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MCAS EL TORO
SSIC # 5090.3

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Southwest Division
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Contracts Department, Room 131
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San Diego, California 92132-5187

DATE: 28 June 1994

CTO#: 0284

LOCATION: MCAS EI Toro

TASK/WORK ELEMENT:

FROM: Bryant Wong for...
Mike Arends/Project Manager

Ken Tomeo
Ken Tomeo, Resource Center Manager

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CONFIRMATION OF:	CONFERENCE TELECOM OTHER	X	DATE HELD 26 May 1994 DATE ISSUED 27 June 1994 RECORDED BY Daryl Hernandez/CH2M HILL PLACE El Toro, California																
SUBJECT	Contract Task Order (CTO) No. 284 Interviews with Active and Retired Personnel from MCAS El Toro Marine Corps Air Station (MCAS) El Toro																		
PARTICIPANTS: (* DENOTES PART-TIME ATTENDANCE)																			
See below																			
ACTION REQ'D. BY	ITEM																		
	<p>BACKGROUND</p> <p>On Thursday, 26 May 1994, an all-day meeting was held at the Marine Corps Air Station (MCAS) El Toro (Station) to interview active and retired personnel from the Station's Fuel Operations Division and Facility Management Department (currently the Installations Department) who would have a strong knowledge of Station operations and the Station's procedures for storage/disposal of hazardous materials and waste. Participating as interviewers during the meeting were agency personnel, Navy and Station personnel, and personnel from the contractors for the Navy and the U.S. Environmental Protection Agency (EPA).</p> <p>Although previous interviews with Station personnel had been conducted in the past on an individual basis, an interview arrangement allowing the dynamics of interaction between the interviewees was thought to have potential advantages. Also, it was desired to have additional members of the El Toro Team participate as interviewers in the process.</p> <p>The team of interviewers included:</p> <table border="0"> <tr> <td>Albert Arellano</td> <td>DTSC</td> </tr> <tr> <td>Jason Ashman</td> <td>SWDIV (Code 1843.JA)</td> </tr> <tr> <td>John Broderick</td> <td>RWQCB</td> </tr> <tr> <td>David Crawley</td> <td>SWDIV (Code 1831 DC)</td> </tr> <tr> <td>Daryl Hernandez</td> <td>CH2M HILL</td> </tr> <tr> <td>Chrisa Mitchell</td> <td>MCAS El Toro</td> </tr> <tr> <td>Bret Raines</td> <td>SWDIV (Code 1831.BR)</td> </tr> <tr> <td>Sebastian Tindall</td> <td>Bechtel</td> </tr> </table>			Albert Arellano	DTSC	Jason Ashman	SWDIV (Code 1843.JA)	John Broderick	RWQCB	David Crawley	SWDIV (Code 1831 DC)	Daryl Hernandez	CH2M HILL	Chrisa Mitchell	MCAS El Toro	Bret Raines	SWDIV (Code 1831.BR)	Sebastian Tindall	Bechtel
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The panel of interviewees included:

Name	Years at MCAS El Toro	Department
Lee Amador ⁽²⁾	> 10 years (active)	Production Division
Philip Bohn ⁽²⁾	> 10 years (active)	Fuel Operations
Douglas Campbell ⁽²⁾	22 years (active)	Planning & Estimating
Jim Carson	25 years (retired)	Facility Management Department (FMD)
Jacob Kormos ⁽¹⁾	46 years (retired)	FMD
Paul Maize	19 years (retired)	ROICC
Joe Saen ⁽¹⁾	> 10 years (active)	Planning & Estimating
Eugene Silva ⁽¹⁾	41 years (retired)	FMD
Vernon Zepp ⁽²⁾	> 10 years (active)	Fuel Operations
(1)	Previously interviewed in 1991 as part of the RFA conducted at MCAS El Toro.	
(2)	Previously interviewed in early 1994 as part of the BCP prepared for the Station.	

OBJECTIVES

Some of the objectives of the meeting were to:

- o Supplement and/or confirm information obtained from past interviews with current and former long-term Station personnel.
- o Interview personnel in a group environment to pool the collective knowledge of the various individuals.
- o Obtain a better understanding of current and historical operations at the Station.
- o Confirm current information regarding releases and the environmental condition of property.
- o Identify new areas of potential environmental concern at the Station.



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	<p>MEETING MINUTES</p> <p>The following summary of items discussed during the meeting is based on a compilation of meeting notes taken by A. Arellano, D. Hernandez, C. Mitchell, and S. Tindall.</p> <p>Although multiple conversations occurred at various times during the meeting, it is believed that these minutes reflect the major items discussed by the participants.</p> <p>B. Raines opened the meeting by stating the objectives of the interviews and having each of the participants introduce themselves. B. Raines then suggested that the meeting begin with an "open forum discussion" with the representatives from Fuel Operations because they were still on active duty with the Station and could not devote an entire day to the interview.</p> <p>OPEN FORUM DISCUSSION</p> <p>USTs. The large concrete underground storage tanks (USTs) (typically 50,000- and 25,000- gallon capacity) located at the Tank Farms were installed in the early 1940s. J. Kormos said that some of the tanks at Tank Farms 5 and 6 were known to have leaked. Facilities Management Department (FMD) tried, on several occasions, to seal the tanks, however, the leaks persisted. In 1976, these tanks were taken out of service.</p> <p>Tanks 314A and 314B were identified by the panel as tanks that commonly leaked. These tanks are located between the southwest wall of Building 314 and South Marine Way. Both tanks were used to store fuel oil for the Heating Shop located within Building 314. J. Carson said that the tanks were commonly used to dispose of numerous types of waste fluids generated by the trade shops and Marine squadrons. He estimated that approximately 2,000 to 3,000 gallons per day of fuel oil/waste liquids were burned through 1985 when the facility closed.</p> <p>J. Kormos recalled a particular incident when FMD was excavating soil near Site 8 and they encountered oil in the excavation pit. He said that the oil had leaked from the tanks at Building 314 and, in his opinion, may possibly have migrated across the street. [In a follow-up conversation between J. Kormos and D. Hernandez on 17 June 1994, J. Kormos said that waste oil was commonly stored in the Defense Reutilization Marketing Organization (DRMO) Storage Yard (Remedial Investigation/Feasibility Study [RI/FS]) Site 8) located adjacent to the excavation area. He said that spills were common in the storage yard, and that it was likely that the oil encountered during the excavation activities came from this activity rather than from the tanks at Building 314.</p> <p>D. Hernandez said that samples were collected from beneath both Tanks 314A and 314B during the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) field effort. No further action was recommended because no significant hydrocarbon contamination was detected. D. Hernandez also said that the Base Realignment and Closure (BRAC) Cleanup Plan (BCP) provides a comprehensive list or database of the USTs and aboveground storage tanks (ASTs) at the Station. In the BCP, the Navy recommends that the Station develop a Tank Management Plan for the</p>



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purpose of establishing a compliance monitoring program for currently-active tanks and a removal and closure schedule for all tanks (USTs and ASTs) on-Station.

ASTs. J. Carson identified the northeast side of Building 314 as an AST area. He said that two or three small ASTs with sulfuric acid were maintained at this location. Some boiler chemicals were dumped into the sewer drains that lead to the former sewage treatment plant. After the water was treated, it was pumped to the golf course for irrigation purposes.

RI/FS Sites. The interview panel was asked for their general comments on the four landfill areas located on-Station. RI/FS Site 3/4 (Original Landfill) was in operation from approximately 1943 through 1947. There were several burn pits associated with this landfill, as well as an incinerator. The interview panel could not generally agree as to the exact locations of the burn pits. However, the panel concurred that many types of waste were burned at the landfill, including waste solvents, waste oils, and miscellaneous solid wastes.

RI/FS Site 5 (Perimeter Road Landfill) began disposal activities in the early 1950s and was closed in approximately 1975. E. Silva said that throughout the operating life of this landfill, the Station had contracted with an outside recycler to collect scrap metal from the landfill and dispose of it off-Station. The interview panel suggested that despite the relative longevity of this landfill, its lateral size was kept limited because refuse was buried to a depth of approximately 30 feet and refuse burns frequently occurred. Liquid wastes were also commonly disposed of at this landfill. E. Silva described episodes of emptying 55-gallon drums of waste liquids into the landfill.

RI/FS Site 2 (Magazine Road Landfill) was in operation from about 1970 through 1981. Similar types of materials were disposed of into this landfill, as were at the previous two landfills. Refuse burns were typically not allowed at this landfill. However, some infrequent refuse burns did occur at Site 2.

RI/FS Site 17 (Communication Landfill) was in operation from 1981 through approximately 1983. This landfill was used mainly for construction generated wastes. The panel said that FMD did not have control over the type of wastes the Mariner disposed of into the landfill. Therefore, the panel said that it is possible that wash chemicals could have been disposed of into the landfill. No refuse burns were allowed at this landfill.

The interview panel referred to the Agua Chinon Wash as the East Ditch and Be Canyon Wash as the West Ditch. J. Carson said that liquid wastes were commonly disposed of from Buildings 295 and 296 into the storm drains that eventually emptied into the West Ditch.

P. Maize suggested contacting his father, who was an auto mechanic for 18 years at MCAS El Toro. P. Maize said that his father spread crankcase oil, brake fluid, and solvents over the unpaved areas of the flightline area for dust control. This technique of dust control was commonly practiced from the mid-1940s through 1970. P. Maize said that his father could probably identify the most commonly used disposal areas



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	<p>Other Disposal Areas. S. Tindall asked the panel if they could identify other disposal areas on-Station.</p> <p>J. Kormos said that carbon tetrachloride was commonly disposed of at RI/FS Site 13 (Oil Change Area). J. Kormos concurred with the boundaries of RI/FS Site 13 shown in Figure 3-1 of the BCP.</p> <p>J. Carson identified a former laundromat located in Building 307. He said that there was a leaking UST located northeast of the building. J. Carson was unaware of the contents of the UST.</p> <p>D. Hernandez said that Solid Waste Management Unit/Area of Concern (SWMU/AOC) 145 is a UST that is located northeast of Building 307, and that samples were collected from beneath this UST during the RFA. High concentrations of total fuel hydrocarbons (TFH) were detected in every sample and additional investigation of this UST was recommended.</p> <p>J. Carson said that from early the 1940s through the early 1980s, sodium dichromate was used for corrosion protection in boiler systems present in numerous buildings throughout the Station. Every year, a contractor was responsible for flushing the boiler units and replacing the water. It was common practice to release the water into the storm drain system that leads to the East and West Ditches. Approximately 5 to 7 pounds per year of sodium dichromate was used for each unit.</p> <p>Tank Farm Information. The panel provided a brief history on tank farms 1, 2, and 3.</p> <p>Tank Farm 1 was used to store aviation fuel only. Originally, two tanks were installed at Tank Farm 1, however, two additional tanks were installed after leaks were detected in the first two tanks. All four tanks at Tank Farm 1 are out of service, but are still in place.</p> <p>Tank Farm 2 stored JP-4, JP-5, aviation gas, and waste oils. Tank Farm 2 was closed and turned over to the Station Environmental Office in 1987. Sludge was pumped from the tanks soon after the tank farm was closed. The tanks are still in place.</p> <p>Tank Farm 3 stored aviation gas. When the tank farm was closed, oil and sludge was found inside the tanks. Since then, the oil and sludge has been removed. The tanks at Tank Farm 3 are still in place. Currently, the former tank farm area is unpaved (i.e., covered by a lawn).</p> <p>J. Broderick asked the Fuel Operations personnel to identify areas where piping associated with abandoned, closed, or removed USTs is still in place. V. Zepp said that all piping associated with the fuel farms is still in place. P. Bohn said that for UST removals, the general practice of the Station is to flush and cap piping that is located beneath asphalt and/or concrete surfaces. Piping beneath unpaved surfaces is generally removed when the tank is removed.</p> <p>P. Bohn recommended interviewing A. Hernandez, who was responsible for the fuel division at El Toro for over 30 years.</p>



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	<p>Department of Toxic Substances Control (DTSC) Questionnaire Responses</p> <p>Joe Zarnoch/DTSC (not present during the 26 May meeting) had previously prepared a detailed list of questions that was mailed to most of the members of the interview panel prior to the meeting. The following section presents the question in bold type followed by the panel's response to each question in regular type. Panel responses represent the general overall response of the entire panel. In some instances, an individual member's response has been highlighted because of specific knowledge that the panel member had with respect to the question.</p> <p>1. Describe operations at Buildings 295, 296, 297, and 324.</p> <p>These are aircraft hangars where overhaul and rebuild (O&R) activities were conducted. O&R activities included: metal plating shops, aircraft painting, paint removal, parts cleaning, and aircraft refurbishing. Some of these activities were conducted on the parking apron, as well as within the hangars.</p> <p>2. Were other buildings or areas used for rework or refurbishing operations?</p> <p>Squadron level O&R activities are conducted at all Marine aircraft hangars.</p> <p>3. How long were the plating shops in Buildings 296 and 297 in operation? Was it just 1 year or so or actually longer?</p> <p>J. Kormos: Metal plating activities were conducted for a period of approximately 4 to 6 months. There was no central accumulation area for the waste generated. Therefore, it was common to dump cleaning fluids down the drains (industrial waste lines) or onto the ground surface around these buildings. The industrial waste treatment plant was in operation for approximately 1 year.</p> <p>The industrial waste sewer lines are constructed of cast iron and cold jointed together. The sanitary sewer lines are made of clay with concrete connections, and the storm sewer lines consist of concrete and clay material.</p> <p>J. Kormos recommended speaking with Tom Head, who was the plating mechanic at the time of its operation. T. Head currently lives in Santa Ana.</p> <p>4. Were there other plating shops?</p> <p>According to the panel, some plating operations occurred in Building 309. Building 309 is currently a photographic development facility for aerial photographs of field exercises, war situations, and the Station itself.</p> <p>D. Hernandez: Aerial photograph development activities are conducted at Building 309. During the Visual Site Inspection (VSI) portion of the RFA, personnel at Building 309 were interviewed and efforts were made to review this file of aerial photographs of the Station. The personnel said that the photographs were classified information and could not be reviewed.</p>



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	<p>This facility was inspected during the VSI in 1991 for storage and potential releases of hazardous materials and/or waste. The photograph department uses an outside contractor that delivers unused photographic development products and recycles the used chemicals. Therefore, the facility does not store waste materials. No evidence of a release was observed during the inspection.</p> <p>5. Describe solvent, plating shop solution handling practices at Buildings 295, 296, 297, and 324. Describe disposal of spent plating bath solutions and solvents. Were they dumped onto the ground or discharged through the industrial waste sewer line?</p> <p>Refer to response to question number 3.</p> <p>6. Describe the condition of sumps at the plating shops. Were the sumps deteriorated?</p> <p>The panel was unaware of the condition of the sumps. The sumps were filled with sand and capped with concrete before most of them had started working on the Station. J. Kormos said that some of the sumps in these buildings were usually filled with liquid.</p> <p>7. Were solvents routinely or periodically dumped in the area of Buildings 295, 296, 297, or 324?</p> <p>Refer to response to question number 3.</p> <p>8. Were solvents drained to the east of Building 296 and onto a drainage ditch that eventually led to Agua Chinon Wash?</p> <p>Yes. Waste fluids were dumped all around the building.</p> <p>9. How was TCE/PCE handled for the degreaser in Building 324?</p> <p>Waste liquids were generally disposed of down the drain.</p> <p>J. Kormos: Some squadrons commonly stored waste fluids at their facility and then transferred the full barrels to Building 324. The drums were stored on three sides of the building on top of marsdon matting. Usually, there were 50 to 100 drums at this location; however, not all of the drums were constantly full.</p> <p>10. Were there other TCE/PCE, carbon tetrachloride degreaser pits, tanks, washers that you remember?</p> <p>A TCE degreaser tank was located inside Building 359. Other degreasers could have been located at the squadron hangars where general aircraft maintenance activities occurred.</p>



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	<p>11. Were solvents, in addition to fuels, used in the burn pit at RI/FS Site 9? If so, what solvents were used and how were they transported to the burn pit?</p> <p>Probably not. Only out-of-spec fuel was burned at the burn pits.</p> <p>12. In your opinion, what could account for the high concentration of TCE in the groundwater at the burn pit area of RI/FS Site 9?</p> <p>Generally, the panel had no idea of what could be the cause/source of the contamination since only fuels were supposed to have been burned at the pits.</p> <p>J. Kormos: Recommended reviewing former purchase order records from various squadrons to see what type of materials were used for their operations.</p> <p>J. Carson: FMD did not have control over the activities of the Marines. He suggested that the Marines could have disposed of waste solvents into what were supposedly "contaminated fuel" drums that were burned at the crash crew pits.</p> <p>13. Describe activities at the former Heavy Duty Maintenance Shop in Building 1589.</p> <p>Heavy duty vehicle maintenance. Waste fluids were kept in bowzers that were located outside the building. When the bowser was filled with waste liquids (crank case/transmission oil, hydraulic fluid, possibly used solvents) the fluid was emptied onto the unpaved soil in areas around the building and within the flightline for dust control.</p> <p>14. Was oil sprayed for dust suppression in the area of RI/FS Site 10? If so, in what other areas? Did the oil contain solvents? If so, where did the solvents originate?</p> <p>Yes. Refer to response to question number 13.</p> <p>15. Why was the area at RI/FS Site 10 excavated? For expansion of the apron or was the site, in your opinion, contaminated? Was soil in the area dark from the dust suppression application? Area excavated in 1971 to a depth of 2 feet. What happened to the excavated soil?</p> <p>This area was graded for expansion of the parking apron for Hangars 295, 296, and 297. West Division, Naval Facilities Engineering Command (WESTDIV), in San Bruno CA., was responsible for executing the contract for the tarmac expansion. During the grading activities, they encountered dark, petroleum-contaminated soil that was transported to a landfarming area located west of Perimeter Road and north of Bee Canyon Wash. The soil was stored at this location for a period of approximately 6 months. After this time, the soil was graded over the entire landfarming area.</p> <p>D. Hernandez: The landfarming area was investigated during the RFA program as SWMU/AOC 6. Eight samples were collected from four hand auger holes at various locations within the landfarming site. The samples were analyzed for total petroleum</p>



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	<p>hydrocarbons (TPH), TFH (gasoline and diesel), and volatile organic compounds (VOCs). No further action was recommended as a result of the analytical data.</p> <p>16. Describe activities at the paint shop or adjacent to Building 1589. How were paint sludges handled? Disposed of onto the ground or trenched? Was degreasing conducted at the paint shop?</p> <p>Painting operations were conducted at this building until approximately 1985. The panel was generally unaware of the activities/operations at this facility. They recommended contacting Isaac Curtis, a former auto paint foreman at this building.</p> <p>17. Can you offer an explanation for the discovery of TCE in the groundwater east of RI/FS Site 8? Were there other areas east of RI/FS Site 8 where solvents were handled?</p> <p>RI/FS Site 8 is a regional DRMO storage yard for various installations located across the nation. All types of equipment have been stored at this storage yard. The panel recommended contacting Rudy Lopez, who worked at RI/FS Site 8 for many years. No one knew R. Lopez's phone number, however, he may still live in the Orange County area.</p> <p>E. Silva: The storage area was unpaved for a long time. On numerous occasions, there was dark, oily soil within the storage area. E. Silva specifically remembered excavating "contaminated" soil from the site and transporting the soil to RI/FS Site 2. New "clean" soil replaced the soil.</p> <p>18. In general, do you remember solvents being poured on the ground or dumped into storm drains?</p> <p>Yes - It was common to pour waste fluids onto the ground surface or down the floor drain. Panel members remembered removing sludge from the sewer sumps and disposing of the sludge into the landfills.</p> <p>19. Are you familiar with the former Wastewater Treatment Plant?</p> <p>Yes - The sewage treatment plant was in operation from the early 1940s through early 1970s.</p> <p>J. Carson: One time, acid was accidentally dumped into the sanitary sewer system that eventually killed all the biomass at the sewer plant.</p> <p>P. Maize: Most dumping occurred into the storm drain system because there is limited access to the sanitary sewer drains. Storm drains are usually open to the streets or surface drains located near buildings.</p>



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	<p>20. Describe the former sludge drying beds. Construction. Depth. Did they all contain the same type of sewage sludge? Is the current ground elevation the same as when the sludge beds were in operation?</p> <p>J. Carson: A 4-foot earthen berm surrounded the sludge drying beds. The bottom of the beds were lined with a sand layer. When the beds were closed, some fill material was imported to the site and graded with the berm material in place. The current elevation of the site is approximately 5 feet above the original surface.</p> <p>J. Kormos: On several occasions, J. Kormos remembered spreading sludge at various locations throughout the Station. He said that RI/FS Site 2 was a common disposal area for the excess sludge.</p> <p>21. Are you familiar with how the sludge drying beds were demolished?</p> <p>Refer to response to question number 20.</p> <p>22. Are you aware of any leaks from tanks at the wastewater treatment plant (WWTP)?</p> <p>Panel members were not aware of any leaks that may have occurred at the WWTP.</p> <p>23. Is the ground elevation at the WWTP area the same now as when the plant was there?</p> <p>The current ground level is approximately 5 feet above the original ground surface. Refer to response to question number 20.</p> <p>24. Were solvents handled or stored at the WWTP?</p> <p>Solvents were not a part of the daily operation at the WWTP. Soaps, deodorizers, and lime were commonly used at this facility.</p> <p>25. What can you tell us about six tanks that were located between the WWTP and Stratum 2?</p> <p>The tanks were probably chlorine storage tanks.</p> <p>26. What can you tell us about the two tanks located east of the WWTP?</p> <p>J. Carson: The two tanks were probably empty fuel standby tanks that were located in this general area. The tanks were available for emergency backup purposes. The panel was unaware if the tanks had ever been used.</p> <p>27. In your opinion, if you were going to conduct an environmental investigation of soil at RI/FS Site 12, where would you locate your samples?</p> <p>Nobody on the panel recommended sample locations. In response to this question, the panel members reviewed the boundaries of the sludge drying beds. They all concurred with the boundaries shown on Figure 3-1 of the BCP. Only J. Kormos was</p>



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	<p>aware of the existence of the beds located adjacent to Bee Canyon Wash. He said that these beds were constructed for secondary containment of overflow from the primary beds located adjacent to S. Perimeter Road. These beds were only in operation for a few years (circa 1952). J. Kormos also agreed with the location of these beds shown on Figure 3-1 of the BCP.</p> <p>28. Describe the former PCB transformer storage area just south of RI/FS Site 12. Any known releases?</p> <p>This area was used to store transformers from power poles. Some of the transformers were originally stored at RI/FS Site 12 and later transferred to this storage area. Transformers were stored at RI/FS Site 12 from the late 1940s through about 1991 when all the transformers had been removed from the Station by an outside contractor.</p> <p>29. Are you familiar with the FS Smoke disposal area?</p> <p>Panel members were not aware of the FS Smoke disposal area.</p> <p><u>RI/FS Site 1 - Magazine Road Landfill (late 1960s to 1980s)</u></p> <p>30. Do you know if radioactive material/waste was disposed of in this landfill? Other landfills?</p> <p>The panel members had no knowledge of radioactive material ever being disposed of into any of the landfills by the FMD. However, they all said that they were not fully aware of all disposal activities that may have been conducted by the Marine squadrons on-Station. Since the landfills were not under 24-hour surveillance, it is possible that equipment painted with radium paint could have been disposed of into the landfills by the Marines.</p> <p>31. Do you have any idea of the volume of liquid chemicals disposed of in this landfill? If so, were drums of chemicals buried there?</p> <p>Possibly 2 or 3 drums of waste fluids were disposed of into the landfill at any given time. The panel members were unable to estimate a total volume that may have been disposed of into the landfill.</p> <p>Burn pit activities occurred at RI/FS Site 2 on only a few occasions. The Station was aware of this landfill being relatively close to the water table, therefore, the depth of the burn pits was restricted, thus limiting the number of burns.</p> <p>32. Do you feel that the landfill boundaries (Site 2 - Magazine Road Landfill), as currently defined, are accurate?</p> <p>All panel members agreed that the boundaries that appear on Figure 3-1 of the BCP encompass an area slightly larger than the actual disposal area. The boundaries northeast of the access road appear to be accurate. The area south of the access road was never used for disposal purposes. The panel agreed that the southwest boundary could be redrawn along the access road.</p>



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	<p>33. Do you think that wastes were ever buried in the area defined as Stratum 2?</p> <p>Waste was not disposed of into the area south of the access road.</p> <p>34. Were wastes ever burned?</p> <p>J. Kormos: Wastes were only burned at RI/FS Site 2 on a few occasions.</p> <p style="text-align: center;"><u>RI/FS Site 3 - Original Landfill</u></p> <p>35. Are you familiar with the two areas excavated in 1952 and located east of Agua Chinon Wash?</p> <p>The panel could not come to agreement as to when or where the excavation pits were located. The pits were used to burn waste that was disposed of into the landfill. An incinerator (SWMU/AOC 194) was located northwest of the Original Landfill. Most of the burning activities were conducted within the pit sites. The incinerator was only used on windy days.</p> <p>36. Are you familiar with the excavation that was conducted during the construction of Building 746 (Flight Simulator Building)?</p> <p>The excavation was probably associated with construction activities for the Hush House during the early 1980s. Approximately 3,000 cubic yards of soil was excavated for the construction of this facility.</p> <p>37. Do you feel that the landfill boundaries (Site 3 - Original Landfill), as currently defined, are accurate?</p> <p>The members of the panel concurred with the boundaries of RI/FS Site 3/4 shown in Figure 3-1 of the BCP.</p> <p>38. Do you think radioactive material/waste was disposed of at this landfill?</p> <p>Members of the panel had no knowledge of radioactive material ever being disposed of into the landfill.</p> <p>39. Do you know of Well 24-4247 (east of Building 385) and how it was abandoned?</p> <p>Members of the panel could not provide any information concerning Well 24-4247.</p> <p>40. Were JP-4 and aviation gas stored at Tank Farms 5 and 6?</p> <p>It is possible that JP-4 and aviation gas could have been stored in these tanks since they were constructed in the mid-1940s.</p>



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	<p style="text-align: center;"><u>RI/FS Site 5 - Perimeter Road Landfill</u></p> <p>41. Did disposal of radioactive material/waste occur at this landfill?</p> <p>Members of the panel had no knowledge of radioactive material ever being disposed of into the landfill.</p> <p>42. Any knowledge of liquid chemicals being disposed of there? Quantities? In drums?</p> <p>Yes. All different types of waste were disposed of into the landfill, including solid waste and liquid chemical waste.</p> <p>J. Kormos: J. Kormos remembered emptying 55-gallon drums of miscellaneous waste fluids onto the unpaved ground.</p> <p>J. Carson: Some of the burn pits were as deep as approximately 30 feet below the ground surface. He remembered driving semi-trucks and tractors into the pits and not being able to see the tops of the tractors from the ground surface outside the pits.</p> <p>43. Do you feel that the landfill boundaries, as currently defined, are accurate?</p> <p>J. Carson: The general location of the landfill appears to be accurate. The southern tip of the landfill should be extended further south to include the tee box of the fifth hole and the fourth green of the Station golf course. There was an unpaved access road that led from approximately the corner of El Toro Road and Perimeter Road to the disposal area. The width of the landfill could also be expanded to approximately twice the width shown in Figure 3-1 of the BCP.</p> <p style="text-align: center;"><u>RI/FS Site 7 - Drop Tank Drainage Area No. 2</u></p> <p>44. A 1970 aerial photograph indicates that a tank was located on the grassy area northeast of Building 295. Are you aware of such a tank?</p> <p>Members of the panel were unaware of the tank identified in the SAIC photograph.</p> <p>D. Hernandez: The hazardous waste storage area (SWMU/AOC 71) associated for Building 295 was visually inspected during the RFA program. At the time of the VSI, an approximate 500-gallon bowser was observed near the hazardous waste storage area. The hazardous waste storage area was not recommended for a sampling visit since it was located within the boundaries of RI/FS Site 7. Mobile bowser tanks were commonly used throughout the Station to store waste oils collected from maintenance activities. A common practice was to spread the waste oil collected in these tanks onto unpaved areas of the Station for dust control. It is possible that some of these bowzers could have been misinterpreted as vertical tanks in the SAIC aerial photo report.</p>



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	<p>45. Storage areas east of RI/FS Site 7. What were the practices?</p> <p>Various types of equipment and waste were stored in this area. Some of the equipment included paint lockers, compressors, and pilot seat ejection charges. Types of chemical wastes included waste solvents, flammable materials, waste oils, etc.</p> <p>46. Do you think there are any other sources of TCE we are finding in the groundwater?</p> <p>The panel agreed that there could be other sources of TCE contamination; however, they did not suggest any other possible source locations.</p> <p style="text-align: center;"><u>RI/FS Site 8 - DRMO Storage Yard</u></p> <p>47. Do you believe that the storage activities at RI/FS Site 8 could have impacted groundwater? Were solvent spills common?</p> <p>Yes. All different types of equipment were stored at the DRMO storage yard. The DRMO facility at MCAS El Toro is a regional facility and stores equipment from other installations. Solvent spills frequently occurred at the RI/FS Site 8 storage yard.</p> <p>D. Campbell: The Marines could have stored small quantities of radium painted parts and gauges at this storage yard since it is a regional storage yard.</p> <p>48. What do you know about the degreaser in Building 359? Was TCE dumped into the storm drain?</p> <p>The degreaser emptied into a recovery tank that was located outside the building. The panel members were unaware of specific operation procedures for the degreaser tank.</p> <p>D. Hernandez: Both the degreaser and the recovery tank were investigated during the RFA program (SWMUs/AOCs 100 and 102, respectively). Samples were collected from beneath the degreaser tank and adjacent to the recovery tank. No further action was recommended for both SWMUs/AOCs based on the analytical data indicating no significant VOCs in the soil samples. The recovery tank was removed in mid-1993.</p> <p style="text-align: center;"><u>RI/FS Site 10 - Petroleum Disposal Area</u></p> <p>49. Were there trenches at RI/FS Site 10? For what purpose?</p> <p>Panel members could not recall a specific trench in this general area. When this area was graded for the extension of the tarmac, petroleum- contaminated soil was excavated and transported to the landfarm area northwest of Bee Canyon Wash (SWMU/AOC 6) and to the landfill at RI/FS Site 2. Refer to question number 15 for additional discussions about SWMU/AOC 6.</p>

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	<p>J. Kormos: J. Kormos said that a storm drain trench was located adjacent to the northwest edge of the original parking apron. The drain was used to divert surface runoff away from the apron. Also, a fuel bladder (RI/FS Site 22) was located near the same edge of the parking apron.</p> <p>50. There apparently was a parts dip tank at Building 1589. The spent solvent was used to wash the cement decks and the lube racks. Are you familiar with this practice?</p> <p>Building 1589 is a Heavy Duty Vehicle Maintenance Shop. Members of the panel had little knowledge of the operating procedures of this facility. They were unaware of solvents used to clean the work bays.</p> <p>51. Do you think the solvent/waste oil applications for dust suppression could have contributed to the groundwater contamination in this quadrant of the Station?</p> <p>Yes - Spreading waste liquids over unpaved soil was a common practice for dust control for many years. The panel generally thought it reasonable that this practice could have contributed to groundwater contamination.</p> <p>52. Do you know of seven former vertical tanks west of Crash Crew Building 435?</p> <p>Members of the panel had no information concerning seven former vertical tanks.</p> <p style="text-align: center;"><u>RI/FS Site 11 - Transformer Storage Area</u></p> <p>53. Do you know if PCB transformers or equipment were stored in the dirt lot behind Building 369?</p> <p>D. Campbell: This area was used to store equipment that needed repair work. Many transformers were refilled with PCB oil at this location. He estimated that approximately 4 to 10 gallons per year of PCB oils were spilled onto the ground surface.</p> <p>54. Do you know about the PCB spill that occurred on September 29, 1982 between Buildings 369 and 335?</p> <p>Yes. One transformer fell off a truck and spilled approximately 5 gallons of PCB-containing fluid onto the asphalt surface. The impacted asphalt was removed, along with the top 18 inches of soil beneath the asphalt. The excavated material was disposed of into the Station landfill.</p>



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RI/FS Site 13 - Oil Change Area

55. Did Tank Farm 2 hold JP-4 or aviation gas?

Yes. JP-4, JP-5 and aviation gas were stored at Tank Farm 2. This Fuel Farm was closed and turned over to the Station Environmental Office in 1987.

56. Do you think the boundaries of this site are accurate?

The panel concurred with the boundaries of RI/FS Site 13 shown in Figure 3-1 of the BCP.

RI/FS Site 14 - Battery Acid Disposal Area

57. Do you know why this site may be a source of carbon tetrachloride in the groundwater?

The panel did not have any knowledge of the activities conducted at this site.

58. Were solvents used in Building 245 (Heavy Duty Maintenance Shop)?

Yes - Building 245 is a vehicle maintenance shop.

RI/FS Site 15 - Suspended Fuel Tanks

59. What were the activities at Building 31 until 1977? It was apparently the Heavy Duty Maintenance Shop until 1977 when the operation moved to Building 245.

A Marine ground support unit is housed in Building 245. This unit conducts maintenance and overhaul activities of the heavy equipment. Some of the equipment includes: generators, cranes, tractors, etc. The panel did not have any specific knowledge of the operations at this facility.

D. Hernandez: RI/FS Site 15 and SWMUs/AOCs 30, 31, 272, 273, and 274 are located within the storage yard of this facility. Samples were collected from RI/FS Site 15 and SWMUs/AOCs 30, 272, and 273. No further action was recommended for each of the SWMU/AOCs.

60. Was waste oil drained onto the ground behind Building 31 until 1983?

Panel members were unaware of specific operations conducted at Building 31.

61. Describe the storage activities at or near RI/FS Site 15.

Refer to response to question number 59.



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RI/FS Site 16 - Crash Crew Pit No. 2

62. Do you know of problems with the current fire fighting training pits?

Yes. During the first use of the "Z" shaped training pit, the concrete exploded and cracked from the extreme temperatures. This pit has not been used since.

63. Do you know of four former tanks located just to the east of RI/FS Site 16?

The panel had no knowledge of the four tanks at RI/FS Site 16.

D. Hernandez: This anomaly was probably misinterpreted in the SAIC Aerial Photograph Report. The feature that the report had identified as four vertical tanks is a Vortac Facility (Building 399) operated by the Federal Aviation Administration (FAA).

64. Do you remember a trench just south of the burn pit?

The panel recalled that a Crash Crew station was located in this general area. The Crash Crew station is located near the center of the airfield and provides subsurface shelter to the crash crew in case of an emergency.

RI/FS Site 17 - Communication Station Landfill

65. Do you know if liquid chemicals were disposed of there?

The Communication Station Landfill (RI/FS Site 17) became active after RI/FS Site 2 closed. This landfill was in operation from approximately 1981 through 1983. Mostly construction debris was disposed of into the landfill; however, waste liquids could easily be disposed of into this landfill by the Marines. No burning activities were conducted at this site.

RI/FS Site 19 - ACER Site

**66. Can you tell us anything about the excavation that was performed there?
 The pit is still there.**

RI/FS Site 19 is the location of a former fuel bladder. Approximately 20,000 gallons of jet fuel leaked onto the ground surface when a disgruntled Marine slashed a hole into the bladder. Part of the impacted soil was excavated away and replaced with fill from RI/FS Site 8.

67. Do you know where 15,000 gallons of JP-5 were spilled?

Refer to response to question number 66.

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	<p>68. Do you remember a trench at this site, just north of Stratum 1?</p> <p>Members of the panel could not recall a specific trench at this site. However, the panel noted that there were several surface drainage ditches within this general area that directed runoff toward Agua Chinon Wash.</p> <p style="text-align: center;"><u>RI/FS Site 21 - Materials Management Group, Building 320</u></p> <p>69. Do you remember drums being stored next to a parking lot across the street from Building 320.</p> <p>Building 320 is a warehouse for receiving new product material onto the Station. Many drums of product material are stored adjacent to the west side of the building. The panel assumed that the drums located across the street from the building were probably new material that was temporarily being stored. The panel could not provide any specific information.</p> <p style="text-align: center;"><u>RI/FS Site 22 - Tactical Air Fuel Dispensing System</u></p> <p>70. On April 18, 1978 and March 23, 1979, and April 13, 1979, JP-5 was spilled onto the parking area next to Building 369 and washed into the storm drain that leads to Bee Canyon. Can you give us any additional information on these spills?</p> <p>J Carson: Building 369 is the Serv Mart facility. J. Carson was responsible for making sure the skimmer at Bee Canyon Wash was working whenever a spill was reported. It was common practice for the Marines to wash the jet fuel tanks at this location and let the runoff flow into the storm drains. The fuel bladder was checked for leaks on a daily basis, however spills were usually reported once or twice a year. According to J. Carson, there was usually a strong petroleum odor present in this general area.</p> <p>J. Carson said that for approximately 30 years, there was no spill protection at the washes. In the early 1970s, the Station installed a primitive recovery system that could only recover a portion of the spill (about 30 to 40 percent of the fuel in the wash). Later, a more advanced recovery system was installed that was able to recover a higher percentage of each spill.</p> <p style="text-align: center;"><u>Buildings 288 and 289 (Aircraft Maintenance Department)</u></p> <p>71. Can you describe the activities and waste handling procedure at these buildings? (There was some confusion about this question related to the building numbers specified. Buildings 288 and 289 are located near the northwest corner of the airfield. Building 288 is an administrative building and Building 289 is an aircraft hangar where the Station Commander's aircraft is stored. Since this is an area of little activity or concern, it was assumed that the question is referring to the activities at Building 388.)</p>



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	<p>Maintenance activities for heavy equipment are conducted at Building 388. The maintenance operations at Buildings 388 and 655 are conducted by Marine units. Therefore, the panel could not provide specific information concerning this area.</p> <p style="text-align: center;"><u>Building 298 (Light Duty Maintenance Shop)</u></p> <p>72. Activities apparently included a caustic tank and two parts dip tanks. Solvents from dip tanks used to clean cement decks. Battery acid was poured down a floor drain in the west end of Building 298. Would you have any information on this occurrence?</p> <p>Building 298 is a light duty vehicle maintenance shop. A battery storage area is associated with the operations at this facility. Until approximately 1986, battery acid was neutralized at this facility. The panel assumed that acid had been disposed of into the floor drain of the storage room because the piping had been changed several times due to corrosion. According to J. Carson, the drain is plumbed to the sanitary sewer system.</p> <p>A steam cleaner and waste storage area are located west of the building near S. Marine Way. This storage area (SWMU/AOC 83) and an oil/water separator (SWMU/AOC 84) associated with the storage area were sampled during the RFA field effort. No further action was recommended for SWMU/AOC 83 and leak testing and inspection of the oil/water separator were recommended for SWMU/AOC 84.</p> <p>GENERAL QUESTIONS</p> <p>After the questionnaire had been addressed, S. Tindall asked the panel to identify other possible disposal areas.</p> <p>The panel said that there is a fill area located behind the old Px building near the off-Station housing area. They said that when the housing area was graded for development, surface runoff would flow toward a small valley behind the old Px. Apparently, a wetlands area was created from the runoff. In order to keep the children from playing in the water, this area was filled.</p> <p>General construction refuse was also disposed of into this area. Disposal activities began in 1985. The panel was not aware of when they ended. The panel estimated that the filled area is approximately 60 feet deep. The panel said that FMD did not dispose of hazardous waste into this fill area, but they were not sure what the Marines may have disposed of here.</p>