

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

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April 5, 1988

File No. 2129.2011B (LWT)

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SAN DIEGO

Mr. William Cornils  
Head, Environment-Energy Management  
Division, Code 460  
Mare Island Naval Shipyard  
Vallejo, CA 94592

Subject: 900 Area—Compliance with Order No. 87-170 and Comments on Soil  
Sampling Plan for Detection of Spent Abrasives

Dear Mr. Cornils:

On March 2, 1988, Lila Tang of my staff, accompanied by Richard Della Valle of your staff, inspected the 900 Area. During the inspection spent abrasive was observed to be in contact with the water in Mare Island Strait. Provision C.4. a. and b. of Order No. 87-170 requires that spent abrasives in contact with Mare Island Strait be removed by March 1, 1988. You are therefore in violation of Specification B.3.b. of Order No. 87-170.

You previously stated that you would be unable to comply with the March 1, 1988 deadline primarily because the extent of the spent abrasive in Mare Island Strait is still unknown. In light of this, you felt that an investigation of the extent of the waste at this site will be necessary.

J. C. Bare, Commander, CEC, USN transmitted (Ser 461.3/33) a sampling plan proposal prepared by IT Corporation dated February 25, 1988. The stated objective of the plan is the "quantitative assessment of potentially hazardous materials associated with overland runoff of 'Green Diamond' sandblasting materials into the Mare Island Strait from the Building 900 Area". For the purposes of compliance with Order No. 87-170, the objective of the plan should be expanded to include the determination of the extent of the sandblasting materials currently in Mare Island Strait, and the determination of any impacts to groundwater of the waste currently on site.

Below are our comments on the proposed plan. They are listed by subject. Upon incorporation of these comments, the plan is approved.

**1. Chemical Analytical Parameters and Methods**

The plan proposes to analyze soil samples for priority pollutant metals, tin, and total chromium. We are somewhat confused by this since total chromium is a priority pollutant. The plan also states that this study will focus on indicator metals such as lead, chromium, and tin. How does this 'focus' relate to the analytical parameters?

In any case, soil samples should be analyzed for at least the following constituents: total chromium, copper, lead, nickel, zinc, and organotins. The total concentrations as well as soluble concentrations

using the Waste Extraction Test procedures specified in Title 22 of the California Code of Regulations should be determined.

For analytical methods, the plan references SW-846, 2nd ed. The most recent 3rd edition of SW-846 should be used. The analytical method for organotins should be that described in 'Speciation of Butyltins and Methyltins in Seawater and Marine Sediments by Hydride Derivatization and Atomic Absorption Detection,' Naval Ocean Systems Center, Technical Report 1037, July 1985. Based on this document, samples for organotin analysis should be stored in polycarbonate plastic containers at 0°C. The holding times for these samples should not exceed 100 days.

## 2. Boring Depths

The plan proposes to drill down to 4 feet in the core area (37 borings) and down to 3 feet in the peripheral area (21 borings). This is generally adequate, however deeper borings may also be necessary. The depths of the samples analyzed for the Verification Study were not fully documented, making it difficult to determine at what depth waste was no longer found.

In the core area, three of the borings should be drilled to at least 7 feet. One of these three will also need to be drilled to 11 feet or some other appropriate depth to allow for installation of a monitoring well in this area. The 7-foot depth is suggested because the log for Verification Study boring 900-3 showed a "dark gray, saturated fine sand.. Fill" down to about 7 feet. This description may indicate some sandblasting material to this depth. The locations of the deeper borings should be randomly distributed but will depend upon access.

In the peripheral area, four of the borings should also be drilled to at least 7 feet. As in the core area, two of these four will need to be drilled to greater depths to allow for installation of monitoring wells. The 7-foot depth suggested here is based on the fact that two deeper soil samples from Verification Study boring 900-2 have slightly elevated chromium, zinc, copper and nickel concentrations which are indicative of the waste. These two samples may have been taken from as deep as 7 feet according to the sampling intervals.

If not continuously cored below the fill, the deeper borings should at a minimum be sampled at 5', 7', 10', (15', ...) bottom of hole. The samples collected which are not destined for chemical analyses should be logged by the geologist in the field. The samples should also be retained for laboratory classification using ASTM D-422. This will verify the field classification as well as assist in monitoring well design for future phases.

## 3. Study Area

The plan proposes to sample up to the "line of lowest tide." A soil sample from Verification Study boring 900-4 had elevated chromium

concentration of 300 mg/kg. This boring is at the line of lowest tide. It is obvious from this that the study area needs to go beyond this line.

Sediment samples taken out in this area should be at 0, 1, and 2 feet. The distribution of the sampling points will depend on field conditions. The goal of this sampling will be to determine the lateral extent of the sandblasting waste.

#### 4. Soil Samples for Chemical Analyses

The plan proposes to collect samples in the core area at 0.5', 1.5', 2.5', and 3.5'. In the peripheral area, samples are proposed to be collected at 0-1 foot, 1-2 foot, and 2-3 foot intervals. In addition to this, samples should be collected as described above for the deeper borings.

The plan proposes that the uppermost two samples will be analyzed in all cases. This is acceptable. The plan goes on to say that "progressively deeper samples will be analyzed if the previous interval shows chemical levels above action limits." Since there are no established action levels for metal constituents in soil, we suggest that, for the deeper samples, 1) the concentrations measured in Verification Study boring 900-1 be used as the guideline, or 2) all samples will be analyzed.

#### 5. Groundwater Monitoring Wells

The plan does not propose installation of groundwater monitoring wells. As discussed above, we believe that at least three wells should be installed for this site. The design and installation would preferably follow the guidelines contained in EPA's RCRA Ground-water Monitoring Technical Enforcement Guidance Document. However, less rigorous design standards may also be acceptable for this initial phase.

Development water from the wells must be disposed of properly, such as to the Industrial Wastewater Treatment Plant. The groundwater samples collected should be analyzed for the parameters listed in the Analytical Parameters section above, except for organotins. Turbidity, pH, and EC should be added to this list for groundwater samples.

#### 6. Miscellaneous

The drill cuttings should be disposed of properly (e.g. to a hazardous landfill if analyzed samples show hazardous levels). If the borings can cause a problem by acting as pathways for contaminants to groundwater, they should be properly sealed within 24 hours of drilling. This will probably be a problem for only the deeper borings.

#### 7. Schedule

The schedule proposed is acceptable. We will extend the schedule three weeks to allow incorporation of our comments. Based on this, please

Mr. Cornils

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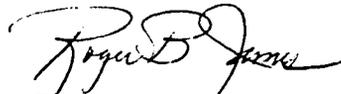
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submit a report of findings by July 25, 1988, and a proposed remedial action plan by August 22, 1988.

Please be aware that the above schedule does not constitute an extension of time for compliance with Specification B.3.b. of Order No. 87-170. You are currently in violation of this specification. We will decide on the appropriate enforcement action to be taken after we receive and review the reports completed for this investigation. Timeliness and cooperation will be factors in the consideration.

If you have any questions, please contact Lila Tang at (415)464-1246.

Sincerely,



Roger B. James  
Executive Officer

cc: Al Wanger, DHS/TSCD  
Karen Scheuermann, EPA  
Cliff Covey, Solano County Dept. of Public Health  
Mitch Whorton, City of Vallejo  
Dean Peterson, Western Div., NFECC