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DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
ENVIRONMENTAL DIVISION
- 1220 PACIFIC HIGHWAY, RM 18
SAN DIEGO, CALIFORNIA 92132-5181

M60050.000973
MCAS EL TORO
SSIC # 5090.3

5090
Ser 1831.AP/944
August 21, 1995

Mr. John T. Zellmer
Associate Professor
Geological Engineering
Department of Civil, Agricultural, and
Geological Engineering
Box 30001/Dept. 3CE
Las Cruces, NM 88003-8001

Dear Mr. Zellmer:

I have received your July 17, 1995, letter requesting approval to publish the results of the aerial photograph investigation conducted for Marine Corps Air Station (MCAS), El Toro under contract No. N68711-91-D-4658. As the Remedial Project Manager responsible for the aerial photograph investigation report, you have my approval to publish the subject paper in *Environmental and Engineering Geoscience*.

Even though I see no reason to eliminate references to MCAS El Toro from the text or figures, I do ask that you remain focused on the pros and cons of the analytical techniques of aerial photograph investigations.

The aerial photograph investigation has been an integral part of the overall record of El Toro's development over the years. Since the aerial investigation is only one aspect of analysis, we followed up with additional comprehensive records examination prior to any field sampling, as recommended in the report. Of the 574 anomalies/features identified in the report, less than ten percent were slated for physical investigation. I have enclosed the CH2M HILL (Daryl Hernandez) memorandum dated July 28, 1994, that further examined the aerial photograph investigation report. I ask that your paper not conflict with the conclusions in this memorandum.

If you have any questions regarding this letter of approval, please contact the undersigned at (619) 532-2635.

Sincerely,

A handwritten signature in black ink that reads "F. Andrew Piszkin".

~~File~~ F. ANDREW PISZKIN
Remedial Project Manager
By direction of
the Commanding Officer

5090
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Encl:
(1) CH2M HILL memo dated July 28, 1994

Copy to:
Mr. Joseph Joyce
BRAC Environmental Coordinator
Marine Corps Air Station El Toro
P.O. Box 95001
Santa Ana, CA 92709-5001

MEMORANDUM

CH2M HILL

TO: File

COPIES: Mike Arends
Tim Smith

FROM: Daryl Hernandez

DATE: July 28, 1994

SUBJECT: Review of SAIC Aerial Photograph Report

PROJECT: SCE70257.PM.06

The purpose of this memorandum is to summarize information presented in the Science Applications International Corporation (SAIC) *Aerial Photograph Assessment Report for MCAS El Toro* dated 02 August 1993 and to evaluate the various features/anomalies tentatively identified by SAIC in the aerial photographs. The SAIC report presents historical aerial photographs covering the entire Station from 1946 through 1992. Historical land use and drainage maps are also included in this report. A total of 574 features/anomalies were identified as a result of the aerial photograph survey. Types of features/anomalies tentatively identified by SAIC included: drums, disturbed ground, excavation areas, fuel bladders, graded areas, horizontal tanks, liquid impoundments, open storage areas, stains, trenches, vertical tanks, and wet soil.

Background

The purpose of the SAIC aerial photograph assessment was to identify sites and areas of potential environmental concern that had not been previously identified in earlier aerial photograph surveys. Specifically, this aerial photograph survey was intended to supplement the aerial photograph survey prepared by the U.S. Environmental Protection Agency (EPA) entitled *Site Analysis Report, MCAS El Toro* dated November 1991 (EPA Report). This aerial photograph survey was conducted in support of the Installation Restoration Program (IRP) being conducted on-Station.

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A total of 106 photographs were reviewed for the years 1946, 1955, 1958, 1960, 1961, 1964, 1967, 1968, 1971, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1983, 1984, 1987, 1988, and 1992. Types of aerial photographs included black and white, color, and color infrared at scales of 1:36,000 (1 inch = 3,000 feet) or larger.

At least one aerial photograph for each year listed above was provided in the report, with the exception of the years 1975, 1976, 1977, 1978, 1983, 1987, and 1992. SAIC was contacted regarding this matter and the photographs were reportedly omitted from the report because they could not be reproduced due to copyright restrictions. These photographs are also not available in the Navy or SAIC project files for this report. In place of these photographs, the report provides black and white photocopies of a 1992 base map of the Station to reference the locations of features/anomalies tentatively identified in the missing photographs.

SAIC did not review aerial photographs for the years 1952, 1959, 1965, 1970, 1980, 1981, 1986, 1989, and 1991 because these photographs were evaluated in the EPA report. The EPA photographs have been reviewed by the Jacobs Team as part of the ongoing Remedial Investigation/Feasibility Study (RI/FS) and the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) performed at the Station. The EPA photographs are not addressed in this memorandum.

The SAIC report presents the aerial photographs in chronological order. However, according to the report, photographs were evaluated in random order due to photograph availability problems. This approach to photograph evaluations resulted in the following limitations:

- Minimal evaluations of the chronological development of the Station are provided
- Discussions for each feature/anomaly do not provide year-to-year comparisons

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- Recommendations for further investigation of various features/anomalies are typically based on individual photographs (i.e., 1 year) and do not consider temporal variations

For many features/anomalies, SAIC recommended that additional investigations be conducted to determine if a release occurred. According to SAIC, additional investigations do not necessarily require field sampling and may be satisfied by reviews of the following:

- Historical site usage
- Potential contaminants that may have been used, stored, or disposed of at the site
- Spill response records
- Anecdotal evidence
- Other methods

Review of SAIC Report

The Jacobs Team review of the SAIC report focused on the features/anomalies identified in each photograph presented in Section 2 of the report. As such, the purpose of the review was to evaluate features/anomalies and determine whether additional investigations may be required.

SAIC identified a total of 574 features/anomalies. Table B-1 provides a brief description of these features/anomalies. The features/anomalies were evaluated by the Jacobs Team based on location, SAIC recommendations, and/or other information on the area where the anomalies/features were identified. No further investigation (NFI) was recommended for the following anomalies/features:

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- Features/Anomalies that are located off-Station. The focus of this review was on identification of new sites within Station property. These features/anomalies were not considered for additional investigations.
- Features/Anomalies that are being addressed in the IRP being performed at the Station. As part of the RI Phase II Work Plan, features/anomalies located within or near existing IRP site boundaries were evaluated for possible inclusion into the IRP. Discussions of the IRP review are presented in Appendix A of the *MCAS El Toro Phase II Draft Work Plan* dated 09 November 1993.
- Features/Anomalies that SAIC recommended for no further investigation.
- Features/Anomalies that SAIC recommended for further investigation and whose respective aerial photograph was not included in the report. These features/anomalies were shown on a Station map with only the runways for reference. Because the precise locations and/or significance of the features/anomalies are not discernable in the report, these features could not be adequately evaluated. Efforts were made to access these photographs from SAIC and the Navy, however, the aerial photographs could not be located in the SAIC or Navy files.
- Features/Anomalies recommended for further investigations by SAIC for which historical information and/or analytical data collected during the IRP, RFA, and BRAC Cleanup Plan (BCP) indicate no further investigation is warranted.

Numerous "vertical/horizontal aboveground storage tanks" were identified in the SAIC report and recommended for additional investigation. These features were compared with the Station's master building list and a

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comprehensive list of aboveground storage tanks that was developed for the BCP. In some cases, the features were determined to be aboveground water storage tanks. Those that could not be cross-referenced by the Jacobs Team as aboveground tanks were assumed to be storage bowzers. During several interviews with retired or long-term employees of the Station, it was reported that many bowzers were situated at various locations thought the Station. From 1943 through approximately 1980, it was a common practice to fill these bowzers with waste liquids and spread the liquid over unpaved surfaces for pest and dust control.

Many features/anomalies identified by SAIC are located at the Station's Tank Farms. It is anticipated that all of the Station's underground storage tanks will be removed as part of base closure. It is assumed that removal/remedial actions at the tank farms will address the features/anomalies identified in these areas by SAIC.

The Jacobs Team recommended additional investigations for the following features/anomalies:

- Features/Anomalies that were recommended for further investigation in the SAIC Report and are located in areas where minimal information concerning nearby buildings, facilities, activities, etc. was able to be collected during the RI/FS, RFA, or BCP.

Of the 574 anomalies/features identified in the SAIC Report, 53 anomalies/features are recommended for additional investigation by the Jacobs Team. These anomalies/features are shown in Figure B-1 (the numbers in this figure correspond to Table B-1).