

JOINT LETTER

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May 10, 1994

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MARINE CORPS AIR STATION (MCAS) EL TORO

SUBJECT: FEASIBILITY STUDY (FS) FOR OPERABLE UNIT (OU)-1

1) Addition of a Source Control Approach

The U.S. Environmental Protection Agency (USEPA) and the California Environmental Protection Agency (Cal-EPA) request that a source control approach for groundwater extraction (from the on-Station shallow aquifer) be evaluated as an alternative in the FS. The evaluation of source control would be in addition to the alternatives previously proposed in a CH2M Hill memorandum dated January 25, 1994, which included on-Station groundwater extraction based on a containment approach.

Containment Approach

The previously proposed containment strategy is to hydraulically control on-Station groundwater with elevated levels of volatile organic compound (VOCs) within a portion of the southwest quadrant. This approach would consist of installing extraction wells to form a

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barrier somewhere between source areas and downgradient groundwater. According to a Jacobs Engineering Group Inc. (JEGI) memorandum for MCAS El Toro dated December 22, 1993, the containment approach would not optimize removal of the residual sources since extraction wells would be located away from actual source areas; such removal would be deferred to OU-2.

Source Control Approach

The source control approach would optimize extraction and treatment by locating wells proximal to VOC source areas. Inherent characteristics and recent developments indicate that the approach of source control offers several advantages compared to containment. A JEGI memorandum for MCAS El Toro dated December 23, 1993 states that "A separate wellhead treatment system to remove VOCs from the extracted groundwater is expected to be cost-effective, because it is always cheaper to remove high concentrations of VOCs from a smaller flow than to remove low concentrations from a larger flow." Source control would further enhance removing contaminant mass from the on-Station shallow aquifer per unit time. Since a smaller total volume of extracted groundwater is required with source control, the extraction system would operate for a shorter period of time, thus being more cost-effective than containment. A source control approach may potentially require fewer extraction wells than a containment approach. Moreover, based on discussions with the Orange County Water District (OCWD) at a groundwater modeling meeting on April 7, 1994, the discharge of extracted on-Station groundwater into the Desalter Project may be restricted, perhaps to no more than 200 gallons per minute (gpm). Again, source control is likely a more viable alternative since comparatively smaller flows are required. The implementation of a source control approach for OU-1 eliminates the need for a dual system, i.e., containment as part of OU-1 followed with source control as part of OU-2. Please note, that as part of OU-2, vadose zone source areas may still require remediation under either groundwater extraction scenario. In summary, based on the advantages described above, and irrespective of future changes in the discharge volume totals into the Desalter Project, we feel that source control should be evaluated as an alternative for on-Station groundwater extraction. We feel that ultimately source control may be the preferred alternative.

We recognize that more hydrogeologic information is required to locate source control extraction wells than containment extraction wells. However, the FS and the Record of Decision (ROD) do not have to specify the location of extraction wells; this detail could be addressed in the Remedial Design (RD) stage. We do not expect the addition of source control to further delay the FS schedule since the draft FS submittal date has been changed to mid-July 1994. We do understand that the implementation of a source control approach could potentially delay the operation of an on-Station groundwater extraction system since additional hydrogeologic investigation is needed. To compensate, we propose that the groundwater portion of the Phase II Remedial Investigation (RI), or perhaps more specifically, the Phase II RI groundwater investigation of the southwest quadrant, proceed on a fast-track schedule ahead of the rest of the Phase II RI. Moreover, we should have a much better understanding of VOC source areas based on the soil gas survey results available in late summer 1994.

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2) **Capture of the Off-Station Portion of the Groundwater Plume**

As a result of the groundwater modeling meeting on April 7, 1994, it became apparent that the Desalter Project would not provide complete capture of the off-Station portion of the groundwater plume, specifically, capture of the "toe" of the plume in the area of Culver Drive would not be achieved. Several extraction wells are located within the "toe" of the plume: Irvine Ranch Water District (IRWD)-78 (formerly the Irvine Company [TIC]-78), TIC-108, TIC-113 and the Woodbridge Homeowner's Association North Lake well. Currently, only one well, TIC-108, in addition to the North Lake well (which may operate only intermittently), is currently operating. Nevertheless, even if all these wells were operating continuously, it is our understanding that complete capture of the "toe" of the plume would not occur. To add to the complexity, these wells are not owned by either the Navy or OCWD, the parties that are currently involved in negotiations for the Desalter Project. We request that the FS address complete capture of the off-Station groundwater plume, and if necessary, evaluate other alternatives that would achieve this goal.

If you have any questions concerning these matters, please contact us at our respective telephone numbers listed below.

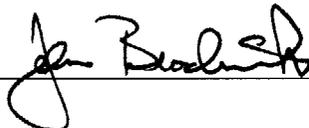
Sincerely,



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cc: See next page.

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