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Subject: EPA Comments on the RCRA Facility Assessment
of the MCAS El Toro Facility

Dear Mr. Piszkin:

This letter transmits EPA's comments on the RCRA Facility Assessment for MCAS El Toro dated March 18, 1993. Please note that only the comments listed in Section I need to be addressed in the Draft Final RFA Report.

If you have any questions regarding the attached comments or if you wish to discuss other matters related to the RI/FS, please contact me at (415) 744-2391.

Sincerely,

A handwritten signature in black ink that reads "John Hamill".

John Hamill
Remedial Project Manager

Attachment

cc: Lt. Commander Larry Serafini, USMCAS El Toro
Joe Zarnoch, DTSC
John Broderick, RWQCB
John Dalegowski, CH2MHill

EPA Comments on the RCRA Facility Assessment of the MCAS El Toro Facility

EPA has conducted a review of the MCAS El Toro Draft RCRA Facility Assessment (RFA) report dated March 18, 1993. The objective of the review was to determine the technical adequacy and regulatory compliance of this document. In conjunction with the Draft RFA, the Final Sampling Visit Work Plan (SVWP) was referred to for background information.

The primary objective of conducting this RFA was to provide assurance to EPA that a reasonable and comprehensive effort had been made to identify all potentially contaminated areas at MCAS El Toro. That is, given the inadequacy of previous site investigations, this RFA was to determine if and where releases of hazardous substances, pollutants, and and/or contaminants had occurred. The deficiencies noted in this review demonstrate that this objective has not been fully achieved.

Of the 22 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) which were recommended for sampling in the Draft Preliminary Review/Visual Site Inspection (PR/VSI) report, the Draft RFA report recommends only one SWMU/AOC for remediation within the CERCLA project. While EPA agrees with this specific conclusion, EPA believes that the Draft RFA report may have missed other SWMUs/AOCs which could potentially require further investigation under CERCLA. EPA comments on the Draft RFA are included in Section I of this review.

In addition, the Draft PR/VSI report dated July 3, 1991 was also reviewed by the EPA. Although EPA recognizes that this task was not under the original scope of the review, the RFA report frequently refers to the Draft PR/VSI report. Also, the Draft Final RFA report (which will formally include the Draft PR/VSI) will be subject to EPA review. As a result, a number of deficiencies were noted now. Therefore, they were included in this review to give the Navy additional lead time to address them.

EPA comments resulting from the Draft RFA and the Draft PR/VSI reviews consist of two types of comments. One set must be addressed in the MCAS El Toro Draft Final RFA report, and one set only needs to be considered when preparing the Draft Final RFA report. The comments in the former category are provided in Section I (i.e., comments that are required to be incorporated into the Draft Final RFA report), whereas Section II contains the comments that are for consideration only, and which do not need to be addressed in the Draft Final reports.

Section I. Comments for Incorporation

A. Comments Pertinent to the Draft RFA Report

1. On Page ES-3 of the report, the text states that "...the RFA did not encounter a significant number of samples with chlorinated VOCs or significantly high concentrations..." What is the statistical basis for this statement? How was a level of significance defined?

2. The combined use of surface and subsurface samples at each background station occurred presumably because "...metals concentrations were found to be highly correlated..." (see Appendix D). The text should include statistical support for this statement.
3. As a general note, it appears that all of the sanitary sewers (active and inactive) should be examined as SWMUs due to the nature of known materials released into them and the high possibility of unknown hazardous materials that may have been discharged into them. What assurances can be offered that the sanitary sewer system has not leaked?
4. On Page 6-16, the PRGs are recommended for use when considering ingestion of soil and dermal contact. The El Toro Model (ETM) values are recommended for use when considering potential for impacts on groundwater. However, because of deficiencies such as those noted below, the use of the ETM values for screening of SWMUs and AOCs is questionable.
 - (a) Consider the clear inapplicability of the ETM as applied to aluminum in soil (Table 6-12). A value of 11,296,000 mg/kg is stated as the ETM level. However, this is physically impossible because pure aluminum can only have a maximum mass of 1,000,000 mg/kg. This type of problem with model sensitivity severely limits its potential for incorporation as a meaningful tool for screening.
 - (b) The model used to predict leaching in Appendix E is based, in part, on another apparently similar equation which is not referenced. The original equation and its derivation, starting with a mass balance, should be presented in order to properly assess the final equation provided in this RFA. Throughout the presentation of the model, there are minor errors, omissions, and a noticeable lack of supporting documentation.
 - (c) The model which is presented in Appendix E does not appear to account for moisture content within the vadose zone, and this variable has been shown by Feenstra, et. al. (Assessing Residual NAPL Concentrations in Soil Samples. Groundwater Monitoring Review; 1991; 11 (2) 128-136) to be a critical factor in contaminant sorption and migration.
 - (d) The selected regression equations used to estimate K_{OC} in Appendix E are adequate; however, the authors have elected to use an f_{OC} value of 2 percent in the model, based on a presumption of conservatism. This assumption appears optimistic rather than conservative. In general, the greater the organic carbon fraction present, the higher the degree of sorption. The original researchers have noted that the minimum f_{OC} for these equations to remain valid is approximately 0.1 percent. Considering the nature of the subsurface soils in the vicinity of the site, it appears that a reasonable and conservative range of values of f_{OC} should be about 0.1 to 0.4 percent. The sensitivity of the final leaching results to the selection of 2 percent or 0.1 percent should be noted in the text.
 - (e) The selection of the value for A_a in Appendix E is not clearly explained. Variations in this value by a relatively small amount can significantly change the final results.

B. Comments Pertinent to the Draft PR/VSI Report

1. The EPA believes that additional SWMUs or AOCs may be present at the MCAS El Toro site, for the following reasons:

- (a) Section 1.4 of the Draft PR/VSI report does not adequately discuss site operations and waste management practices at the facility. For instance, although the SWMUs identified in the report manage both hazardous and nonhazardous wastes, Section 1.4 discusses processes resulting in the generation and management of only hazardous waste streams. The report should describe all past and present operations conducted at the facility that have resulted in the generation of all waste streams, and not just those that are RCRA hazardous wastes. According to the RFA Guidance Document, a SWMU is any unit to which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. Tracking of waste streams from generation to shipment off-site could result in the identification of additional SWMUs or AOCs.

Examples of nonhazardous waste streams are asbestos-contaminated materials, drained batteries, wastewater generated from aircraft and vehicle wash areas, and all wastes discharged from oil/water separators, including the skimmed oil, wastewater and any separator sludges. These wastes, although not classified as RCRA hazardous waste, may contain hazardous constituents that could pose a threat to human health and the environment, if released to the environment.

The discussion which centers on hazardous waste operations is limited. For instance, Table 1-1 of the Draft PR/VSI Report identifies waste acids and alkaline liquids, and lab-packs (all of which are presumed to be hazardous) as wastes that were shipped off-site in 1990. However, the processes that generated these wastes, and the associated waste management activities are not described in this section. As mentioned above, a thorough understanding of waste management processes could lead to the identification of additional SWMUs or AOCs.

Finally, Section 1.4 should discuss past solid and hazardous waste generation and management operations to give the reader a clearer sense of how these operations have changed over the years, and how those changes may have affected the release potential for each SWMU/AOC identified.

- (b) The Preliminary Review conducted may have been incomplete, because not all relevant agency files may have been reviewed. For instance, it is known that the facility has experienced releases of dielectric fluid containing high levels of PCBs, and that the facility has generated asbestos-contaminated materials. PCBs and asbestos are regulated under the Toxic Substance Control Act (TSCA). However, no mention was made in the Draft PR/VSI report of whether State or Federal TSCA files were requested or reviewed.

Additional potential regulatory agencies which were not included in the PR include the South Coast Air Quality Management District (SCAQMD), the California Air Resources Board, State and Federal Occupational Health and Safety Administration (OSHA) offices, and the California Department of Toxic Substances Control (DTSC). Each of these sources may yield additional SWMUs or AOCs.

- (c) Additional potential SWMUs and AOCs were identified by EPA through review of the Draft PR/VSI Report. These units include the facility storm drainage system (which historically has received numerous discharges of wastes and fuel spills), and units identified in Appendix B of the Draft PR/VSI Report (such as wash racks at Bldgs. 655, 298, 295/296/297, 463, 294, and 10; oil/water separators at Bldgs. 655, 295/296/297, 672, 294 and 10; Bldg. 672 surge tank; and Bldg. 605 catch basin). These units were not identified as SWMUs/AOCs in the report.
- (d) Based on EPA experience in conducting RFAs at military installations, other potential SWMUs or AOCs may be present at MCAS El Toro, for the reasons discussed below:
 - (d1) The report does not identify any container or tank waste loading/unloading or transfer areas. Each of these areas could qualify as a SWMU.
 - (d2) Are there or have there been any dry cleaners on site? If so, there may be SWMUs/AOCs associated with storage or spills of spent dry cleaning solvents.
 - (d3) Are there any septic tanks present on the site? Old septic tanks (all are potential SWMUs) could be of concern because of past waste management practices which typically included the flushing of wastes down the drains.
 - (d4) The report identifies past usage of PCB transformers. Were any of the areas that were used for the operation and maintenance of PCB transformers inspected for releases during the VSI? Such areas are typically sites of PCB-contaminated oil spills.
 - (d5) The report does not identify the "aircraft refurbishing area", a unit whose identity was disclosed in a meeting with the EPA, April 15, 1993. This omission indicates a potential failure to identify, through scoping, all missions and supporting operations at MCAS El Toro, the commercial and industrial products and materials used in those operations, and any wastes generated and potentially released at the locations where those operations were conducted.
- (e) The following additional concerns were identified from review of the Draft PR/VSI report, the resolution of which may lead to the identification of additional SWMUs/AOCs:
 - (e1) The report identifies that water wall curtains were used to control overspray from painting operations. Were any painting operations conducted in enclosed rooms whose walls were lined with dry filters? If so, where were the used filters stored or disposed? Was there any control

equipment associated with the management of volatile organic compounds from painting operations present?

- (e2) The Draft PR/VSI report discusses a Facilities Management Department (FMD) pump truck and vacuum trucks for removing wastes from drums and tanks. These trucks are potential SWMUs. Where are the empty drums stored? Are the pump trucks and vacuum trucks routinely flushed, and if so, where does this operation occur, and how are the flush waters managed?
- (e3) The report states that flushings from fuel storage tanks were historically disposed via storm drains. How is this waste stream managed at present?
- (e4) Table 1-1 identifies asbestos-contaminated wastes, waste sulfuric acid, waste alkaline liquids and lab-packs as wastes shipped off-site in 1990. Where were these wastes accumulated or stored prior to shipment off-site? Is there a chemical and/or a medical laboratory on site, and if so, are there any associated accumulation areas?
- (e5) According to the report, current operations include the draining of some batteries on site. Where are the drained batteries stored?
- (e6) The SWMU list identifies the active sanitary sewer system lines, the abandoned lines associated with former sewage treatment plant operations and former metal plating operations, as three different SWMUs. It should be confirmed that these units together consist of all sanitary sewer lines that may have received discharges of process wastes at the facility. Historical data on waste management practices shows that solvents and other wastes were routinely discharged to the facility's sanitary sewer system (see the 1945 James M. Montgomery report included in Appendix C of the Draft PR/VSI report).
- (e7) Why is the NPDES discharge point Serial No. 004 (corner of Trabuco Road and Rifle Range Road ditch) not identified as a SWMU? Section 3.2.1.2 indicates that unauthorized discharges may have occurred via this outfall.
- (e8) As indicated in Section 3.6.4, several darkened areas were reportedly observed in aerial photographs (specifically, the 1971 and 1982 photographs obtained from Aerial Map Industries, and the 1947 photographs obtained from Whittier College). On what basis were these areas not included as SWMUs or AOCs in the draft report?
- (e9) Appendix A of the report identifies several tanks whose contents are unknown, yet none of these are identified as SWMUs (e.g., Tanks 37, 40, 53, 54A, 54B, etc.). What was the basis for not including these tanks in the SWMU list?
- (e10) Several wash racks identified in Appendix C of the draft report are not included in the SWMU list (e.g., wash racks associated with Map Reference No. 2, 4, 5, etc. in the "Oil Waste Inventory" table). Why are they not identified as SWMUs?

(e11) Appendix C of the draft report indicates that abrasive blasting operations may have been conducted at the facility. If this is true, how were the wastes from these operations managed?

2. Frequently, the information presented in the unit description for each SWMU/AOC (in Section 6.0 of the Draft PR/VSI report) is limited to that observed during the VSI. This is true even though background information pertinent to a SWMU/AOC is contained in site documentation obtained during the PR, and discussed in the earlier sections (or in the appendices) of the report. EPA believes that this approach may have led to erroneous recommendations for suggested further actions. For example:
- (a) "Currently Active" is entered under Operational History for several SWMUs, even though it is known that the units were operating, say, at least as of 1970. This becomes particularly important when evaluating the release potential for vehicle wash racks and drum storage areas. Several of these units were upgraded in the early 80's. However, the unit descriptions do not mention this fact, and only note the presence of relatively new concrete pads with minor cracks and minimal staining. Based on these observations, no further action is often recommended. However, it would have been more appropriate to recommend that the soil underneath the pads be sampled.
 - (b) No effort seems to have been made to determine the hazardous constituents present in the wastes managed by the SWMUs and AOCs. In addition, frequently, only the wastes observed to be present at a SWMU during the VSI are identified in the individual unit descriptions, even though documentation identifying additional waste types may exist. For those units for which sampling was recommended, sampling and analysis may have been inappropriately limited to those constituents expected in the wastes observed during the VSI.

Section II. Comments for Consideration

A. Comments Pertinent to the Draft RFA Report

1. Based on the results of the Sampling Visit (SV), some of the recommendations contained in the Draft RFA report are puzzling. Section 6.3.1 of this report evaluates the analytical results for those SWMUs and AOCs that were sampled for Total Petroleum Hydrocarbons (TPH) and volatile organic compounds (VOCs). In the Case of SWMUs 14, 110, 198, 213, and 260, although moderate levels of petroleum hydrocarbon contamination were found, the recommended further action is to repair the cracks in the pavement. Why does the recommendation not address the need for further investigation of the site to determine the full extent of the contamination?

In addition, Section 6.4 of the Draft RFA identifies seven SWMUs/AOCs (units 14, 110, 198, 201, 204, 213, and 260) for which the recommended further action is to repair cracks in the pavement. However, Section 6.3, which discusses the sampling and analysis results for relevant SWMUs/AOCs, does not address SWMUs/AOCs 201 and 204. Revise this section to include the sampling and analysis results for SWMUs/AOCs 201 and 204.

2. BTEX were detected at locations 173, 175 and 176, and in some instances at relatively high levels (tens of thousands of ug/kg). These areas should be re-examined in light of this fact for their potential for effects on groundwater. The exclusion of these units from further consideration under CERLCA appears to be based on compliance with ETM values which have not been accepted by EPA.
3. Figure D-1 of Appendix D does not identify background sampling locations. See Table D-1. Station ID numbers in this table identify locations as BGNX-Y, with X as either 1 or 2 and Y as a number between 1 and 10.
4. In Appendix D, the application of a "90 percent confidence limit of the 99th percentile" is not common and should be explained.
5. There are several widely used statistical techniques for the determination of when a value can be considered an outlier. Outliers are indicated on Figures 1 through 23 of Appendix D, but there is no evidence and explanation to support their exclusion from the data set.
6. The calculation of the tolerance limit in Appendix D is presented without reference to source texts and there is insufficient information available to evaluate the applicability of the method or the K factor selected.
7. In Table 1 of Appendix D, arithmetic means are presented; however, the authors have stated in the text that the data follow a log-normal distribution. Therefore, geometric means, which are representative of log-normal distributions, should be included in the table.
8. Table 1 of Appendix D states that only 4 lead values (actually locations) were valid. Please provide an explanation as to why the sample spike recoveries were so poor for this element, and why the duplicates were outside of the control limits for many lead analyses.

9. The text contains the statement that the volumetric flux of water passing through the vadose zone is 1 ft^2 (see Appendix E). The proper units for this variable should be length^3 per unit time (e.g., ft^3/year).
10. There is no presentation of the water balance which was used to estimate volumetric flux through the vadose zone in Appendix E. Specific references should be provided and the mass balances for the water flow should be included.

B. Comments Pertinent to the Draft PR/VSI Report

1. It is unclear whether the entire facility area was systematically canvassed by the VSI team. For instance, consider the MCAS site boundaries shown in Figure 1-2 (depicting the facility site boundary) and Figure 5-1 (depicting the location of the SWMUs and AOCs). These boundaries differ substantially from each other. Figure 1-2 shows two additional areas within the site boundary (an approximate 4000 ft by 2000 ft area to the north, and another larger area immediately south of Borrego Canyon Wash). Are these areas truly part of the MCAS El Toro site? If so, Figure 5-1 should be revised accordingly. Additional SWMUs or AOCs could be located in these areas. However, if a determination was made that there were no waste management activities conducted at these areas, then this information should have been included in the report.
2. Spill areas discussed in Sections 3.2.1.3 and 3.2.4, and Attachment 1 in Appendix B of the Draft PR/VSI report are not identified as AOCs. Note that Section 3008(h) of RCRA authorizes corrective action for releases of hazardous wastes and hazardous constituents at interim status facilities, and is not specifically restricted to SWMUs. AOCs are areas of releases not associated with SWMUs (e.g., releases from production areas and spills of unknown origin). This leads us to suspect that additional AOCs may be present at the facility which were not identified during the PR or during the VSI (for example, other spills not identified as such in the draft PR/VSI Report).
3. As demonstrated by Comment 1 above, EPA believes that additional SWMUs and AOCs may be present at the MCAS El Toro facility. The determination of the number of SWMUs/AOCs was based on the documents obtained during the PR, and the observations made during the VSI. We would like to receive copies of all reference materials, including the VSI field logbook, which were used to complete the RFA documents, with the exception of those already provided in Appendix C of the Draft PR/VSI report