

**APPENDIX D – WATS NPDES PERMIT COMPLIANCE SUMMARY**

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**TABLE 5**  
**WEST-SIDE AQUIFERS TREATMENT SYSTEM**  
**SUMMARY OF NPDES PERMIT COMPLIANCE**  
**(2003–2008)**

Date	Exceedance or Potential Exceedance	Corrective Actions
May 20, 2003	<p>WATS underwent system modifications in the first quarter of 2003. Operation of the air stripper was discontinued, and vapor GAC was added to passively treat venting system components. In accordance with the NPDES Self-Monitoring Program, the modified system underwent 1st day and 5th day startup sampling to ensure compliance with discharge limits. Based on analytical data from the initial 1st day startup sample collected on May 12, 2003, the treated effluent from the modified system met the NPDES discharge limits. A certification report summarizing the initial 1st day results was submitted to the RWQCB on May 13, 2003.</p> <p>On May 22, 2003, the analytical results from the May 20, 2003, initial 5th day startup sampling event were received. The results indicated a potential exceedance of several VOCs and TPH. However, analytical results were extremely atypical of WATS effluent. The recently reconfigured WATS consists of an AOP and aqueous-phase GAC units in series. Typical effluent from the AOP, and hence influent to the GAC units, ranges from 13 to 26 µg/L for trichloroethene for 2003. The May 20, 2003, effluent results were significantly higher than typical AOP effluent and influent GAC results, without considering the subsequent removal of VOCs and TPH by the GAC units. In addition, sample results for TPH exhibited an atypical chromatographic pattern, which does not resemble the standard. Moreover, the initial 1st day NPDES startup effluent sample results were below laboratory reporting limits for all VOCs and TPH. Ms. Adriana Constantinescu of the California Regional Water Quality Control Board (RWQCB) was verbally notified of the potential exceedance at WATS and told that WATS was shut down on May 22, 2003, following collection of the 5th day confirmation samples.</p>	<p>In accordance with the NPDES permit, a confirmation sample was collected from the WATS effluent on May 22, 2003, and analyzed for VOCs and TPH. Following sample collection, WATS was shut down as a safety precaution, and all effluent discharges ceased. On May 28, 2003, the confirmatory results were received. TPH and all VOCs except VC were below laboratory reporting limits in the confirmation effluent samples. However, in the AOP effluent confirmation sample, VC was also below the reporting limit of 0.5 µg/L. Ms. Constantinescu (RWQCB) was notified of the analytical results on May 29, 2003, both verbally and in writing.</p> <p>Based on the aforementioned initial 5th day startup sampling and the potential for VOC breakthrough in the lead GAC units, the carbon in the GAC units was replaced and the startup monitoring restarted. All effluent sample results for VOCs and TPH in subsequent startup monitoring were reported as not detected. Therefore, WATS resumed operation on June 13, 2003, and treated effluent was discharged to the storm drain.</p>

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August 7, 2003	A potential exceedance for TPH-extractable (TPH-e) as diesel in the system effluent was noted in the August 2003 sampling event. On August 21, 2003, the analytical results from the August 7, 2003, NPDES sampling event for WATS were received. The results indicated a potential exceedance of TPH-e as diesel at 120 µg/L in the WATS effluent. The lab qualified these sample results (Y qualifier) as a chromatographic pattern that does not resemble the standard. In addition, in the WATS influent sample collected on the same day, TPH-e as diesel was not detected at a reporting limit of 50 µg/L. On August 21, 2003, Ms. Adriana Constantinescu of the RWQCB was verbally notified of the potential exceedance of TPH-e as diesel at WATS.	In accordance with the NPDES permit, a confirmation sample was collected from the WATS effluent on August 21, 2003, and analyzed for TPH-e as diesel. In addition, two mid-point liquid-phase GAC samples, immediately upstream of the effluent point, were collected and analyzed. The confirmation sample results for TPH-e as diesel in the effluent and mid-point GAC samples were below the reporting limit of 50 µg/L. Ms. Constantinescu was notified of the analytical results on August 25, 2003. No further action was required.
April 2005	During the April 2005 sampling event, TPH-e as diesel was potentially detected in the effluent stream and Ms. Adriana Constantinescu of the RWQCB was notified. This analytical result was considered a false positive as there was no diesel detected in the system influent. In addition, the laboratory qualified the effluent diesel analytical result as exhibiting a pattern that does not resemble the standard and exhibiting an unknown single peak or peaks.	A confirmation sample was collected from the effluent stream within 24 hours and analyzed for total extractable petroleum hydrocarbons. The effluent sample results were reported as not detected. Ms. Constantinescu was notified on April 22, 2005, that the effluent analytical results were reported as not detected and there was no exceedance.
September 2005	During the September 2005 sampling event, three NPDES trigger compounds, bromodichloromethane, dibromochloromethane, and bromoform, were potentially detected in the effluent stream. These compounds are not constituents of concern at former Naval Air Station (NAS) Moffett Field. In addition, these analytical results were considered false positives as these compounds were not detected in the system influent or at any other point of the treatment system. Although these detections were considered anomalies, the NPDES trigger levels were exceeded for all three compounds. Therefore, in accordance with the NPDES permit, both the influent and effluent streams of the system must be sampled three times during the next 3 months. These compounds were monitored during the regularly scheduled monthly sampling events to ensure the potential detections were anomalies.	In accordance with the NPDES permit, both the influent and effluent streams of the system were tested three times during the 3 months of the fourth quarter of 2005. All three compounds were reported as not detected in the October, November, and December 2005 sampling events. No further action was necessary.

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April 2006	During the April 2006 sampling event, TPH-e as diesel was detected in the effluent stream, but was considered to be a false positive as there was no TPH-e as diesel detected in the system influent. Ms. Adriana Constantinescu of the RWQCB was notified of the potential exceedance.	To confirm the suspect detection, the effluent stream was resampled within 24 hours for TPH-e. The effluent sample results reported TPH-e as not detected, thus confirming the false positive. Ms. Constantinescu was notified on May 8, 2006, that the confirmation effluent analytical results were reported as not detected and there was no exceedance. There were no detections of TPH or VOCs during the May and June 2006 sampling events.
December 18, 2007	Triennial testing for Title 22 metals in the system effluent was performed this quarter. Samples were collected December 18, 2007, and analytical testing indicated that one NPDES trigger compound, zinc, was detected in the effluent stream. This is not a constituent of concern at the former NAS Moffett Field but is listed as a concentration-based trigger compound in Table E.6 of the NPDES Permit. Triggers are not effluent limitations; rather they are levels at which additional investigation is warranted to determine whether a numeric limit for a particular constituent will be necessary. The trigger concentration for zinc is 35 µg/L, and the effluent sample was reported at 58 µg/L.	<p>In accordance with Provision E.6 of the NPDES Permit, both the influent and effluent streams of WATS were sampled and analyzed by EPA Method 6010B for zinc three times during the next 3 months. Additionally, the receiving water was sampled three times during the first quarter of 2008 and analyzed for salinity and hardness by Standard Methods 2520B and 2340B, respectively, in accordance with Table A of the NPDES Permit. The receiving water was sampled upstream and downstream of the point of discharge.</p> <p>Zinc concentrations were above the reporting limit in the WATS effluent in January 2008 and February 2008. Zinc was reported below the trigger concentration in January 2008 and above the trigger concentration in February 2008. Zinc was below the reporting limit in the March 2008 sampling event. Additional samples were collected in March 2008 along the treatment train to delineate zinc concentrations within the system.</p> <p>Zinc was not detected in the influent and effluent samples collected in March 2008. The zinc detections were inconsistent along the treatment system train. The results are inconclusive and do not contribute to an understanding of zinc within the system process.</p> <p>Because one of the three additional zinc samples collected in the first quarter of 2008 exceeded the zinc trigger concentration, the tasks listed under Provision E.8 were completed and presented in the First Quarter 2008 NPDES Report for WATS.</p> <p>Per Provision E.8, the median and maximum concentration values for zinc were calculated using results from the three most recent samples in</p>

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		<p>addition to all samples collected and analyzed for that constituent in the previous 12-month period. The mass load discharged in the previous 12-month period for zinc was estimated using the median and mean zinc concentrations. Lastly, the results were reported to the Executive Officer in the next Self-Monitoring Report, and WATS was returned to the schedule of sampling and analysis in the Self-Monitoring Program. The results were presented in the First Quarter 2008 NPDES Report for WATS.</p> <p>In accordance with Provision E.8, the regular sampling schedule was resumed and further sampling for zinc will consist of triennial metals sampling. Per Provision E.10, if the zinc trigger is exceeded again within 60 months of April 30, 2008, the Navy may discuss with the Executive Officer the option of waiving additional evaluation.</p> <p>In addition, the receiving water was sampled and analyzed for salinity and hardness during the first quarter of 2008 because the zinc trigger was exceeded in December 2007. The receiving water was sampled upstream and downstream of the point of discharge. The analytical results are summarized in First Quarter 2008 NPDES Report for WATS.</p>

**Abbreviations and Acronyms:**

µg/L – micrograms per liter  
 AOP – advanced oxidation process  
 EPA – Environmental Protection Agency  
 GAC – granular activated carbon  
 NAS – Naval Air Station  
 NPDES – National Pollutant Discharge Elimination System  
 RWQCB – Regional Water Quality Control Board  
 TPH – total petroleum hydrocarbons  
 TPH-e – total extractable petroleum hydrocarbons  
 VOC – volatile organic compound  
 WATS – West-Side Aquifers Treatment System  
 Y – qualifier; sample exhibits chromatographic pattern that does not resemble the standard