



County of Orange  
California

Gary Simon  
Executive Director  
  
MCAS El Toro  
Local Redevelopment  
Authority

November 8, 2001

Mr. Dean Gould  
BRAC Environmental Coordinator  
MCAS El Toro  
P.O. Box 51718  
Irvine, CA 92619-1718

Dear Dean:

In August 2001, the Navy issued a Technical Memorandum titled "Re-Evaluation of Risk, IRP Sites 8, 11 and 12, MCAS El Toro, California". In it, the Navy recalculates excess cancer risks and non-cancer health impacts based on additional sampling performed in some areas of IRP Sites 8, 11 and 12. And, as a result, the Navy proposes no further action for these IRP sites.

The LRA disagrees with the Navy's no further action recommendation for IRP Sites 8, 11 and 12. The attached memorandum from our consultant, Geosyntec Consultants, Inc., outlines our concerns regarding the Navy's technical approach and the no further action recommendation.

Thank you for the opportunity to comment. Should you have any questions, please feel free to call Polin Modanlou of my staff at (714) 262-0423.

Sincerely,

Gary Simon, Executive Director  
El Toro Local Redevelopment Authority

Enclosure

cc: Triss Chesney, DTSC  
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## M E M O R A N D U M

**TO:** Polin Modanlou, MCAS El Toro Local Redevelopment Authority

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**FROM:** Michael Reardon, GeoSyntec Consultants  
Bertrand Palmer, Ph.D., P.E., GeoSyntec Consultants

**DATE:** 11 October 2001

**SUBJECT:** Preliminary Review  
Draft Re-Evaluation of Risk, IRP Sites 8, 11, and 12  
Marine Corps Air Station, El Toro  
Orange County, California

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### INTRODUCTION

In May 1999, the Department of the Navy/United States Marine Corps (DON/USMC) issued the "Proposed Plan for Clean-up at Three Shallow Soil Sites (Sites 8, 11, and 12)" (Proposed Plan) at Marine Corps Air Station (MCAS) El Toro. The Local Redevelopment Authority (LRA) provided comments to DON/USMC on the Proposed Plan in a memorandum dated 6 June 1999. DON/USMC responded to the LRA comments on the Proposed Plan in a Responsivness Summary (RS) transmitted by letter dated 20 July 1999 from Mr. Thurman Herronimus of Bechtel to Mr. Richard Selby, Contracting Officer, Naval Facilities Engineering Command, Southwest Division.

Prior to issuance of the RS, DON/USMC issued the Draft Record of Decision (ROD) for Operable Unit 3A, Sites 8, 11, and 12 (Draft ROD), dated June 1999. GeoSyntec Consultants (GeoSyntec) reviewed the Draft ROD and RS and the LRA provided comments on the ROD and RS in a memorandum dated 12 August 1999. Following receipt of the comments, DON/USMC issued a Response to Agency comments dated September 1999 and simultaneously issued a draft Final ROD for Site 11 only (Site 11 Draft ROD). The LRA provided comments on the draft Final ROD in a letter dated 29 September 1999.

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In January 2000, DON/USMC issued a technical memorandum titled, "Remedial Action Strategy, Installation Restoration Program Site 11, MCAS El Toro, California" (Site 11 TM). The Site 11 TM contained inconsistencies with the Draft ROD issued for Site 11, specifically with respect to the targeted human health risk levels stated in the Draft ROD and the proposed clean-up goals (concentrations). The LRA issued a letter dated February 2000 to DON discussing these inconsistencies. To date, DON does not appear to have responded to this letter.

However, in August 2001, EarthTech issued a Technical Memorandum titled, "Re-Evaluation of Risk, IRP Sites 8, 11, 12, MCAS El Toro, California" (Risk Re-Evaluation TM) on behalf of DON/USMC. This Risk Re-evaluation TM contains results of additional sampling performed in some areas of Sites 8, 11, and 12 and recalculates excess cancer risk and non-cancer health impacts (Hazard Index) for both residential and industrial scenarios. The revised risk and Hazard Index calculations considered results of recent sampling and updated exposure and toxicity factors. In this Risk Re-Evaluation TM, EarthTech proposes no further action for Sites 8, 11, and 12.

GeoSyntec has performed a preliminary review of the Risk Re-Evaluation TM. The purpose of this memorandum is to present GeoSyntec's preliminary questions and concerns regarding the technical approach and conclusions reached in the Risk Re-Evaluation TM.

## **BACKGROUND**

This section presents a summary of information regarding Sites 8, 11, and 12. This information is based on data generated by DON.

Site 8, the Defense Reutilization and Marketing Office (DRMO) Storage Area, is a storage area for containerized liquids, scrap, and salvage material from MCAS El Toro and Marine Corps Air Facility (MCAF) Tustin. Transformer oil containing polychlorinated biphenyls (PCBs) was reportedly spilled in a specific area of Site 8.

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Site 11, Transformer Storage Area, was used for storage of equipment and scrap metal. Electrical transformers were stored at the site. In 1983, all transformers were removed from Site 11 and disposed of off-site.

Site 12, Sludge Drying Beds, is situated at the location of a former sewage wastewater treatment plant. The sludge produced at this facility was deposited in two areas to dry the material (drying beds). The sludge remaining in the drying beds was reportedly abandoned in place. Earthen berms surrounding the sludge beds were combined with imported fill material and graded in place. The area is currently a grassy picnic area and park.

## DISCUSSION

GeoSyntec generally disagrees with the no-further-action recommendation proposed by EarthTech for Sites 8, 11, and 12. In addition, and more specifically, GeoSyntec has a number of preliminary questions and issues with the work and conclusions presented in the Risk Re-Evaluation TM. Obtaining a response to these questions will help the LRA in planning the reuse of MCAS El Toro. The following is a description of the preliminary issues and questions identified thus far by GeoSyntec.

### Issue/Concern No. 1

In the Proposed Plan, DON/USMC committed to perform remediation work, including contaminated soil excavation and disposal, at Sites 8, 11, and 12. This remedial approach was presented to the public and regulatory agencies. In addition, DON/USMC specifically committed to perform remedial activities at Site 11 to reduce cancer risk to a level of less than  $1 \times 10^{-6}$ . This approach was accepted and approved by the Federal Facility Agreement (FFA) signatories. The Risk Re-Evaluation TM now indicates that DON/USMC proposes no further action at Sites 8, 11, and 12. DON/USMC should explain the rationale used to support this change of position.

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**Issue/Concern No. 2**

In the Proposed Plan, DON/USMC presented risk assessment results and recommended action based on a residential exposure scenario (see Proposed Plan at Pages 4 and 5). EarthTech's recommendations for no-further-action are based on an industrial exposure scenario (see Risk Re-Evaluation TM at pages 4-1 and 4-2). Considering that there has been no change in site conditions or base re-use plan since the Proposed Plan was issued, DON/USMC should explain this change in approach for human health risk data analysis.

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**Issue/Concern No. 3**

In the Proposed Plan, DON/USMC commits to perform remediation work at Unit 3 of Site 12. One of the rationales driving DON/USMC to remediate Unit 3 of Site 12 is: *"The concentrations and type of contaminants are similar to those at Site 12 Unit 1; however this unit is a drainage ditch that conveys surface water runoff into Bee Canyon Wash approximately 50 feet upstream of the Station boundary. PCB and PAH-contaminated soil in this unit may be transported off-site and eventually off-station."* (see Proposed Plan at page 5).

Even considering the risk re-evaluation performed by EarthTech, it appears that DON/USMC rationale is to perform remediation at Unit 3 of Site 12 is still valid. Thus, DON/USMC should perform remediation at Site 12.

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**Issue/Concern No. 4**

EarthTech states that the risk re-evaluation incorporates updated exposure factors and toxicity factors. EarthTech should provide a detailed comparison between the old and the updated factors in order to facilitate review of the Risk Re-Evaluation TM.

For example, exposure time seems to have been decreased from 350 days/year to 100 days/year for the adult resident (see, for example, Risk Re-

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Evaluation TM at page C-2). DON/USMC should provide a detailed explanation for this and other modifications.

**Issue/Concern No. 5**

Some of the risk calculations presented by EarthTech do not seem to agree with what would be expected considering available preliminary remediation goals (PRGs) numbers established by United States Environmental Protection Agency (USEPA) Region 9. For example, Residential PRG for Aroclor 1260 (i.e., cancer risk of  $1 \times 10^{-6}$ ) is 220  $\mu\text{g}/\text{kg}$ .

Thus, one would expect that with an Exposure Point Concentration (EPC) of 1,200  $\mu\text{g}/\text{kg}$ , the cancer risk due to Aroclor 1260 would be greater than  $1 \times 10^{-6}$ ; yet the calculated risk is  $5 \times 10^{-7}$ , a risk lower than  $1 \times 10^{-6}$  (see Risk Re-Evaluation TM at page C-18). EarthTech needs to explain this apparent discrepancy.

**Issue/Concern No. 6**

In Section 3.2.3 (page 3-2) of the Risk Re-Evaluation TM, EarthTech states, *"The risk reevaluation resulted in a further reduction of the cancer and noncancer risk for the residential scenario. There was a marginal increase in the cancer and noncancer risk; however..."*

One sentence says the risk is lower while the next sentence says it is higher. EarthTech needs to clarify these statements.

**Issue/Concern No. 7**

If DON/USMC proceeds with the no-further-action alternative for Sites 8, 11, and 12, then DON/USMC should re-draft and re-circulate a Proposed Plan and ROD.

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**Issue/Concern No. 8**

In Section 4.2.5 (page 4-2) of the Risk Re-Evaluation TM, the re-evaluated cancer risk for residential scenario is said to equal  $1.1 \times 10^{-5}$ . This number contradicts the number given in page 3-9 (Section 3.3.3) and Table C-33. EarthTech needs to revise the document to correct this inconsistency.

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**Issue/Concern No. 9**

In some instances (for example, see Risk Re-Evaluation TM at page 4-2), EarthTech argues that by removing the highest concentration of a given chemical from the computation of the average concentration used in risk assessment, the calculated risk becomes acceptable. This rationale is valid only if the soil containing the high concentration is also removed from the site through remediation. Since DON/USMC has not proposed to do so, this approach to risk assessment is unsupportable.

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**Issue/Concern No. 10**

In many cases, DON attributes a significant part of both cancer and non-cancer risk to arsenic and/or manganese. DON states that arsenic and manganese are related to natural conditions, occur naturally in native soils on the MCAS El Toro property, and that these chemicals are not associated with site-related activities. However, DON/USMC has not evaluated whether arsenic and manganese detected in the relevant units are associated with site activities. As arsenic is a component of metal alloys and rodenticides, and manganese is a component of many paints, varnishes, and hardeners, these chemicals could originate from activities performed at MCAS El Toro. Thus, DON/USMC needs to determine with appropriate sampling whether or not the arsenic and manganese detected at these sites are in fact naturally-occurring.

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**Issue/Concern No. 11**

As part of GeoSyntec's review of the Draft ROD for Sites 8, 11, and 12, a concern regarding radioactivity was presented. In May of 1999, DON/USMC issued a

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document titled, "Draft Historical Radiological Assessment, Marine Corps Air Station El Toro" (Draft HRA). The Draft HRA identifies areas at MCAS El Toro potentially impacted by radiological materials, including Sites 8 and 12. By letter dated June 21, 1999 and repeated in the comments on the Draft ROD, the LRA submitted to DON/USMC comments and questions prepared by GeoSyntec concerning the Draft HRA. DON responded to these questions concerning radioactivity in the September 1999 Response to Agency Comments document. It was stated by DON that once the HRA is completed DON intends to conduct further radiological investigations as recommended in the HRA, and that these investigations will include Sites 8 and 12. Have these investigations been conducted? If so, what were the findings? A recommendation of no further action at these sites cannot be given until the potential radiological issues have been addressed.

#### Issue/Concern No. 12

Additional sampling results for several sites are included in the Risk Re-Evaluation TM. Additional sampling was performed at:

- Site 8 – Unit 5;
- Site 11 – Unit 2; and
- Site 12 – Unit 3.

The results of this additional sampling did not change the Exposure Point Concentrations (EPC) that were used in the revised risk calculations, with the exception of Unit 2 of Site 11. Due to detections of Aroclor 1260 at concentrations up to 9,000 ug/kg at a sample depth of 1.5 feet below ground surface (bgs), the EPC used in the risk calculations was changed from 0.179 to 1.2 mg/kg. Despite the one order of magnitude increase in the EPC, the cancer risk calculated in the Risk Re-Evaluation TM is lower than the cancer risk presented in the Proposed Plan. Could EarthTech further explain this decrease in cancer risk?

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**Issue/Concern No. 13**

Upon review of the additional sampling data, it appears that no samples were collected from shallow (0-1 ft bgs) depths. The shallowest samples collected from Sites 8 and 11 were at a depth of 1.5 ft bgs, while the first sample was collected at 5 ft bgs at Site 12. Given that: (i) contaminants were likely introduced to the sites from surficial releases; (ii) PCBs are relatively immobile in soils; and (iii) the potential for human contact or exposure is greatest at the surface, characterization efforts should have included shallow (0-1 ft bgs) samples.

**Issue/Concern No. 14**

Considering that DON/USMC has discharged chemicals at discrete points during operations at MCAS El Toro, DON/USMC should have sampled at locations that were known discharge points (directed sampling), in addition to randomly selected locations. While random sampling is the correct approach for determining *overall* concentrations at a site, directed sampling is specifically required to characterize known discharge or disposal locations. This is significant to risk managers who want to know not only the risks over an entire area, but also whether certain locations ("hotspots") present a specific risk issue. The risk estimates used by DON/USMC are based on average (specifically, the 95% upper confidence limits of the mean) concentrations determined at randomly selected sampling locations. The inability of DON/USMC to identify localized areas (due to the lack of sampling) with potentially much higher concentrations (as suggested by their identification of specific disposal locations) is a substantial limitation with regard to determining actual human health risk and the appropriateness of future land uses at particular locations on a given IRP site.

In addition, DON/USMC should have further sampled areas of the site where significant chemical concentrations (i.e., Aroclor concentrations of 9,000 µg/kg) were found to be present.

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Issue/Concern No. 15

GeoSyntec previously identified the concrete and asphalt paved surfaces at Sites 8, 11, and 12 as areas of concern in comments prepared for the Draft ROD. In the DON September 1999 response to comments on the Draft ROD, it was stated (Page 2), "*Site 11 is partially paved. Pavement was not sampled at this site. Although the pavement at Site 11 was not sampled, it is part of the area that is planned to be excavated as part of the remedial action at that site. Pavement at Sites 8 and 12 will be addressed in the Draft Final ROD for those sites.*" Based on the revised risk calculations performed by DON/USMC, Site 11 is now being recommended for no further action; therefore, the pavement will not be removed. Where asphalt, concrete, or other paving materials will remain at Sites 8, 11, and 12, DON/USMC needs to discuss sampling that will be undertaken to ensure that such materials are not contaminated and will not pose a threat to human health or the environment. A recommendation for no further action at these sites cannot be given until the condition of the pavement and concrete has been evaluated.

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