



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 9  
75 Hawthorne Street  
San Francisco, California 94105**

Sent via Electronic Mail Only

July 13, 2017

Lawrence Lansdale  
Environmental Director  
Department of the Navy  
BRAC Program Management Office  
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San Diego, CA 92147  
[Lawrence.Lansdale@navy.mil](mailto:Lawrence.Lansdale@navy.mil)

RE: Failure to Maintain and Operate Site 28 West-side Aquifers Groundwater Remedy  
NAS Moffett Field Superfund Site, Moffett Field, California

Dear Mr. Lansdale:

This letter provides notice that the U.S. Environmental Protection Agency (EPA) and the California Environmental Protection Agency San Francisco Bay Regional Water Quality Control Board (Regional Water Board) are evaluating the assessment of stipulated penalties against the U.S. Department of the Navy (Navy) for violations of the 1990 NAS Moffett Field Superfund Site (Moffett Field) Federal Facility Agreement (FFA), as amended in 1993, for failure to implement the Site 28 West-side Aquifers Groundwater Remedy. The Navy's failure to operate, maintain, monitor and report on the Site 28 groundwater remedy violates the FFA including numerous specific provisions of the Site 28 West-side Aquifers Treatment System (WATS) Operation and Maintenance (O&M) Plan. Prior to assessing penalties, we invite you to meet with EPA and the Regional Water Board to discuss the facts and the underlying violations.

The Navy's failure to maintain the Site 28 WATS system for an extended period undermined the integrity of the remedy and left the system in a condition that has required many months of restoration to return it to operating and functioning conditions. Without system operation, contaminated groundwater was not contained or remediated as required by the 1989 Record of Decision (ROD) for the Middlefield-Ellis-Whisman (MEW) Superfund Area. Allowing groundwater contamination to migrate at Site 28 is considered an ongoing discharge to a potential drinking water source. In addition, shallow A/A1 groundwater contamination was allowed to migrate beneath overlying buildings, potentially causing exposure through the subsurface vapor intrusion pathway. Lack of system monitoring and Navy oversight and the Navy's failure to provide notification to EPA and the Regional Water Board of O&M problems and system shutdowns further undermined operations of the Site 28 WATS groundwater remedy. Ultimately, the Navy's failure to operate the Site 28 WATS groundwater remedy created a potential risk to public health and violated the Moffett Field FFA, warranting stipulated penalties under Section XXVI of the FFA.

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### **Background:**

Paragraph 7.3 of the Moffett Field FFA obligates the Navy to implement and conduct O&M to maintain effectiveness of remedial actions at Moffett Field. The Site 28 WATS Area is the Navy's designated area of responsibility within the MEW Superfund Study Area. The shallow groundwater contamination within Site 28 WATS is primarily trichloroethene (TCE) and tetrachloroethene (PCE) and is a potential source of vapor intrusion to overlying buildings. This groundwater is required to be addressed under the 1989 MEW ROD. The Site 28 WATS remedy includes operation of a groundwater treatment system and nine source control extraction wells, and the Navy is obligated to operate the system as set forth in the Site 28 WATS O&M Plan. Site 28 WATS has ostensibly been operating since its construction in 1998.

NASA, as current owner of Moffett Field, had agreed to take responsibility for Site 28 WATS O&M on October 1, 2016. Following an October 17, 2016 in-person inspection of the facility by NASA's contractor which found the treatment system to be fully shut down, NASA and Navy informed EPA and the Regional Water Board on October 28, 2016, that the groundwater remedy for Site 28 was not operational, and it was unknown for how long it had not been functioning. After significant repair and maintenance work was conducted, the treatment system and nine source control extract wells were operational on November 28, 2016 with total system flow of approximately 46-47 gallons per minute (gpm).<sup>1</sup>

On multiple occasions, EPA, the Regional Water Board, and NASA have requested information from the Navy regarding operation of Site 28 prior to NASA taking over Site 28 WATS O&M on October 1, 2016. To date, there has been minimal information provided by the Navy. Much of the information that EPA and the Regional Water Board have been able to gather about system operation has been what can be gleaned from NPDES submittals and reports of NASA's activities necessary to get the system operational and functioning properly (*see* the attached May 12, 2017 Letter from NASA regarding Site 28 WATS System Operation Assessment [NASA Assessment]).

### **Violations:**

**Failure to operate Site 28 groundwater remedy:** At the most basic level, the Navy failed to operate the Site 28 remedy for several months. On October 17, 2016, NASA confirmed that the Site 28 WATS system was not operating, and there has been no evidence (data or operational notes) found that the remedy was operating any time after June 24, 2016.<sup>2</sup> Due to the lack of maintenance over an extended period, the nine extraction wells and treatment system

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<sup>1</sup> Although the Site 28 WATS system was initially restarted on November 11, 2016, three wells were still non-functional and the total system flow was significantly lower than designed - only 28 gpm.

<sup>2</sup> Importantly, the system could very well not have been operational prior to June 24, 2016; there is no evidence that the system was or was not operating.

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were not operational until November 28, 2016.<sup>3</sup> NASA reports that it took until May 2017, and expenditures of \$500,000, to bring the system back to operational order.<sup>4</sup> Violation of the FFA paragraph 7.3 for failure to operate the system runs at a minimum back to June 25, 2016, and potentially continued at least until the system could be initially restarted on November 11, 2016 when NASA resumed operation of only part of the system as several wells were still shut off and the total system flow was only 28 gpm.

**Failure to Maintain Site 28 WATS system:** NASA's May 2017 Site 28 Assessment, attached, details the extensive work required to bring the Site 28 WATS system back to functioning order. There are no reports of system maintenance after June 24, 2016, and, in light of the condition in which the system was found on October 17, 2016, it appears unlikely that maintenance on a number of system components had been conducted for a significant time before that.<sup>5</sup> Maintenance was required on all aspects of the system, including well pumps, pump motors, electrical supplies, and sump pumps. Additionally, system components required for accurate monitoring of operations, such as the readout screen, system recirculation valves, pump level controls, and flowmeters, were either non-functional or at settings that did not allow for accurate readings. The Navy's failure to maintain the Site 28 WATS system began at the very least on June 25, 2016, and potentially continued until NASA repaired system components, which was ongoing through May 2017.

**Failure to Monitor and Report on Site 28 WATS Operations:** Operational failures of Site 28 WATS were exacerbated by the lack of system monitoring. The Site 28 WATS O&M Plan requires the system to be monitored on a routine basis, including daily and weekly monitoring and reporting, precisely to ensure that any problems would be identified in a timely manner. However, there is no evidence of system monitoring since at least June 25, 2016, until potentially October 17, 2016 or later, and no reporting of the extensive system failures during that time.

As with many groundwater remedies, the Site 28 WATS O&M Plan requires daily monitoring be conducted through a remote computer monitoring system. Remote monitoring allows operators to manage the system and identify operational abnormalities without having to

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<sup>3</sup> Significant components of the remedy, such as the Hangar 1 sump pump and the EV5 pump, were not operational until January 2017. Other O&M issues have continued with well shutdowns occurring through May 2017.

<sup>4</sup> NASA Assessment, p. 2.

<sup>5</sup> According to the NASA Assessment, the system granular activated carbon (GAC) was found overdue for a changeout, with the last documented GAC changeout occurring in approximately May 2015. The Site 28 WATS O&M Manual requires changeout at least quarterly, which would indicate that NASA's GAC changeout in November 2016 was more than a year - approximately 56 weeks - overdue.

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be physically at the facility each day.<sup>6</sup> NASA's inspection of the facility showed that not only was there no daily monitoring, but that there was no functioning remote monitoring system, no data collection, and no communication infrastructure to conduct that remote monitoring. Complete failure to establish a remote monitoring system such that daily system monitoring is conducted in accordance with the O&M Plan constitutes violation of the O&M Plan sections 2.1.2, 2.1.3, and 3.4.1 that potentially lasted many years, not weeks.

The Navy claims to have replaced daily remote monitoring with "physical on-site monitoring" several days a week. Although periodic on-site monitoring appears to have been conducted, according to the Navy no daily monitoring reports were prepared to document this monitoring. It is unclear for how long the lack of daily monitoring has occurred, but without any reports, it can be assumed to be at least from June 24, 2016 and potentially continuing until NASA began conducting daily inspections in mid-October 2016.

Separate from the daily remote monitoring, the O&M Plan requires Inspection Records documenting weekly visual inspections, with reports sent to project managers, NPDES system reporting, and logged at the system trailer. The Navy's 3<sup>rd</sup> quarter 2016 NPDES report states it has been unable to locate any operations data for the 3<sup>rd</sup> quarter of 2016. NASA also has been unable to locate any data from that time period.

The failure to monitor and report is a serious violation, allowing an ongoing discharge to a potential drinking water source and presenting a potential risk to public health.

**Failure to Notify the Regulatory Oversight Agencies:** To provide appropriate oversight of system operation, the Site 28 WATS O&M Plan requires the Navy to notify EPA and the Regional Water Board when the Site 28 WATS, or any part thereof, is down for more than 72 hours. Specifically, where any well is not operating for over 72 hours, EPA must be notified within 24 hours, followed by monthly updates as to progress until the well is again operating. For shutdowns longer than 5 days, verbal notice must be provided within 5 days and written notice within 15 days. EPA and the Regional Water Board received no notification that any part of the Site 28 WATS system was non-operational until NASA and Navy notified the Agencies on October 28, 2016. The Navy should have provided notification that certain wells were not operating at least as far back as June 25, 2016.

There are numerous other violations of the FFA and Site 28 O&M Plan that have been identified by EPA and the Regional Water Board.<sup>7</sup> However, we simply highlighted and identified a few of the core violations with the most readily available evidentiary support. The

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<sup>6</sup> Using remote monitoring, any conditions reported that are outside prescribed operating ranges are to be diagnosed and corrected.

<sup>7</sup> In addition to the complete reporting failures, there are other operational and reporting problems that are of concern. For instance, it appears that treated water may have been re-routed back into the treatment system to be counted as remediation to artificially bolster total system flow rates.

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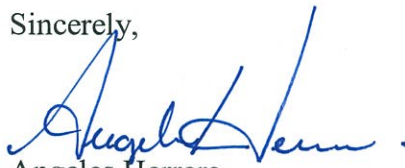
Agencies believe that it will be most beneficial to resolve these issues quickly so that we can focus on ensuring that operation, maintenance, monitoring, and reporting on this and other Moffett Field sites are continued appropriately.

**Penalties:**

The Navy Moffett FFA, Paragraph 26.1, provides for stipulated penalties where the Navy “fails to comply with a term or condition of this Agreement which relates to an operable unit or final remedial action...” Stipulated penalties aggregate at up to \$5,000 for each violation for any part of a week and up to \$10,000 for each week thereafter. Four general categories of violations here are (1) failure to operate the Site 28 WATS groundwater remedy, (2) failure to properly maintain the Site 28 WATS system, (3) failure to properly monitor and report on Site 28 WATS operations, and (4) failure to notify the EPA and the Regional Water Board of Site 28 WATS groundwater remedy shut downs. Each of these violations lasted many months and had significant impacts.

EPA and the Regional Water Board are available to meet the week of July 24th to discuss any facts that the Navy would like to provide for consideration. Should you wish to meet, please contact me at (415) 972-3144, or have your staff contact Alana Lee at (415) 972-3141 to set up a meeting. Any legal questions should be directed to Bethany Dreyfus at (415) 972-3886.

Sincerely,



Angeles Herrera  
Assistant Director, Superfund Division

Attachment: NASA Assessment

cc: Terry Seward, Regional Water Board  
Donald Chuck, NASA