



Tetra Tech EM Inc.

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November 6, 1997

Mr. Michael Rochette
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Subject: Self-Monitoring Program Requirements for the West-Side Aquifers Treatment System (WATS) and the East-Side Aquifer Treatment System (EATS) at Moffett Federal Airfield (MFA), California

Dear Mr. Rochette:

This letter summarizes proposed treated water discharge monitoring requirements for the above-referenced treatment systems. Tetra Tech EM Inc. (TiEMI) prepared this summary at the request of the U.S. Navy. Construction of both the WATS and the EATS is expected to be completed in February 1998. The systems will begin discharging to the MFA storm drains after startup testing confirms that both systems effectively treat all chemicals of concern (COCs) to levels specified in the construction specifications and the substantive permit limits. This letter briefly describes both treatment systems, the outfall locations, the effluent limits, system capacity, and the proposed sampling and analysis frequency that will be followed to verify that the systems meet the substantive requirements of the National Pollutant Discharge Elimination System (NPDES) permit No. CAG912003, Order No. 094-087.

WATS Description

The WATS is located north of Building 45. It will treat water from eight extraction wells and two utility sumps near Hangar 1 using hydrogen peroxide and ozone oxidation followed by an air stripper. The system will treat an anticipated flow of 70 gallons per minute (gpm), with capacity to treat a flow of 120 gpm. Details of the system can be found in the WATS Definitive Design Report, the WATS Definitive Design Specifications, and the WATS Definitive Design Drawings, all dated April 23, 1997. The system will discharge to the MFA storm drain, which flows through the National Aeronautics and Space Administration (NASA) settling basin to the stormwater retention pond. The stormwater retention pond has no outlet, but during periods of flooding, its contents may be pumped to Stevens Creek. The flow rate of the WATS will be continuously monitored and recorded by the system's programmable logic controller (PLC).

EATS Description

The EATS is located northeast of Hangar 3. It will treat water from five extraction wells on the eastern side of the base. The system will treat water by air stripping followed by two granular activated carbon (GAC) units in series. Details of the system can be found in the EATS Definitive Design Report, the EATS Definitive Design Construction Specifications, and the EATS Definitive Design Drawings, dated May 5, 1997. The system will discharge

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Effluent Sampling and Analysis

The effluent from the WATS and EATS will be analyzed to verify that COCs are being removed to levels below permit limits. COCs in the west-side aquifers and the east-side aquifer are volatile organic compounds (VOCs) or fuel-related petroleum hydrocarbons. Therefore, the WATS and EATS effluent will be analyzed monthly for VOCs, extractable total petroleum hydrocarbons (TPH), and purgeable TPH. Additionally, the WATS and EATS effluent will be analyzed annually for metals because of sporadic detections of various metals in the effluent of the Site 9 source control measures (SCMs). The effluent from both systems will also be analyzed quarterly for total dissolved solids (TDS) and annually for toxicity as measured by a 96-hour bioassay. During each sampling event, pH, turbidity, and temperature will be monitored by field measurements. The WATS and EATS effluent limits are presented in Table 1 and the sampling and analysis frequency is presented in Table 2. Because semivolatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PAHs), and ethylene dibromide are not known contaminants in the west-side aquifers or the east-side aquifer, the WATS and EATS effluent will not be analyzed for these constituents. These sampling requirements are consistent with sampling requirements for the regional groundwater remediation system to be operated by the Middlefield-Ellis-Whisman (MEW) companies north of U.S. Highway 101.

Results of each sampling event will be summarized in a letter and provided to you each month. These self-monitoring reports will include summary tables of all analytical results, flow rate, and field parameters for the month. Raw laboratory sheets will also be included as an attachment to the self-monitoring report. The reports will generally follow the same format used for the Site 9 SCM self-monitoring reports.

If you have any questions regarding the proposed sampling and analysis schedule for the WATS and the EATS, please us at (303) 312-8856 (Berestka) or (303) 312-8874 (Mower).

Sincerely,


David J. Berestka, P.E.
Project Engineer


Timothy E. Mower
Project Manager

DJB/jem

cc: Stephen Chao, U.S. Navy
Hubert Chan, U.S. Navy
Su Don Tu, U.S. Navy
Don Chuck, U.S. Navy
Administrative Record

TABLE 1

**SUBSTANTIVE PERMIT LIMITS FOR THE
WEST-SIDE AQUIFERS TREATMENT SYSTEM (WATS) AND
EAST-SIDE AQUIFER TREATMENT SYSTEM (EATS)
MOFFETT FEDERAL AIRFIELD, CALIFORNIA**

Constituent	Instantaneous Maximum Limit (µg/L)	Method of Analysis
VOCs		EPA Method 601 or equivalent
1,1,1-Trichloroethane	5.0	
Tetrachloroethene	5.0	
Trichloroethene	5.0	
1,1-Dichloroethene	5.0	
1,2-Dichloroethane	0.5	
Vinyl Chloride	0.5	
1,2-Dichloroethene	5.0	
1,1-Dichloroethane	5.0	
1,1,2-Trichloroethane	5.0	
Methylene Chloride	5.0	
Chloroform	5.0	
any other purgeable halocarbon	5.0	
BTEX		EPA Method 602 or equivalent
Benzene	1.0	
Toluene	5.0	
Ethylbenzene	5.0	
Total Xylenes	5.0	
Total Petroleum Hydrocarbons (TPH), purgeable and extractable	50.0	EPA Method 8015 or equivalent
Metals		CLP Metals
Arsenic	10.0	
Cadmium	2.2	
Chromium (VI)	22.0	
Copper	23.6	
Lead	6.4	
Nickel	320.0	
Selenium	10.0	
Silver	8.2	
Zinc	220.0	

Notes:

CLP contract laboratory program
VOC volatile organic compound
µg/L micrograms per liter

TABLE 2

**PROPOSED SAMPLING AND ANALYSIS FREQUENCY
WEST-SIDE AQUIFERS TREATMENT SYSTEM (WATS) AND
EAST-SIDE AQUIFER TREATMENT SYSTEM (EATS)
MOFFETT FEDERAL AIRFIELD, CALIFORNIA**

Analysis	System Influent	System Effluent	Receiving Waters¹
VOCs	Monthly	Monthly	²
BTEX	Monthly	Monthly	²
TPH Purgeable	Monthly	Monthly	²
TPH Extractable	Monthly	Monthly	²
Metals (total)	Annually	Annually	NS
96-hour Bioassay	NS	Annually	NS
TDS	NS	Quarterly	Annually
Hardness as mg/L CaCO ₃	NS	Annually	Annually
Field Parameters			
pH	Monthly	Monthly	Annually
Turbidity	Monthly	Monthly	Annually
Temperature	Monthly	Monthly	Annually
Flow rate	Continuous	Continuous	NA

Notes:

¹Receiving waters for WATS - NASA settling basin; receiving waters for EATS - Northern Channel

²Sampled within 24 hours after an exceedence identified in the effluent

BTEX Benzene, toluene, ethylbenzene, and total xylenes
 NA Not applicable
 NS Not sampled
 NASA National Aeronautics and Space Administration
 TPH Total petroleum hydrocarbons
 TDS Total dissolved solids
 VOCs Volatile organic compounds