1 and is designed to identify if there is any contamination to the soil that resulted from operation of the 3718-F TSD unit.
- o The sampling and analysis plan will be revised and submitted to Ecology for approval. In addition to the comments provided at the January 14th meeting, the following comments were provided by Ecology.

ECOLOGY COMMENTS

Ecology tentatively agreed with the path forward. As stated at the meeting, most of the comments asked at the January 14th meeting were addresses. In addition most of the written comments that were prepared by Ecology prior to the meeting were addressed during the meeting. As a result, the outstanding issues that remained included:

- o provide additional detail on the QA/QC aspects to the sampling and analysis plan
- o consider the use of a 7000 Series AA (Atomic Absorption) method of analysis in addition to the 6010 ICP;
- o use a phased approach and define Phase 1 to be the worst case or most probable locations for locating areas of contamination;
- o add a section that provides a description of the components that were treated and the methods used for treating these components.

ACTIONS

- o Joan and Cliff to discuss Path Forward with Jeanne Wallace
- o Jack to collect additional information on Method Detection Limits and Limit of Quantification for both Method 6010 and 7000 Series Methods before making a decision on the method to be used
- o FAX a copy of DQO Meeting Minutes for August 1995 to Joan.
- o It was agreed that data validation would consider all raw data and QA/QC samples
- o SAP to be revised and submitted to Ecology for approval. The revised SAP will use the 304 SAP as a guide and will incorporate Ecology comments.

ATTENDANCE
ATTENDANCE SHEET

PROJECT MANAGERS MEETING
SOIL SAMPLING AND ANALYSIS

3718-F Alkali Metal Treatment and Storage Facility
February 3, 1997
Room 2200/2440 Stevens

NAME	AFFILIATION	PHONE
Jack Sonnichsen	RFSH	376-9956
Stephanie Jensen	Damos + Moore	376-5960
ELLEN MATLIN	DOE-RL	376-2385
Doug Chapin	DDE-RL / TPD / FTF Project	373-9396
Ken J Young	RFSNW	373-7423
Tom Dillhoff	B;W Hanford	376-0441
Bill Brehm	BW HC	376-9779
D.S. ROOHR	FDH	376-3420
JOAN K. BARTZ	ECOLOGY	736-5407
Clint Stuart	"	736-2010

Distribution:

J. K. Bartz	Ecology	B5-18
R. M. Carosino	RL	A4-52
D. H. Chapin	RL	R3-79
T. A. Dillhoff	B&W	N2-57
S. K. Johansen	MACTC	A4-35
E. M. Mattlin	RL	A5-15
S. M. Price	FDH	H6-23
F. A. Ruck III	FDH	H6-23
J. C. Sonnichsen	RFSH	H6-24
C. D. Stuart	Ecology	B5-18
R. W. Szelmezcza	RFSH	L6-05
J. A. Wallace	Ecology	B5-18
RMIS		
Field File Custodian		H6-08

ADMINISTRATIVE RECORD: 3718-F Alkali Metal Treatment and Storage Facility
TS-3-3 (H6-08)

Washington State Department of Ecology Nuclear and Mixed Waste Hanford Files,
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Please send comments on distribution list to John C. Sonnichsen, Jr. (H6-24),
509-376-9956.