Action Memorandum

Subj: ON-SITE DEMONSTRATION OF THE LOW TEMPERATURE THERMAL TREATMENT (LT^3) PROCESS FOR THE REMEDIATION OF JET FUEL CONTAMINATED SOILS AT NAVAL AUXILIARY LANDING FIELD (NALF), CROWS LANDING, CA

1. Approximately 1,250 cubic yards (1,625 tons) of soil contaminated with JP-5 fuel mixed with other types of contaminants such as crankcase oil are found in the fire training pit at NALF. Total petroleum hydrocarbons in the soil were found to be at levels up to 5,400 ppm. These levels are in excess of the state agencies guidelines for hydrocarbons in the soil. If hydrocarbons leach form the fire training pit into groundwater, a potential threat to human health or the environment exists. Therefore, remedial measures are being taken to remove and treat the contaminated soil.

2. The objective of the remediation demonstration action proposed in this Action Memorandum is to evaluate the LT^3 process of Weston Services, Inc. for treatment of the hydrocarbons contaminated solid. The LT^3 process involves applying heat to the soil to evaporate the volatile contaminants from the soil and concentrating the hydrocarbons in the evolved gas by condensation and adsorption. The temperature in this process is about $600^{\circ}F$.

3. The contaminated soil will be excavated and stockpiled for the treatment process. The soil is sized to less than 2 inches by a screen. Soil will be fed into a single jacketed trough by a jacketed screw conveyer with four parallel screws to be heated and mixed. The trough is heated by a self-contained circulating hot oil system. The vaporized materials are passed through a baghouse to remove particulates and then into two condensers and an activated carbon column. The first condenser is air cooled and is used to remove moisture and to capture hydrocarbons with high molecular weights while the second is a refrigeration-type condenser for further removal of moisture and hydrocarbons with low molecular weights. The remaining hydrocarbons in the gas stream will be treated with an activated carbon column. The treated soil will be used as surficial fill onsite and the excavation cavity backfilled with clean fill. Laboratory analysis will be performed on untreated and treated soil to assess and verify the effectiveness of this technology.

4. Treatment of 1,250 cubic yards of contaminated soil is expected to cost approximately $300K. Cost elements include labor, equipment, chemicals, laboratory analysis, transportation, backfilling of cavity and surficial fill of treated soil. This funding is available from Western Division, Naval Facilities Engineering Command.

5. The removal action proposed is outlined in the following documents:

-- "Engineering Evaluation/Cost Analysis (EE/CA)" by Battelle, October 1990
-- "Sampling and Analysis Plan" by Battelle, October 1990
-- "Site Health and Safety Plan" by Weston Services, Inc., September 1990
-- "Work Plan, Low Temperature Thermal Treatment Demonstration Project" by Weston Services, Inc., September 1990

These documents were submitted to the California Department of Health Services, Stanislaus County, Department of Environmental Resources,

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California Regional Water Quality Control Board, Stanislaus County Air Pollution Control District, and Environmental Protection Agency Region 9 for review and comments.

6. The removal action proposed is consistent with present Remedial Investigation activities. Approval is requested to implement this removal action as described above. The remedial activities are being coordinated with the California Department of Health Services, Stanislaus County Department of Environmental Resources and the California Regional Water Quality Board.

7. The California Department of Health Services, Stanislaus County Department of Environmental Resources and California Regional Water Quality Control Board have reviewed and found all documents pertaining to this removal action to be acceptable, allowing the removal action to commence. The Stanislaus County Department of Environmental Resources, Air Pollution Control District has issued Weston Services, Inc., an Air Permit and Authority to Construct valid from November 30, 1990 to November 30, 1992.

Indicate approval by signing below.

W.A. Carpenter Date: APR 24 91

Signature

W.A. CARPENTER

Name

OIC NAVY CROWS LANDING

Title