

National Aeronautics and Space Administration



Ames Research Center
Moffett Field, California 94035

December 10, 2021

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
Department of Parks & Recreation
1725 23rd Street, Suite 100
Sacramento, CA 95816

Attn: Mr. Mark Beason

Subject: Section 106 Consultation for Moffett Field Site 28 Vapor Intrusion Project at Ames Research Center, Moffett Field, California

Dear Ms. Polanco:

The National Aeronautics and Space Administration (NASA) requests initiation of consultation under Section 106 of the National Historic Preservation Act (NHPA) for the Moffett Field Site 28 Vapor Intrusion Project (project or undertaking) located at Ames Research Center (ARC) at Moffett Field, California. Naval Facilities Engineering Command – Southwest (NAVFAC) proposes vapor intrusion remediation at Buildings 3, 10, 45, 126, N239, and N239A. As the lead Federal agency, NASA ARC has determined that this project constitutes an undertaking under Section 106 of the National Historic Preservation Act of 1966 (54 United States Code §306108), as amended.

NAVFAC retained Kleinfelder to conduct a technical study for this project. The study was conducted by cultural resources professionals who meet the Secretary of the Interior’s Professional Qualifications Standards (48 Federal Register 44738). The technical memorandum prepared by Kleinfelder, dated September 30, 2021, which includes a description of the undertaking, the Area of Potential Effects (APE), identification efforts, and the affected historic properties, and an assessment of potential effects resulting from the undertaking, is attached for your review. For further details on the following summary, see the enclosed memorandum.

Description of the Undertaking

Vapor intrusion (VI) occurs when aerated chemical compounds enter buildings through preferential pathways, such as floor drains and utility trenches or tunnels. Most of the VI mitigation is planned for interior spaces and minimal changes are planned for exterior elements (see Attachment D of the enclosed memorandum for illustrations of planned exterior work at each building as described below). No excavation is anticipated to go deeper than 6 inches below any slab.

Building 3

NAVFAC proposes to seal preferential pathways of VI in the slab and subfloor from air flow, install a sub-membrane depressurization (SMD) system within the crawlspace and install a sub-slab depressurization (SSD) below the slab foundation. Part of the VI mitigation will be accomplished by sealing floor drains in kitchen and bathroom areas. The SMD system will be comprised of vapor barriers with a blower to create negative air pressure below the membrane to prevent VI into the crawl space. Construction efforts associated with the SMD consist of debris removal from within the crawl space to accommodate the vapor barrier and concrete spread footers. Suction vent pipes will be installed in the crawl space and piping will be installed along exterior walls in the same locations as modern elements before transitioning to vertical risers connecting to one of six blowers. Vent piping will be installed at the blowers and away from HVAC inlets and windows to prevent VI back into the building. The SSD will consist of drilling 6-inch holes in the slab and excavating 1 cubic foot near the perimeter footings. Three-inch holes will be cored in the exterior concrete wall and 3-inch schedule 40 polyvinyl chloride (PVC) exhaust piping will extend along the interior of the exterior wall and attached to an exterior blower on the roof. Additional 3-inch PVC piping will also extend above the roofline away from HVAC inlets. Exhaust guards will be installed at all termini.

Building 10

NAVFAC proposes to remove temporary VI mitigation measures installed in 2012 and 2013. These measures included two temporary cut off walls, two blowers, and associated piping. The permanent VI mitigation includes asbestos abatement of 70 linear feet (LF) of inactive steam lines, VI coating along the finished tunnel and utility trench floors, drain removal in Room 103, installation of an SSD system, the placement of fill in a utility trench, large crack sealing, and construction of a concrete cut off wall. The SSD system in Building 10 will consist of 4-inch diameter PVC piping installed horizontally within a bed of pea gravel in the utility trench and tunnels. Pea gravel creates a preferential pathway for VI and serves to intercept the VI before entering the building. Four blowers will be used to move vapors from the trenches/tunnels to interior mounted riser pipes and discharged above the roof line and away from HVAC equipment and other means of reentering the building. Prior to the installation of the pea gravel, 3/4-inch vent holes will be drilled into the side walls of the tunnel and in the shallow subfloor trench to help ventilate sub-slab vapors. The holes will be adjacent to the pea gravel bed and below the building slab. A utility bank will be installed between the top of the trench and the SSD system to maintain power to the NASA Research Park (NRP). One temporary cut off wall will be replaced by a solid concrete/wall. It will be cast in place near the junction of the tunnel between Building 10 and Hangar 1, east of the connection of the tunnel with the utility trench (which runs perpendicular to the tunnel). Form work will be constructed in place using hand tools. Structural concrete with 3000 pounds per square inch (psi) will be cast. Steel plates, 6 inches to 11.5 inches in diameter and 1/4

inch thick, will be installed at the west end of the utility trench and secured with 2.5-inch stainless steel anchors. A penetration point for the NRP utility bank may be cut into the wall and sealed to prevent VI around the bank.

Building 45

NAVFAC proposes to seal preferential pathways by crack sealing and installing a SSD system. Crack sealing will occur at locations where two different concrete pours meet and at visible cracks of the slab, expansion joints, and penetrations. The SSD system at Building 45 is similar to the SSD system proposed at Building 3 in terms of the core size, excavation amounts, and size of PVC. The PVC risers will be installed in the interior and extend above the roof line and away from HVAC units.

Building 126

NAVFAC proposes to seal preferential pathways by crack sealing along concrete seam lines and cracks and installing a SSD system. The SSD system will be similar to the SSD systems described for Building 3 and Building 45. Interior riser pipes and a 6 square-foot (SF) blower will be installed on the interior of the building. The SSD will be exhausted through the roof via 3-inch PVC pipe, 6- inches tall.

Building N239

NAVFAC proposes to seal preferential pathways by making HVAC modifications and plugging sealing pipe and conduit penetrations in the floor of Room 52. HVAC modifications include replacement of an interior passive door vent to a louvered door vent.

Building N239A

NAVFAC proposes to seal preferential pathways by making HVAC modifications and plugging the sealing pipe, conduit penetrations, and floor drains. A 1 SF louvered vent will be installed near the bottom of the exterior wall between the fifth and eighth pier on the western elevation.

Area of Potential Effects

Due to the visual scale of the exterior work included in the project, the APE is limited to the building footprints of Buildings 3, 10, 45, 126, N239, and N239A (see enclosed memorandum, Attachment A, Figure 2). The vertical APE extends 6 inches below the surface of the buildings' foundations where limited ground disturbance is expected.

Identification Efforts

On May 4, 2021, Kleinfelder conducted a records search at the Northwest Information Center (NWIC). The NWIC identified two resources in the APE: the NAS Sunnyvale Historic District (including Buildings 3, 10, 45, and 126) and Building 126. No previously recorded archaeological resources were identified in the APE.

On May 20, 2021, Kleinfelder contacted the Native American Heritage Commission (NAHC) to request a Sacred Land File (SLF) search. The NAHC responded on June 7, 2021, that the SLF search was negative. The NAHC also sent a list of 11 Native American representatives geographically associated with the project area. These representatives were not contacted for additional information.

On May 20, 2021, Kleinfelder also contacted the Santa Clara County Historical and Genealogical Society and the Moffett Field Historical Society Museum with a request for information regarding significant cultural resources located within or near to the project site. On May 27, 2021, the Moffett Field Historical Society Museum responded via email indicating that they had no information to provide regarding significant cultural resources within the vicinity of the project site. To date, no response has been received from the Santa Clara County Historical and Genealogical Society.

In addition, Kleinfelder reviewed several previously conducted cultural resources investigations on file at ARC that cover the APE. For a full description of the identification efforts, refer to the enclosed memorandum, Section 4.

Affected Historic Properties

A comprehensive investigation of previous archaeological studies at ARC was completed in 2017 (*NASA Ames Research Center Archaeological Resources Study* prepared by AECOM, dated February 2017). This investigation involved a desktop survey of archival resources and a geoarchaeological assessment of the entire ARC site and included an assessment of archaeological sensitivity and the potential for buried archaeological resources. The study concluded that there is moderate to low potential for more deeply buried prehistoric archaeological resources across ARC. The APE is entirely disturbed, and further archaeological survey or testing related to the undertaking is not necessary.

The APE for the undertaking overlaps portions of the U.S. Naval Air Station Sunnyvale, California (NAS Sunnyvale) Historic District (NRIS #94000045); therefore, the entire district was considered as a historic property within the APE. However, due to the scale and location of the project, only the buildings in the APE, including Buildings 3, 10, 45, 126, were specifically assessed for potential effects related to the district. Buildings 3, 45, and 126 were listed in the NRHP as non-contributing to the NAS Sunnyvale Historic District. However, based on an expansion of the statement of significance for the district and recent Section 106 consultation for a separate undertaking (NASA_2021_0419_001), these are considered potentially eligible as contributors to the district for the purposes of this review.

The APE also includes Buildings N239 and N239A, which have not been formally evaluated for NRHP eligibility. The context for these buildings has yet to be fully developed, and NASA considers Buildings N239 and N239A eligible for the purposes of this undertaking, since the project’s potential for adverse effects on the buildings is minimal.

Name	Date	Eligibility Status
Building 3	1934	Potentially contributing; treated as eligible for this undertaking
Building 10	1934	NRHP Listed – contributing
Building 45	1944	Potentially contributing; treated as eligible for this undertaking
Building 126	1949	Potentially contributing; treated as eligible for this undertaking
Building N239	1965	Undetermined; treated as eligible for this undertaking
Building N239A	1966	Undetermined; treated as eligible for this undertaking

Effects Assessment

For archaeological resources, minor ground disturbance will be necessary to seal preferential pathways of VI in slabs and subfloors. A review of the 2017 investigation indicates that the proposed work is not located in an area of prehistoric or historic archaeological sensitivity and the work will be limited to previously disturbed areas with low potential for deeply buried prehistoric sites. Therefore, it is not anticipated that archaeological resources will be encountered as a result of this undertaking. No potential effects on archaeological resources are anticipated.

For architectural resources, the project will minimally alter Buildings 3, 10, 45, 126, N239, and N239A. The majority of the project work will be limited to interior and utilitarian/mechanical areas of the buildings, which do not contribute to the significance of the NAS Sunnyvale Historic District or the potential significance of Buildings N239 and N239A. Exterior work will be limited to installation of PVC piping and louvered vents for ventilation in discreet areas. The project will not alter, directly or indirectly, any of the characteristics of the historic properties in the APE that may qualify them for inclusion in the NRHP in a manner that would diminish the integrity of the properties' location, design, setting, materials, workmanship, feeling, or association. The project will not result in any adverse effects, including cumulative, to the NAS Sunnyvale Historic District (Buildings 3, 10, 45, and 126) or Buildings N239 and N239A.

Finding of Effect

Based on the assessment conducted by qualified cultural resources professionals, NASA ARC has made a finding of No Adverse Effect for this undertaking.

Consultation Efforts

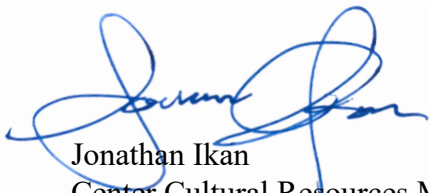
No Federally Recognized Tribes are associated with the geographical boundaries of NASA ARC or this undertaking. In the event that an inadvertent discovery of prehistoric archaeological resources or human remains of Native American origin are encountered, NASA ARC will consult with non-federally recognized representatives identified by the NAHC.

NASA ARC has not identified additional consulting parties for this Section 106 review but is making these findings available to the public via the NASA ARC Historic Preservation Office website (<https://historicproperties.arc.nasa.gov/section106.html>).

The purpose of this letter is to request the initiation of Section 106 consultation and the State Historic Preservation Officer's (SHPO's) concurrence on the APE, NASA's determinations of eligibility pursuant 36 Code of Federal Regulations (C.F.R.) 800.4(c)(2), and NASA's finding of No Adverse Effect for this undertaking pursuant to 36 C.F.R. 800.5(b). NASA ARC requests the SHPO's response within 30 days of receipt of this letter, as specified in 36 C.F.R. 800.5(c).

Please contact me at jonathan.d.ikan@nasa.gov or at (650) 604-6859 with your comments or questions.

Sincerely,



Jonathan Ikan
Center Cultural Resources Manager



Ames Research Center, MS 213-8
Moffett Field, California 94035

cc:

HQ/EMD/Ms. Klein, Ph.D., RPA

Enclosure

Memorandum, prepared by Kleinfelder, dated September 30, 2021.