UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

October 1, 2007

In Reply Refer To: WTR-7

Suzanne Chaewsky
AC Transit
10626 International Boulevard
Oakland, California 94603

Re: August 28, 2007 Clean Water Act Inspection

Dear Ms. Chaewsky:

Enclosed is the September 24, 2007 report for our inspection of the AC Transit facility at 2016 MacDonald Ave., Richmond, CA, 94801. Please submit a short response to the Summary of Findings in Section 3.0 of this report to EPA (to the attention of Anna Yen), with copies to the City of Richmond and the Regional Water Quality Control Board, by **November 30, 2007**.

The main findings are summarized below:

1. This AC Transit facility is not subject to any federal categorical standards. However, since the facility has been designated a significant industrial user (SIU), it is subject to applicable pretreatment requirements in 40 CFR 403.
2. This facility must comply with local limits. For many years, this facility has been unable to achieve consistent compliance with the local limit for zinc.
3. The facility should target its pH setpoint to 9.2 in its pretreatment systems for more effective removal of zinc.
4. The facility should also look into other ways of improving its pretreatment systems, such as adding ultrafiltration to the end of each pretreatment system for additional particulate and oily emulsion removal.

We would like to thank you and Skip Porter for your helpfulness and courtesy during the inspection. We remain available to you and the City of Richmond to assist in any way. If you have any questions, please call Anna Yen at (415) 972-3976 or e-mail her at yen.anna@epa.gov.

Sincerely,
<Original signed by>
Ken Greenberg
Chief, CWA Compliance Office

Enclosure

cc: Mary L. Phelps, City of Richmond, enclosure by e-mail
Michael Chee, RWQCB-San Francisco Bay, enclosure by e-mail

U.S. Environmental Protection Agency
Region 9
Clean Water Act Compliance Office

NPDES Compliance Evaluation Inspection Report

Industrial User:	AC Transit
Industrial User Address:	2016 MacDonald Ave., Richmond, CA 94801
Inspection Date:	August 28, 2007
EPA Region 9 Inspectors:	Greg Arthur, Environmental Engineer Anna Yen, Environmental Engineer Water Division, CWA Compliance Office
City of Richmond Inspectors:	Mary Phelps, Senior Industrial Waste Inspector Stephen Friday, Senior Industrial Waste Inspector City of Richmond, Public Works Department, Waste Water Division
Facility Contacts During Inspection:	Suzanne Chaewsky, Environmental Engineer Harvey "Skip" Porter, Maintenance Superintendent

Report Prepared by Anna Yen on September 24, 2007.

1.0 Scope and Purpose

Based on the 2006 Pretreatment Annual Report submitted by the City of Richmond, this AC Transit facility has been having compliance problems. The annual report indicated that four notices of violation (NOVs) had been issued, but no further details were provided. The main purpose of the inspection on August 28, 2007 was to learn more about the compliance issues and determine if additional steps need to be taken.

1.1 General and Process Description

This AC Transit facility provides maintenance, washing, and fueling services on AC Transit buses. The facility generally has two main sources of wastewater, with a separate pretreatment system and discharge point for each of these two main sources.

A. Maintenance Building
Pressure washing of the undercarriage of buses and maintenance on buses are provided in this building.

Steam Bay
Lifts built into the floor elevate the buses, and heated water is sent through a pressure washer to wash the undercarriages and engines of buses. Trenches in the floor collect the wash water. Wash water generated in other parts of this facility as well as spent bus coolant (a Nalco coolant that is a non-ethylene-glycol solution) from bus maintenance is also transported over and discharged to the steam bay trenches. The steam bay is operated by the day shift, seven days a week.

The wastewater in the trenches flows to two separators underground, in series. Separator #1 is a three-chamber basin with coalescing plates to catch oils. Separator #2 is a one-chamber basin. AC Transit was not certain of the sizes of these separators but estimated that Separator #1 had a capacity of 400-500 gallons and Separator #2 had a capacity of 300-400 gallons.

Inspection Pits
Maintenance on the buses is performed in this area. All floor drains are closed off. Oils and fluids are collected in containers. These are then hauled offsite.

On a level below is the "lift station." Fluids from the floor above drain into a drum, outfitted with a pump, which then pumps all the fluid to the pretreatment system A. Also on this level is a waste oil tank, the contents of which are pumped to a used oil tank at the level above.

Pretreatment System A
See Section 1.3

B. Fuel Island and Bus Wash
Fuel Island
Fueling of buses occurs at the fuel island which has roof cover but is not enclosed. Also in this covered area, the interior of buses is cleaned by mopping out. Any incidental spills and drips, wash water from regular washdowns of the area, wash water from bus interior cleaning, and other runoff collected in the floor drains flows to a sump between the fuel island and the bus wash. The facility estimated that only about 50 to 100 gallons per day, on average, is discharged from the fuel island, approximately 10% of the volume discharged from the bus wash.

Bus Wash
The exterior of buses is washed by an automated bus wash, which is only partially enclosed similar to a regular car wash. A floor trench is located in an area of the bus wash that does not have roof cover. All liquid from the bus wash, in addition to rainwater, is collected in floor trenches and is directed to a sump. A portion of the water

is reclaimed for use as rinse water in the bus wash. The remaining water flows to a sump between the fuel island and the bus wash.

Pretreatment System B
See Section 1.3

1.2 Facility Wastewater Sources

AC Transit generates wastewater from the steam bay, inspection pits, fuel island, bus wash, and paint booth. In particular, the wastewater sources are as follows:

- Bus wash water from cleaning undercarriage of buses in steam bay
- Wash water from mopping floor of buildings
- Spent bus coolant (non-ethylene-glycol solution)
- Incidental spills/drips into fuel island floor drains
- Wash water from mopping interior of buses
- Bus wash water from automated bus wash
- Rainwater/runoff in fuel island and bus wash areas
- Water from wet curtain air pollution control in paint booth – hauled offsite for hazardous waste disposal

The first three wastewater sources listed above are treated in pretreatment system A before being discharged to the city sewer system. The next four wastewater sources above are treated in pretreatment system B before being discharged to the city sewer system.

Other wastes
Solid and oil wastes that are handled offsite include sludge from the wastewater and used oil. Sludge is hauled offsite for hazardous waste disposal. Specifically, sources of sludge include:

- Sludge collected in the pretreatment systems A and B
- Sludge collected by vac-trailers from any of the separators or containers that handle wastewater flow.

Used oil is collected and sent offsite to be recycled. Sources of used oil include the following:

- Oil drained from buses during maintenance
- Oil that is skimmed off surface of wastewater from separators or containers that handle wastewater flow.

1.3 Facility Process Wastewater Treatment System

AC Transit provides two on-site batch treatment systems: one for the steam bay and inspection pits' wastewater and another for the fuel island and bus wash wastewater.

Pretreatment System A

This wastewater treatment system provided treatment of the wastewater from the steam bay and inspection pits. The wastewater treatment consisted of the following steps:

1. The wastewater from the "lift station" is conveyed to a series of settling tanks:
   a. First, the lift station pumps the wastewater to a settling tank (approximately 500 gallons).
   b. The wastewater then flows by gravity to the first of four smaller polyethylene totes, all in series. Wastewater fills up all four totes, as needed.
   c. The wastewater is pumped out of the second of these four totes to the Novachem treatment system a level above.
2. The Novachem treatment system consists of the following:
   - Vessel #1 (approximately 100 gallons) – a "metal grabber" which is a cationic flocculant/metal remover polymer is added to the wastewater just prior to this vessel.
   - Vessel #2 (approximately 25 gallons) – cationic polymer and sodium hydroxide is injected into the wastewater in this vessel.
   - Clarifier – Anionic polymer is added to the wastewater in the clarifier. Wastewater is pumped up through a fabric filter located near the top of the clarifier. The clear water flows out to a container below. The particles that are trapped below the filter accumulate at the bottom of the clarifier.
   - The clear water is metered and is discharged to the city sewers ("Discharge Point A"). (The sampling point is off the sanitary sewer pipe, at the level below, near the settling tank of step #1a above.)
   - The sludge is transferred from the bottom of the clarifier to individual felt filters which are placed on top of floor grating, allowing the water to drain off into the 500-gallon settling tank of step #1a above. The sludge, once dry, is transferred into a drum and hauled off as hazardous waste.

Pretreatment System B

This wastewater treatment system provided treatment of the wastewater from the fuel island and bus wash. The wastewater treatment consisted of the following steps:

1. The wastewater from the sump between the fuel island and the bus wash proceeds to a series of settling tanks:
   a. First, the wastewater flows to another sump within the pretreatment system fenced area. This is the first chamber of an oil water separator which is not used as part of the treatment system anymore because the facility determined that it had a slow leak (in one of the other chambers).
   b. The wastewater is pumped from the first chamber of the oil water separator to one of three plastic totes (approximately 250 gallons each) in series. The facility has indicated that these totes are temporary until more permanent settling tanks or basins can be obtained. Wastewater fills up all three totes, as needed.
2. The wastewater is then conveyed to a surge tank (approximately 800 gallons).
3. The wastewater is then treated in the Novachem system, which is very similar to the one in Pretreatment System A. The Novachem system of Pretreatment System B consists of the following:

- Vessel #1 (approximately 100 gallons) – a "metal grabber" is added to the wastewater just prior to this vessel. Cationic polymer and sodium hydroxide is injected into the wastewater in this vessel.
- Clarifier – Anionic polymer is added to the wastewater in the clarifier. Wastewater is pumped up through a fabric filter located near the top of the clarifier. The clear water flows out to a container below. The particles that are trapped below the filter accumulate at the bottom of the clarifier.
- The clear water is metered, sampled as required, and is discharged to the city sewers at a point just in front of the clarifier ("Discharge Point B").
- The sludge is transferred from the bottom of the clarifier to individual felt filters which are placed in a curbed area with a floor drain. This filtrate flows back to the first chamber of the oil water separator described in step #1a. The sludge, once dry, is transferred into a drum and hauled off as hazardous waste.

Additional Waste Removal

AC Transit cleans out each separator of the steam bay and each vessel and container of Pretreatment System A approximately once per month using a vac-trailer. Oil is also skimmed off the top of the liquid. Sludge collected by the vac-trailer is hauled off as hazardous waste. The oil is collected in buckets, transferred to a used oil tank, and then hauled off to be recycled. AC Transit meters the oil in each separator, vessel, and container every day, Monday through Friday.

1.4 Wastewater Discharge

Wastewater from this AC Transit facility will discharge to the City of Richmond Wastewater Treatment Plant. The treatment plant is owned by the City of Richmond and operated by a private company, Veolia. The City of Richmond Wastewater Treatment Plant is operated under an NDPES permit (No. CA0038539[*]) as part of the West County Agency, and all regulated sludge and effluent is combined with West County Wastewater District's sludge and effluent.

2.0 Compliance with Federal Categorical Standards

This facility is not subject to any federal categorical standards.

2.1 Compliance with Other Federal Pretreatment Requirements

The City of Richmond has designated this facility as a significant industrial user (SIU) on the basis that it has a reasonable potential for adversely affecting the publicly owned treatment works' (POTW's) operation. Therefore, this facility is subject to applicable pretreatment requirements in 40 CFR 403, including the reporting requirements contained in 40 CFR 403.12.

[*] Currently expired, has not been renewed as of the writing of this report.

2.2 Compliance with Local Limits

The facility has two discharge points, both of which are permitted and required to be sampled. The facility has had longstanding problems meeting the local limit for zinc at the discharge point whose wastewater originates from the steam bay and inspection pits ("Discharge Point A").

Sampling Data

The facility's permit requires that the facility perform composite sampling and analysis, at both sampling points, for copper, lead, zinc, mercury, and nickel on a monthly basis. Monthly self-monitoring is also required for the following: pH, biochemical oxygen demand (BOD), total suspended solids (TSS), and total petroleum hydrocarbons (TPH). The permit states that the third quarter of the year may be a split sample with the City of Richmond. In addition, follow-up split sampling is required when the City of Richmond has issued an NOV to the facility for a specific pollutant limit.

During review of 2006-2007 sampling data, EPA noted two exceedances of the local limit for zinc from Discharge Point A in 2006 and two exceedances in 2007. In addition, EPA noted an exceedance of the local limit for lead, based on a self-monitoring sample taken on May 10, 2007, also from Discharge Point A. EPA did not see any correspondence between AC Transit and the City of Richmond regarding this violation.

Recent Local Enforcement

The City of Richmond issued several NOVs to this facility earlier this year for exceedances of the local limit for zinc, the first of which occurred in November 2006. Earlier in 2006, the City issued a letter of warning to the facility in June for an exceedance of the same local limit.

History of Compliance Issues with Local Limits

Based on verbal communication with the City of Richmond, EPA learned that the facility violated local limits more frequently starting in 1988. The City of Richmond placed the facility on an administrative schedule of compliance in September 1996 for violations of local limits for total petroleum hydrocarbons, lead, and zinc. Through the schedule of compliance, the facility was required to comply with local limits in 90 days. After receiving an extension for an additional 90 days, AC Transit met the schedule of compliance by installing its current treatment system involving metals precipitation. Since then, the facility has improved its compliance rate, but it still violates its permit limits periodically at Discharge Point A, sometimes resulting in a significant noncompliance (SNC) status. According to the City of Richmond, this pattern has occurred since 1998. Based on review of the 2006-2007 data, EPA notes that, consistent with the pattern, the facility was able to stay in compliance for nine months before violating the zinc local limit, then only another six months before violating the zinc local limit again, this time violating the limit two months in a row.

Future Compliance

The facility should look into ways of improving its treatment systems for more effective removal of zinc as well as metals in general. Some suggestions are included below.

The EPA inspectors recommend that the facility target the pH setpoint to 9.2 in the pretreatment systems for more effective removal of zinc. Zinc is amphoteric. Amphoteric metals return to solution at a certain acidic pH range and basic pH range. EPA has inspected many facilities which have found, by experience, that a pH setpoint of 9.2 has been most effective for zinc removal.

The facility could improve its pretreatment systems by replacing use of the fabric filter in the Novachem system with a more efficient method of removing particulates (metals), such as simply using gravity clarification and decanting the clear water out of the clarifier. In addition, ultrafiltration could be added to the end of the pretreatment system for additional particulate and oily emulsion removal.

The facility could improve oil removal in the steam bay by performing oil emulsion breaking early in the treatment process, such as at the steam bay separators. Oil emulsion breaking could be accomplished in a number of different ways, including addition of heat, acid, or other chemical.

3.0 Summary of Findings

1. This AC Transit facility is not subject to any federal categorical standards.
2. The City of Richmond has designated this facility as a significant industrial user (SIU). Therefore, the facility is subject to applicable pretreatment requirements in 40 CFR 403.
3. This facility must comply with local limits. For many years, this facility has been unable to achieve consistent compliance with the local limit for zinc at Discharge Point A. In addition, the facility exceeded the local limit for lead in May 2007.
4. The City of Richmond issued several notices of violation to this facility earlier this year for exceedances of the local limit for zinc, the first of which occurred in November 2006.
5. The facility should target its pH setpoint to 9.2 in its pretreatment systems for more effective removal of zinc.
6. The facility should also look into other ways of improving its pretreatment systems, such as adding ultrafiltration to the end of each pretreatment system for additional particulate and oily emulsion removal.
7. The facility makes efficient use of water at the bus wash by reclaiming a large portion of the used wash water to be reused as rinse water.
8. The facility has good control of entry of its wastewaters to the pretreatment systems by having only a limited number of input points (e.g., separators at steam bay, lift pump at inspection pits, sump between fuel island and bus wash).
9. The facility has adequate capacity in its pretreatment systems.