



M60050.003156  
MCAS EL TORO  
SSIC NO 5090 3

CLEAN 3 Program  
Bechtel Job No. 23818  
Contract No. N68711-95-D-7526  
File Code: 0232

**IN REPLY REFERENCE: CTO-045/0074**

June 8, 2004

Contracting Officer  
Naval Facilities Engineering Command  
Southwest Division  
Mr. Chon S. Son, Code 02R1.CS  
1220 Pacific Highway  
San Diego, CA 92132-5190

Subject: Navy Responses to Regulatory Agency Comments  
Draft Technical Memorandum, IRP Sites 16 and 24, Indoor Air Risk Evaluation  
Former Marine Corps Air Station, El Toro, California

Dear Mr. Son:

It is our pleasure to submit this copy of the Navy responses to comments on the Draft Technical Memorandum, IRP Sites 16 and 24, Indoor Air Risk Evaluation, Former Marine Corps Air Station, El Toro, California. At SWDIV direction, this submittal has been distributed to the recipients indicated on the attached transmittal sheet.

Also at SWDIV direction, the Final Technical Memorandum has been distributed under separate cover. The Final Technical Memorandum addresses all agency comments received during the comment period, including agreed-upon revisions reflected in this submittal.

Please contact me at (619) 744-3004 if you have any questions.

Sincerely,

  
Thurman L. Heironimus, R.G.  
Project Manager

TLH/sp  
Enclosure



BECHTEL ENVIRONMENTAL, INC.

CLEAN 3 TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-95-D-7526

Document Control No.: CTO-0045/0074

File Code: 0232

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Chon S. Son, Code 02R1.CS
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: June 8, 2004

CTO #: 045

LOCATION: MCAS El Toro

FROM: Thurman L. Heironimus, Project Manager

DESCRIPTION: Navy Responses to Regulatory Agency Comments - Draft Technical Memorandum,
IRP Sites 16 and 24, Indoor Air Risk Evaluation

TYPE: Contract Deliverable (Cost) X CTO Deliverable (Technical) Other

VERSION: N/A REVISION #: 0

ADMIN RECORD: Yes X No Category Confidential

SCHEDULED DELIVERY DATE: 06/08/04 ACTUAL DELIVERY DATE: 06/08/04

NUMBER OF COPIES SUBMITTED: 0/8C/7E

COPIES TO (Include Name, Navy Mail Code, and No. of Copies):

SWDIV:
G. Tinker, 06CC.GT (O)
Basic Contract File, 02R1 (1C)
C. Arnold, 06CC.CA (1C/1E)
R. Callaway, 09C.RC (1C/1E)
M. Ault, 06CC.MA (1C/1E)
M. Smits, 06CC.MS (1C/1E)
D. Silva, 05G.DS (3C/3E - 2 unbound for AR)

BECHTEL (Distributed by Bechtel):
T. Heironimus (1C/1E)
A. Temeshy (1C/1E)
B. Coleman (1C/1E)
PDCC (1C/1E)

OTHER (Distributed by Bechtel):
J. Broderick, RWQCB (1C/1E)
J. Kitka, El Toro (1C/1E)
R. Woodings, RAB Co-Chair (1C/1E)
N. Moutoux, U.S. EPA (2C/2E)
J. Christopher, DTSC (1C/1E)
T. Mahmoud, Cal-EPA (2C/2E)
Commander, Miramar (1C/1E)
M. Rudolph, El Toro RAB (1C/1E)
S. Malloy, IRWD (1C/1E)
R. Herndon, OCWD (1C/1E)
D. Jung, City of Irvine (1C/1E)

O - Original Transmittal Sheet
C - Copy Transmittal Sheet
E - Enclosure

Date/Time Received

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> John P. Christopher, Ph.D., Staff Toxicologist DTSC</p> <p><b>To:</b> Tayseer Mahmoud DTSC</p> <p><b>Date:</b> April 7, 2004</p>	<p style="text-align: right;"><b>CLEAN 3 Program</b> <b>Contract No. N-68711-95-D-7526</b> <b>CTO-0045</b> <b>File Code: 0232</b></p>
<p><b><u>GENERAL COMMENTS</u></b></p> <p>This is a well written technical memorandum. After two teleconferences with the Navy and their contractors, we were able to concur in most their findings presented in this document. Although the Navy seems to have made the best use of the most recent soil gas data collected in calculating exposure point concentrations, we would have preferred soil gas data collected from shallower locations. The subject of depth of sampling is not adequately treated in the text. Estimates of risk and hazard must be recalculated for both residents, in order to take into account an average temperature for California soils recommended by DTSC. Recalculations are required for the workers because of the soil temperature and the use of an incorrect value for inhalation rate.</p>	<p><b><u>RESPONSES TO GENERAL COMMENTS</u></b></p> <p><b>RESPONSE:</b> The Navy would like to thank DTSC for its prompt review and comment of the technical memorandum, and in particular, working with the Navy via telephone conference calls to address most issues. The remaining issues listed in this general comment are also reiterated in DTSC's specific comments below, along with the Navy's response to each.</p> <p>With respect to the subject of sampling depth, please note that data used in the risk evaluation, including confirmation soil gas sampling depths at Sites 16 and 24, were previously approved by the BCT (see Section 1 of the technical memorandum). The subject of depth and how it impacts the air modeling results will be further explained in a new uncertainty section to be included in the technical memorandum (see response to specific comment 5).</p> <p>The soil temperature recommended by DTSC has been used in the air modeling. (See response to specific comment 3).</p>
<p><b><u>SPECIFIC COMMENTS</u></b></p> <p>1. <b>Depth of Sampling:</b> Table 3 notes that the location below ground surface (bgs) of the shallowest detection of a chemical of concern was taken for modeling purposes to be the location of that chemical of concern. However, we require clarifying text on this subject, because the Navy's approach is rather unusual. We understand that some samples were collected from as deep as 160 feet below ground surface (bgs) at Site 16, while others were as shallow as 15 ft bgs at Site 24. The depth used for calculating the exposure point concentration (EPC) of each chemical of concern should be included in Table 1, and a more complete description of the treatment of depth should be included, perhaps by adding a Section 3.4 on this topic.</p>	<p><b><u>RESPONSES TO SPECIFIC COMMENTS</u></b></p> <p><b>RESPONSE 1:</b> Estimation of indoor air concentrations was a two-step process. The first step (Section 4.2 of the technical memorandum) consisted of calculating exposure point concentrations (EPCs) in soil gas. Depth is not a component of the soil gas EPC calculations, and concentrations of samples collected at all depths were evaluated. This is conducted in accordance with the Risk Assessment Guidance for Superfund: Part A (U.S. EPA 1989) and supporting documents and guidelines published by the California Environmental Protection Agency (Cal/EPA 1992).</p> <p>The second step (Section 4.3 of the technical memorandum) consists of estimating indoor air EPCs based on the soil gas EPCs calculated from Step 1. The Johnson and Ettinger model (U.S. EPA 2003) was used to estimate indoor</p>

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> John P. Christopher, Ph.D., Staff Toxicologist DTSC</p> <p><b>To:</b> Tayseer Mahmoud DTSC</p> <p><b>Date:</b> April 7, 2004</p>	<p><b>CLEAN 3 Program</b> Contract No. N-68711-95-D-7526 CTO-0045 File Code: 0232</p>																														
<p>From the spreadsheets the Navy kindly provided, we did discern the following depths used for calculation of EPCs:</p> <p style="text-align: center;"><b>Depth of Shallowest Contamination in Soil Gas at IRP Sites 16 and 24, MCAS El Toro</b></p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px auto;"> <thead> <tr> <th style="text-align: center;">Contaminant</th> <th style="text-align: center;">Site 16 (ft)</th> <th style="text-align: center;">Site 24 (ft)</th> </tr> </thead> <tbody> <tr><td>Carbon Tetrachloride</td><td style="text-align: center;">-</td><td style="text-align: center;">34</td></tr> <tr><td>Chloroform</td><td style="text-align: center;">-</td><td style="text-align: center;">34</td></tr> <tr><td>1,2-Dichloroethane</td><td style="text-align: center;">-</td><td style="text-align: center;">57</td></tr> <tr><td>1,1-Dichloroethylene</td><td style="text-align: center;">-</td><td style="text-align: center;">34</td></tr> <tr><td>Tetrachloroethylene</td><td style="text-align: center;">-</td><td style="text-align: center;">34</td></tr> <tr><td>1,1,2-Trichloroethane</td><td style="text-align: center;">-</td><td style="text-align: center;">34</td></tr> <tr><td>Trichloroethylene</td><td style="text-align: center;">145</td><td style="text-align: center;">15</td></tr> <tr><td>Trichlorofluoromethane (Freon 11)</td><td style="text-align: center;">145</td><td style="text-align: center;">-</td></tr> <tr><td>1,1,3-Trichloro-1,2,2-trifluoroethane (Freon 113)</td><td style="text-align: center;">145</td><td style="text-align: center;">15</td></tr> </tbody> </table>	Contaminant	Site 16 (ft)	Site 24 (ft)	Carbon Tetrachloride	-	34	Chloroform	-	34	1,2-Dichloroethane	-	57	1,1-Dichloroethylene	-	34	Tetrachloroethylene	-	34	1,1,2-Trichloroethane	-	34	Trichloroethylene	145	15	Trichlorofluoromethane (Freon 11)	145	-	1,1,3-Trichloro-1,2,2-trifluoroethane (Freon 113)	145	15	<p>air EPCs. The soil gas EPCs were used as input to the Johnson and Ettinger model, which accepts only one depth for each soil gas EPC. The depth used in the data entry worksheet of the model was the depth of the shallowest detected result, as indicated in Table 3 of the technical memorandum.</p>
Contaminant	Site 16 (ft)	Site 24 (ft)																													
Carbon Tetrachloride	-	34																													
Chloroform	-	34																													
1,2-Dichloroethane	-	57																													
1,1-Dichloroethylene	-	34																													
Tetrachloroethylene	-	34																													
1,1,2-Trichloroethane	-	34																													
Trichloroethylene	145	15																													
Trichlorofluoromethane (Freon 11)	145	-																													
1,1,3-Trichloro-1,2,2-trifluoroethane (Freon 113)	145	15																													
<p><b>2. Individual Analytical Data:</b> The absence of individual analytical data prevents us from verifying either the depths of exposure point concentrations or the bootstrapping procedures for estimating 95% upper confidence limits on mean concentrations values. Please include a table with the individual analytical data for all detected volatile chemicals at Sites 16 and 24, showing depth of sampling, sample quantitation limit, detected value (or “less than”), and qualifiers.</p>	<p><b>RESPONSE 2:</b> Analytical data and the requested associated information (sample depth, sample quantitation limit, result or “less than” value, and qualifiers) will be included as an attachment to the technical memorandum.</p>																														
<p><b>3. Site-Specific Values:</b> Please make two corrections to Table 3. First, refer to the specific document(s) in which site-specific measurements were reported. Second, as we learned in today’s teleconference, the values for water-filled porosity are not USEPA</p>	<p><b>RESPONSE 3:</b> References for site-specific data used for air modeling at Sites 16 and 24 will be included in Table 3. Table 3 will also be corrected to indicate site-specific data were used to select water-filled porosity values.</p>																														

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> John P. Christopher, Ph.D., Staff Toxicologist DTSC</p> <p><b>To:</b> Tayseer Mahmoud DTSC</p> <p><b>Date:</b> April 7, 2004</p>	<p><b>CLEAN 3 Program</b> <b>Contract No. N-68711-95-D-7526</b> <b>CTO-0045</b> <b>File Code: 0232</b></p>													
<p>defaults but are site-specific measurements, so please correct the table. Second, use 20°C for the average soil temperature. This is value recommended by DTSC for California soils. Using this value will necessitate a recalculation of all the risk and hazard values, but the recalculated values will not affect the conclusions.</p>	<p>At DTSC request, an average soil temperature of 20°C has been used in the air modeling. We would also like to bring to DTSC's attention that upon review/verification of the site-specific information, additional soil porosity data that were not considered in the initial Johnson and Ettinger modeling were found in reports for Sites 16 and 24. As a result, soil porosity values for the sites presented in Table 3 (Air Modeling Input Parameters) have been revised as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 35%;">Residential</th> <th style="width: 35%;">Industrial</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Total porosity (cm<sup>3</sup>/cm)</td> <td>Site 16: 0.32 (BNI 1998)</td> <td>Site 16: 0.32 (BNI 1998)</td> </tr> <tr> <td>Site 24: 0.32 (BNI 1998)</td> <td>Site 24: 0.32 (BNI 1998)</td> </tr> <tr> <td rowspan="2">Soil water-filled porosity</td> <td>Site 16: 0.2355 (BNI 1997; BNI 1998)</td> <td>Site 16: 0.2355 (BNI 1997; BNI 1998)</td> </tr> <tr> <td>Site 24: 0.1767 (BNI 1998)</td> <td>Site 24: 0.1767(BNI 1998)</td> </tr> </tbody> </table> <p>(Note: BNI 1997 Draft Final Phase II Remedial Investigation Report, OU-3A Sites, MCAS El Toro was not referenced in the technical memorandum, but will be added).</p> <p>Johnson and Ettinger modeling has been re-run for Sites 16 and 24 using the 20°C soil temperature requested by DTSC and the revised soil porosity values shown above. The revised indoor air EPCs were then used to recalculate residential and industrial worker risks. The revised risk estimates for both sites are shown in the revised Table 6 for the technical memorandum.</p>		Residential	Industrial	Total porosity (cm <sup>3</sup> /cm)	Site 16: 0.32 (BNI 1998)	Site 16: 0.32 (BNI 1998)	Site 24: 0.32 (BNI 1998)	Site 24: 0.32 (BNI 1998)	Soil water-filled porosity	Site 16: 0.2355 (BNI 1997; BNI 1998)	Site 16: 0.2355 (BNI 1997; BNI 1998)	Site 24: 0.1767 (BNI 1998)	Site 24: 0.1767(BNI 1998)
	Residential	Industrial												
Total porosity (cm <sup>3</sup> /cm)	Site 16: 0.32 (BNI 1998)	Site 16: 0.32 (BNI 1998)												
	Site 24: 0.32 (BNI 1998)	Site 24: 0.32 (BNI 1998)												
Soil water-filled porosity	Site 16: 0.2355 (BNI 1997; BNI 1998)	Site 16: 0.2355 (BNI 1997; BNI 1998)												
	Site 24: 0.1767 (BNI 1998)	Site 24: 0.1767(BNI 1998)												

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> John P. Christopher, Ph.D., Staff Toxicologist DTSC</p> <p><b>To:</b> Tayseer Mahmoud DTSC</p> <p><b>Date:</b> April 7, 2004</p>	<p><b>CLEAN 3 Program</b> <b>Contract No. N-68711-95-D-7526</b> <b>CTO-0045</b> <b>File Code: 0232</b></p>																			
<p><b>4. Inhalation Rate for Workers:</b> In Table 2 the Navy shows 0.83 m<sup>3</sup>/hr as the inhalation rate for workers. Recommended defaults from both USEPA and DTSC are 20 m<sup>3</sup>/day or 2.5 m<sup>3</sup>/hr or for workers. Thus, all the Navy's estimates of risk and hazard for workers are too low by a factor of 3. Please recalculate estimates of risk and hazard for workers.</p>	<p><b>RESPONSE 4:</b> For the industrial worker scenario, the Navy used the U.S. EPA inhalation rate of 20 m<sup>3</sup>/day, adjusted to an exposure duration of 8 hours/work day (i.e., 0.83 m<sup>3</sup>/hr).</p> <p>Per DTSC request, the industrial worker risk estimates have been recalculated using the 2.5 m<sup>3</sup> per hour inhalation rate, and are compared to the risk estimates presented in the technical memorandum that are based on the 0.83 m<sup>3</sup>/hr inhalation rate. As shown below, use of this higher rate does not result in a significant increase in the risk estimates.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">Site</th> <th style="text-align: center;">Inhalation Rate (m<sup>3</sup>/hr)</th> <th style="text-align: center;">U.S. EPA Cancer Risk</th> <th style="text-align: center;">Cal/EPA Cancer Risk</th> <th style="text-align: center;">Hazard Index</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">16</td> <td style="text-align: center;">0.83</td> <td style="text-align: center;">1.5E-07</td> <td style="text-align: center;">2.6E-09</td> <td style="text-align: center;">1.0E-04</td> </tr> <tr> <td style="text-align: center;">2.5</td> <td style="text-align: center;">4.4E-07</td> <td style="text-align: center;">7.7E-09</td> <td style="text-align: center;">3.1E-04</td> </tr> <tr> <td style="text-align: center;">24</td> <td style="text-align: center;">0.83</td> <td style="text-align: center;">3.3E-07</td> <td style="text-align: center;">1.3E-08</td> <td style="text-align: center;">3.1E-04</td> </tr> </tbody> </table>	Site	Inhalation Rate (m <sup>3</sup> /hr)	U.S. EPA Cancer Risk	Cal/EPA Cancer Risk	Hazard Index	16	0.83	1.5E-07	2.6E-09	1.0E-04	2.5	4.4E-07	7.7E-09	3.1E-04	24	0.83	3.3E-07	1.3E-08	3.1E-04
Site	Inhalation Rate (m <sup>3</sup> /hr)	U.S. EPA Cancer Risk	Cal/EPA Cancer Risk	Hazard Index																
16	0.83	1.5E-07	2.6E-09	1.0E-04																
	2.5	4.4E-07	7.7E-09	3.1E-04																
24	0.83	3.3E-07	1.3E-08	3.1E-04																
<p><b>5. Uncertainties:</b> Section 7 of the current document, entitled "Discussion", present brief mention of uncertainties due to the current status of the USEPA's cancer slope factor for TCE. We find this to be an incomplete discussion of the uncertainties of the Navy's estimates of risk and hazard. HERD believes that using soil gas data from 100 ft bgs and greater while assuming physical and chemical conditions are uniform in the overlying column of soil introduces significant uncertainties to the already uncertain estimates of the Johnson &amp; Ettinger models. The Navy should present a separate section of text with enough clarifying detail to constitute an honest acknowledgment of the uncertainties inherent in the estimates of risk and hazard, both in the concentration term and in the models themselves.</p>	<p><b>RESPONSE 5:</b> In response to DTSC's comment, a new uncertainty section (new Section 8, "Uncertainty Discussion") has been added to the technical memorandum. It is attached to this response-to-comments table for reference.</p> <p>The Navy recognizes that the soil is not completely homogeneous. However, based on the substantial amount of site-specific data evaluated for use in the Johnson and Ettinger model, the Navy believes that soil properties used as input accurately represent soil conditions.</p>																			

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> John P. Christopher, Ph.D., Staff Toxicologist DTSC</p> <p><b>To:</b> Tayseer Mahmoud DTSC</p> <p><b>Date:</b> April 7, 2004</p>	<p><b>CLEAN 3 Program</b> <b>Contract No. N-68711-95-D-7526</b> <b>CTO-0045</b> <b>File Code: 0232</b></p>
<p><b>6. Risk Characterization for Potential Future Residents:</b> Although using the correct value for average soil temperature will cause slight increases in the air concentrations and consequent risks and hazards compared to those reported here, we concur with the Navy that cancer risks for potential future residents at Sites 16 and 24, respectively, are 2 E-5 and 4 E-5 using the USEPA cancer slope factors, and 4 E-7 and 2 E-6 using Cal/EPA cancer slope factors. The difference between the two sets of estimates is due to the approximately twentyfold difference in the cancer slope factors for TCE. Three of four of these values are higher than the “point of departure” of 1 E-6 but within the “risk management range” of 1 E-6 to 1 E-4, as described in the National Contingency Plan. Cumulative hazard indices for non-carcinogenic toxic effects fall below the benchmark of 1.0 for both sites.</p>	<p><b>RESPONSE 6:</b> As noted in the response to specific comment 3, a soil temperature of 20°C has been used in the air modeling.</p>
<p><b>7. Risk Characterization for Potential Future Workers:</b> HERD feels that the risk and hazard for workers are underestimated by about threefold, because of the use of an incorrect value for inhalation rate. After recalculation, the correct estimates for cancer risk for Sites 16 and 24, respectively, will be 3 E-6 and 5 E-6 using the USEPA cancer slope factors, and less than the benchmark of 1 E-6 using Cal/EPA cancer slope factors. Cumulative hazard indices for non-carcinogenic toxic effects fall below the benchmark of 1.0 for both sites.</p>	<p><b>RESPONSE 7:</b> Please refer to response to specific comment 4.</p>
<p><b>CONCLUSION AND RECOMMENDATIONS</b></p> <p>The technical memorandum can be made acceptable upon adequate responses to these four recommendations:</p>	
<p><b>1. The subject of depth of sampling requires more treatment in the text.</b></p>	<p><b>RESPONSE 1:</b> Please refer to responses to comments 1 and 5. A new uncertainty section added to the technical memorandum discusses the subject of</p>

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<b>Originator:</b> John P. Christopher, Ph.D., Staff Toxicologist DTSC  <b>To:</b> Tayseer Mahmoud DTSC  <b>Date:</b> April 7, 2004	<b>CLEAN 3 Program</b> <b>Contract No. N-68711-95-D-7526</b> <b>CTO-0045</b> <b>File Code: 0232</b>
	sampling depth.
<b>2. The Navy should supply individual analytical data on contaminants in soil gas.</b>	<b>RESPONSE 2:</b> Please refer to response to comment 2; analytical data will be provided as an attachment to the technical memorandum. Also, an electronic file of the analytical data was sent to the DTSC toxicologist on 7 April 2004.
<b>3. The Navy should add a section describing uncertainties in their estimates of risk and hazard.</b>	<b>RESPONSE 3:</b> Please refer to response to comment 5. A new uncertainty section will be added to the technical memorandum.
<b>4. The document requires a separate section of text to describe uncertainties in the modeling of concentrations in indoor air and in the estimates of risk and hazard.</b>	<b>RESPONSE 4:</b> Please refer to response to comment 5.

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> Nicole Moutoux, Remedial Project Manager U.S. EPA Region IX</p> <p><b>To:</b> Content Arnold, Remedial Project Manager U.S. Navy SWDIV</p> <p><b>Date:</b> Comment provided via e-mail dated April 9, 2004</p>	<p style="text-align: right;"><b>CLEAN 3 Program</b> Contract No. N-68711-95-D-7526 CTO-0045 File Code: 0232</p>
<p><b><u>GENERAL COMMENT</u></b></p> <p>I have a comment that you all have seen many times before and it relates to your use of the "risk range" in the NCP as a rationale for acceptable risk. It is stated in the text of the tech memo that the indoor air risk calculated is acceptable because it falls within the "risk range" specified in the NCP. EPA's position is that the point of departure for risk is 1E-6. If the risk is less than 1E-6 then cleanup is not required. If the risk is 1E-4 or greater cleanup is required. If it falls in the range of 1E-4 to 1E-6, the risk MAY be acceptable depending on site specific factors, reuse, etc. It is not appropriate rationale to determine that the risk is acceptable just because it is in the "risk range". I have made this comment consistently on numerous previous documents, most recently the Expanded Site Investigation for Anomaly Area 3 issued a couple of months ago. Please address this issue when you revise the tech memo.</p>	<p><b><u>RESPONSE</u></b></p> <p>Three areas of the technical memorandum will be revised slightly per the EPA comment. The first revision affects the first paragraph of Section 7, which has been modified as follows:</p> <p><i>"Table 6 summarizes total lifetime cancer and noncancer risks associated with indoor-air exposure under residential and industrial worker scenarios at Sites 16 and 24. As shown, U.S. EPA cancer risks at both sites are acceptable (i.e., less than the 10<sup>-6</sup> point of departure for acceptable risk specified in the National Oil and Hazardous Substances Pollution Contingency Plan [NCP]), or fall within the 10<sup>-6</sup> to 10<sup>-4</sup> range for risk that may be acceptable depending on site-specific and other factors considered appropriate for risk point-of-departure analysis (per NCP Preamble). Likewise, Cal/EPA cancer risks are also acceptable. The difference in the U.S. EPA and Cal/EPA estimated total cancer risks is largely attributable to differing CSFs for TCE recognized by the two agencies".</i></p> <p>The second revision affects the first sentence of the first paragraph in Section 9, which will be modified as follows:</p> <p><i>"On the basis of the modeled risk evaluation results presented in this TM, Sites 16 and 24 do not pose unacceptable risks to human health via an indoor air inhalation exposure pathway, because risks are acceptable or may be acceptable depending on site-specific and other factors considered appropriate for risk point-of-departure analysis, per the NCP".</i></p>

**RESPONSE TO COMMENTS  
DRAFT TECHNICAL MEMORANDUM,  
SITES 16 & 24 INDOOR AIR RISK EVALUATION  
FORMER MARINE CORPS AIR STATION, EL TORO, CALIFORNIA**

<p><b>Originator:</b> Nicole Moutoux, Remedial Project Manager U.S. EPA Region IX</p> <p><b>To:</b> Content Arnold, Remedial Project Manager U.S. Navy SWDIV</p> <p><b>Date:</b> Comment provided via e-mail dated April 9, 2004</p>	<p style="text-align: right;"><b>CLEAN 3 Program</b> Contract No. N-68711-95-D-7526 CTO-0045 File Code: 0232</p>
	<p>The third revision affects the second bullet in Section 9, which has been modified as follows:</p> <ul style="list-style-type: none"><li>• <i>“Total cancer risks at Sites 16 and 24 estimated using both U.S. EPA and Cal/EPA toxicity criteria for residential and industrial scenarios are acceptable, or fall within the 10<sup>-6</sup> to 10<sup>-4</sup> risk range that may be acceptable depending on site-specific and other factors considered appropriate for risk management decisions”.</i></li></ul> <p>(As an administrative note, per DTSC comments, Section 7 of the technical memorandum is now retitled “Risk Summary” and an uncertainty section (new Section 8, titled “Uncertainty Discussion”) has been added.)</p>