

**RESPONSES TO COMMENTS ON THE DRAFT CLOSURE APPROACH TECHNICAL MEMORANDUM FOR THE J-LINE SECTION OF INSTALLATION RESTORATION SITE 14, MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA**

The table below contains the responses to regulatory agency comments for the “Draft Closure Approach Technical Memorandum for the J-Line Section of Installation Restoration Site 14, Mare Island Naval Shipyard, Vallejo, California.” This document was prepared by ChaduxTt, a joint venture of St. George Chadux Corp. and Tetra Tech EM Inc., and was submitted to the agencies on June 11, 2009. The comments addressed below were received from the California Department of Toxic Substances Control (DTSC) and the U.S. Environmental Protection Agency (EPA) during the period of June 12, 2009 through August 19, 2009. The California Regional Water Quality Control Board (Water Board) notified the Navy that it would not be providing comments and instead would defer to DTSC and EPA for this document. Throughout this table, *italicized* text represents additions to the document and ~~strikeout~~ text indicates deletions. Also throughout this table, references to page, section, table, and figure numbers pertain to the final version of the document unless indicated otherwise.

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<b>Responses to Comments from the DTSC (Janet Naito, August 10, 2009)</b>			
<b>GENERAL COMMENTS</b>			
1.		Based upon discussions in this Technical Memorandum, it appears that the intent is not to address releases encountered in the J-Line area from sources other than the J-Line. Therefore, in the discussion within section 4.2 through 4.2.2, please clarify how other releases noted in the text will be addressed.	<p>The following text was added to Section 1.0:</p> <p><i>The J-Line study boundary includes an area of 20 feet on either side of the industrial wastewater line, which overlaps a portion of Installation Restoration Site 04 (IR04). As summarized in Section 4.2, the Navy compiled and evaluated historical soil and groundwater data within this study area to develop the closure approach. The remedial investigation (RI) for IR04 will address potential releases not related to the J-Line.</i></p> <p>The following text was added to Section 4.2:</p> <p><i>A portion of the J-Line overlaps IR04; therefore, potential releases in this overlap region that are not related to historical activities of the J-Line will be addressed in the RI report for IR04.</i></p> <p>The following text was added to Section 4.2.1:</p> <p><i>The surficial TPH found at sample location IR04GB312 will be addressed in the RI report for IR04.</i></p> <p>The following text was added to Section 4.2.2:</p> <p><i>Area groundwater will be addressed in the RI report for IR04.</i></p>

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2.		If industrial screening criteria are deemed appropriate for use, DTSC would need to enter into a land use covenant to restrict the use of the J-Line area to commercial/industrial purposes prior to closure of the area. If abrasive blast materials (ABM) are left in place, this will also need to be addressed in the land use covenant and operation and maintenance requirements for the J-Line area.	This comment will be taken into consideration when the J-Line closure report is prepared.
3.		Please clarify whether Building 900 and Building 1300 were used after 1982. If they were, please clarify what they were used for.	Section 2.1 has been revised as follows:  The Navy took pump station 8 out of commission and removed it <i>after operations ceased in Buildings 900 and 1300, in approximately 1992; the buildings have not been used since 1992 in 1982 after 10 years of service.</i> The J-Line was also taken out of commission at this time <del>because the buildings in the vicinity that contributed wastewater to the IW collection system ceased operations.</del>
<b>SPECIFIC COMMENTS</b>			
4.		<b>Page 2, bullet 2 and Page 13, bullet 2.</b> The Final Closure Certification Report addressing the interior of the J-Line segment of IR04 indicates that the J-1 line consists of a 4" cast iron pipe between Building 900 and manhole MH-J-1-3 and an 8" vitrified clay pipe between MH-J-1-3 and former pump station 8. This is not consistent with the discussion of the line in this report. Please clarify which is correct and update the text, as appropriate. It would also be useful to clarify that the 4" cast iron pipe between Building 900 and manhole MH-J-1-3 was removed due to thick, hardened accumulations of solids.	The second bullets on Page 2 and Page 13 have been revised as follows:  • J-1 Line: <del>290300 feet of a 4-inch gravity drain line, divided made of east iron pipe or vitrified clay pipe; extends from Building 900 to the former pump station 8 and is broken down into four subsegments (A, B, C, and D), which extends from Building 900 to the former pump station 8.</del>  - <i>Subsegment A: formerly 25 feet of 4-inch cast iron pipe between Building 900 and manhole MH-J-1-3 (removed in 2008).</i>

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4. (con't)			<ul style="list-style-type: none"> <li>- <i>Subsegment B: 175 feet of 8-inch vitrified clay pipe between MH-J-1-3 and MH-J-1-2.</i></li> <li>- <i>Subsegment C: 65 feet of 8-inch vitrified clay pipe between MH-J-1-2 and MH-J-1-1.</i></li> <li>- <i>Subsegment D: 25 feet of 8-inch vitrified clay pipe between MH-J-1-1 and former pump station 8.</i></li> </ul> <p>The following italicized text has been added to Section 4.1.9:  A short segment (25 feet) of the J-1 Line (subsegment A) was removed along with 8 cubic yards of SBM (Figure 3). Six soil samples were collected <i>along the former subsegment A</i> and analyzed after the SBM had been removed. <i>Soil samples were tested for polychlorinated biphenyls (PCB), semivolatile organic compounds (SVOC), and metals. None of the samples had concentrations above the industrial regional screening levels (RSL) (EPA 2009).</i> The J, J-1, and J-2 Lines were all cleaned and flushed. Analysis of the final rinsate showed that cleaning and flushing were effective. The J-1 Line and a small portion of the main J-Line were video logged to establish the general condition of the lines. <i>Subsegment A was not videologged before it was removed because of a significant accumulation of hardened material thought to be paint or paint debris.</i></p>
5.		<p><b>Pages 3 and 4, Section 3.2, Geology.</b></p> <p>a. Based upon reports prepared for IR04, ABM was used during sandblasting operations to remove old paint and prepare surfaces for new paint from at least the 1930s through the 1980s. The reports state that the ABM most commonly used at Mare Island was Green Diamond (a nickel slag, aka greensand) and that Monterey Sand (a silica sand) and Kleen Blast (a copper slag) were also used. Several products used as ABM look like black sand (e.g., garnet and coal abrasives). Therefore, please describe all sand units encountered during previous investigations conducted in the area being used to define the J-Line and determine whether there could be other forms of ABM other than green sands present.</p>	<p>a. The following text has been added to Section 3.2:  <i>Of all the sandblast material used at Mare Island, greensand is the only material known to have been placed in utility corridors (Tetra Tech 1999).</i></p> <p>Of the six borings with the highest chromium concentrations, two borings (005 and 012) reported greensand, two borings (014 and 016) reported dark greenish gray to dark gray sand, and two borings (011 and 015) reported a sand.</p>

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5. (con't)		b. Please clarify how the 0.2 foot width (2.4 inches) of greensand layer was determined. It is unclear why this layer wouldn't extend completely below the pipeline.	<p>b. This information was taken from prior reports. In response to this comment, the boring logs along the J-Line were reviewed in detail, and the text in Section 3.2 was revised as follows:</p> <p><i>In eight borings along the J-Line (14GB056, 14VB005, 14VB011, 14VB012, 14VB013, 14VB014, 14VB015, 14VB016), greensand or sand suspected to be or contain greensand was used as bedding around the utility line in widths from 0.2 to 2.2 feet (Table 1 and Figure 3). In five borings along the J-Line, a narrow layer of greensand approximately 0.2 foot in width was encountered near the utility line. Greensand was present in lesser quantities in three other borings (14VB004, 14VB007, 14VB009) along the J-Line (Table 1 and Figure 3).</i></p> <p>Please also see the response to DTSC specific comment 9a.</p>
6.		<b>Pages 6 and 7.</b> It would be useful to explain the events that led to the data gaps sampling described in Section 4.1.6, since section 4.1.4, Draft RI Report, Operable Unit Number 3, 1996, states that the report concluded that characterization of the J-Line and former pump station 8 was adequate and no further samples were recommended.	<p>Section 4.1.5 currently states:</p> <p>These data were collected as part of the characterization of IR04; however, they were included in the J-Line data set as part of the chemical characterization because of their proximity to the J-Line.</p>
7.		<b>Page 7, Section 4.1.7, Human Health Risk and Ecological Assessment of Greensand, 1999.</b> It has been ten years since this analysis has been completed. It would be useful to conduct an analysis to determine whether any additional information, changes in exposure parameters, changes in toxicological information, or changes in risk assessment methodology would significantly change the results.	<p>The following text has been added to Section 4.1.7:</p> <p><i>An addendum to the greensand technical memorandum was prepared in 2002 (Tetra Tech 2002b). This addendum updated and applied the original human health risk assessment of greensand to the Mare Island Elementary School. This assessment found that for a resident, the cancer risk posed by greensand was <math>6 \times 10^{-6}</math> with a hazard index of 0.9. The cancer risk for the resident is the total of the cancer risk for the adult and child receptors; the hazard index for the resident is the hazard index for the child receptor.</i></p>

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8.		<p><b>Page 8, first full paragraph.</b> Video logging information is being used to pinpoint the location of pipe breaks so that sampling can be conducted in the J-1 line adjacent to these locations. Although the Closure Report for the interior J-Lines did not specify the location of the pipeline joints or the length of pipe sections, please clarify whether this information could be ascertained from the video logging conducted. If this information cannot be determined from the video logging, it may be necessary to uncover the pipelines in order to sample adjacent to the pipeline separations.</p>	<p>The following text has been added to Section 4.1.9:  <i>After further review by the Navy of the video survey for the J-1 Line, the pipeline sections were found to be 5 feet long; the locations of these joints were added to Figure 4.</i></p> <p>The proposed sampling was also adjusted based on this information, as discussed in the response to DTSC specific comment 12a.</p>
9.		<p><b>Page 9, Section 4.2, Data Summary and Evaluation of Previous Investigations.</b></p> <p>a. The data set will need to be evaluated in several different ways as the different criteria proposed for screening purposes were calculated based upon different methodologies. For example, the comparison to background will require comparison of the 95th percentiles. The comparison to industrial screening criteria will require calculation of a 95% UCL of the mean concentration. In each of these, a test for outliers should be performed. If outliers are found in the data set, they must be addressed before calculating the comparison concentration. The comparison concentration should then be calculated in the same manner as the screening value. This comment will affect the discussion in the subsequent subsections.</p> <p>b. Based upon spot checking of the lithologic logs, it does not appear that ABM was targeted for analysis. Therefore, any assessment of risk based upon the current data set would likely underestimate the potential risk posed by ABM. To address this, it would be useful to:</p> <ol style="list-style-type: none"> <li>i. Prepare a table showing for each boring the depths at which sands were encountered and the depths at which samples were collected.</li> <li>ii. Compare data by lithologic unit to determine whether there is a correlation between lithologic type and concentrations.</li> <li>iii. Soil and groundwater samples were analyzed for total chromium. Please clarify whether there is a potential for hexavalent chromium to have been present in this area.</li> </ol>	<p>a. In this technical memorandum, each result for a soil sample was compared with the associated industrial screening criterion from the EPA Regional Screening Level (RSL) table (EPA 2009a), the Mare Island total petroleum hydrocarbon (TPH) screening criteria (SulTech 2006), and the Mare Island soil ambient concentrations (Tetra Tech 2002c). There were only seven results above these criteria: six soil concentrations above the 1,400 milligrams per kilogram (mg/kg) chromium RSL, and one above the 1,000 mg/kg motor oil screening criterion. Although a more detailed evaluation is possible, it is unlikely to change this result; however, this comment will be taken into consideration when the J-Line Closure Report is prepared.</p> <p>b (i and ii). A new Table 1 was prepared and focuses on J-Line borings that contained greensand, sand characterized with a greenish color, or sand collocated with elevated concentrations of chromium. This table also summarizes key information by boring on the J-Line pipeline depth, depth to groundwater, key lithologic intervals, lithologic descriptions, sample depth, and the chromium concentration for each sample. As shown in the new Table 1, greensand or sand suspected to be or contain greensand was found in 11 borings. At least one sample was collected in each of these borings within an interval where greensand or sand suspected to be or contain greensand was described in the lithologic boring log. This information is presented in greater detail in the new Table 1.</p>

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9. (con't)		<p>c. Please clarify whether any voids in the backfill material were noted.</p> <p>d. <b>Page 9, Paragraph 1, 3rd to last sentence.</b> Please verify that the reference to "(Tetra Tech 2002b)" is correct for the source of the ambient groundwater criteria.</p> <p>e. <b>Page 11, Section 4.2.2.</b> The groundwater data presented is from 1993 and 1994. It would be useful to determine what concentrations are currently present in the groundwater. To avoid the problem of fines impacting the groundwater sample, it would be useful to install temporary monitoring wells to gather this information. Although shallow groundwater is expected to flow toward the northeast to discharge into Mare Island Strait, there may be local variations based upon nearby features such as the berths. Based upon the data provided, it is unclear whether sufficient monitoring has been conducted downgradient of IR14BG157 and IR14GB061 to define the extent of chromium concentrations in this zone.</p>	<p>b (iii). Hexavalent chromium was not suspected in the J-Line or in the greensand. The regulatory agencies requested analysis for hexavalent chromium because of the higher total chromium concentrations found in greensand. One J-Line soil sample was analyzed for hexavalent chromium (14VB420 from 3.75 to 4.42 feet below ground surface [bgs]), and hexavalent chromium was not detected. Additionally, greensand samples were tested for hexavalent chromium as part of the IR04 and IR14 investigations, and the results were presented in the greensand technical memorandum (Tetra Tech 1999). The technical memorandum summarized that 17 soil samples were tested for hexavalent chromium, and all of the results were not detected.</p> <p>c. No significant voids in the backfill material were noted.</p> <p>d. The references for the onshore ecological risk assessment (Tetra Tech 2002a) and the ambient soil and groundwater criteria (Tetra Tech 2002c) were correctly listed throughout the text; however, the two documents were reversed in the reference list. This error was corrected in the final document.</p> <p>e. The following text was added to Section 4.2.2:  <i>These findings are consistent with the greensand technical memorandum, which concluded that groundwater data and the results of the offshore ERA do not indicate that constituents from greensand are migrating in groundwater along the lines or laterally outside utility corridors at concentrations that would pose significant risk to ecological receptors (Tetra Tech 1999).</i></p> <p>The groundwater samples within the J-Line study area that were analyzed for metals were collected from 1993 to 1994. These grab groundwater samples were collected from direct-push borings, which tended to yield turbid samples. Grab groundwater samples are not representative of site conditions because contaminants absorb to suspended solids typical of turbid, unfiltered groundwater.</p>

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9. (con't)			<p>In this case, it may also be helpful to evaluate whether groundwater has been affected at IR04, the source of the greensand found in J-Line backfill. IR04 is under remedial investigation, and the groundwater at this site has been evaluated using more recent and more representative data (SulTech 2006). Three wells at IR04 (04W01, 04W02, 04W03) were sampled for five different quarters in 1999 and 2000 using low-flow groundwater sampling methods, which have permitted collection of low-turbidity unfiltered samples.</p> <p>Of the 10 IR04 groundwater samples tested for chromium, only three yielded detected chromium results. These detected results varied between 6.5 and 43.1 micrograms per liter (<math>\mu\text{g/L}</math>). These detected chromium concentrations are below 74 <math>\mu\text{g/L}</math>, the EPA National Recommended Water Quality Criteria for chromium (EPA 2009b). This groundwater investigation also concluded that metals were not a concern in IR04 groundwater (SulTech 2006). Therefore, if IR04 groundwater is not affected by greensand in the source area, it is reasonable to conclude that J-Line groundwater has not been affected by the relatively smaller quantities of greensand present along the J-Line.</p> <p>Evaluation of J-Line groundwater is further discussed in the response to EPA general comment 3.</p>
10.		<p><b>Page 13, Paragraph 2.</b> It is not clear based upon the sampling data collected whether or not Pump Station 8 leaked. Groundwater flow is presumed toward the east to northeast (see section 3.3). Location IR14BG157 is located to the east of portions of the pump station and this location contained elevated levels of chromium.</p>	<p>Only one of the four borings surrounding the former pump station 8 contained chromium at a concentration above ambient levels in soil (14GB056). This boring is found directly south of the former pump station 8. A sample from this boring contained 660 mg/kg of chromium; however, this sample was also collected from a layer described as pale olive sand in the lithologic borelog and is suspected to be or to contain greensand (new Table 1). It should be noted that 660 mg/kg is below 1,400 mg/kg, the industrial EPA RSL (EPA 2009a).</p>

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11.		<p><b>Page 14, Section 5.2.1, State the Problem.</b></p> <p>a. In order for DTSC to concur with a no further action for environmental conditions determination, we would need to determine that there are no environmental conditions present within the investigation area that could pose a risk to public health or the environment. This would include releases from the J-lines and from other sources that may have impacted the investigation area.</p> <p>b. It would be useful to expand this discussion as green sand may not have been the only type of ABM used to backfill excavation areas. As green sands and sand units in general were not always targeted for sampling during previous investigations, it is not clear that sufficient characterization of these units has been completed. Additionally, until the site characterization is completed and the data is appropriately compared to screening levels, it is unclear whether the chemicals of concern are limited to chromium.</p> <p>c. Based upon the comments provided above, chemically-impacted groundwater underlying the J-lines may be of concern. Depth to groundwater is stated in Section 5.2.4 as being approximately 4 to 6 feet bgs and the J-lines are stated to be between 3 to 5 feet bgs. Therefore, releases from these lines could have occurred directly to groundwater. Sufficient information has not been provided to determine that this has been adequately evaluated.</p> <p>d. Based upon the responses to the comments provided above, changes may be required to subsequent subsections 5.2.2 through 5.2.7.</p>	<p>a. The following text has been added to Section 5.2.1: <i>Based on the greensand technical memorandum (Tetra Tech 1999), greensand in utility corridors does not pose a risk to public health or ecological receptors in the IR04 or IR14 area. A portion of the J-Line study area overlaps IR04. Potential IR04 sources, such as Buildings 900 and 1300, and potential surficial soil releases will be addressed in the RI report for IR04.</i></p> <p>b. The following text has been added to Section 5.2.1: <i>Of all the sandblast material used at Mare Island, greensand is the only material known to have been placed in utility corridors (Tetra Tech 1999).</i></p> <p>c. Since a number of soil samples were collected in the backfill adjacent to the J-Line, at the groundwater interface, and beneath the J-Line, it is unlikely that any impacts from the J-Line would exclusively be found in the groundwater and not in the soil. Only six of the 65 soil samples from the J-Line area contained chromium at concentrations above 1,400 mg/kg, the industrial EPA RSL (EPA 2009a). These elevated chromium levels are correlated in the lithology with greensand or sand suspected to be or contain greensand (new Table 1).</p> <p>d. No additional changes were necessary to Sections 5.2.2 through 5.2.7.</p>
12.		<p><b>Page 15, Section 5.2.3, Identify Information Inputs.</b></p> <p>a. As noted above, the video logging from J-1 should be reviewed to determine the pipeline lengths. This information is necessary to determine whether sampling every 45 feet is appropriate.</p> <p>b. As releases from leaking pipelines can spread laterally, vertically or both, depending upon conditions, it would be useful to sample at the pipeline joint locations. The lines could be uncovered at suspected locations to ensure that samples are correctly located to detect potential releases.</p>	<p>a and b. After further review by the Navy of the video survey for the J-1 Line, the pipeline sections were found to be 5 feet long; the locations of these joints were added to Figure 4. Based on this information, the number of soil sampling locations was adjusted to achieve one boring for every 20 feet of the J-1 and J-2 Lines. Existing sampling locations will be used along with additional proposed sampling locations to meet this criterion. The proposed sample locations will be placed preferentially next to the one offset or to the cracks or pipeline joints.</p>

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12. (con't)		c. Bullet 3. DTSC believes that the existing information should be reviewed and analyzed to determine whether additional sampling is required in areas previously investigated.	c. The existing information was reviewed and analyzed in Section 4.2. No additional data gaps were identified.
13.		<p><b>Pages 15 and 16, Section 5.2.4, Define the Boundaries of the Study.</b></p> <p>a. The study area includes the area within 20 feet of the IW line on either side. There are other sources that have the potential to impact this area. This needs to be adequately assessed and investigated as sampling has not been conducted to evaluate the width of the study area.</p> <p>b. The vertical definition should ensure that it extends to the base of the utility line backfill.</p>	<p>a. The following bullet was added to Section 5.2.4: <i>A portion of the J-Line area overlaps IR04. Potential sources other than the J-Line, such as Buildings 900 and 1300, and surficial soil releases will be addressed in the IR04 RI report.</i></p> <p>b. The following text has been added to Section 5.2.4: <i>The vertical boundary may be adjusted in the field based on presence of shallow groundwater nr deeper than expected backfill.</i></p>
14.		<p><b>Page 16, section 5.2.5, Develop the Analytic Approach.</b></p> <p>a. Please clarify why the soil sampling is limited to two samples per location.</p> <p>b. Please clarify why the soil sampling locations are limited to six per Line.</p> <p>c. Please specify the basis for the sampling depths proposed.</p> <p>d. Please ensure that the detection limits achievable by the analytical methods proposed are below their associated public health and ecological risk-based screening level</p> <p>e. Soil borings should be logged in accordance with DTSC's Drilling, Coring, Sampling and Logging at Hazardous Substance Release Sites Guidance (found at <a href="http://www.dtsc.ca.gov/SiteCleanup/upload/SMP_Drilling_Coring_Sampling_Logging.pdf">http://www.dtsc.ca.gov/SiteCleanup/upload/SMP_Drilling_Coring_Sampling_Logging.pdf</a>)</p>	<p>a. Sampling will be focused on the soil just beneath the pipeline and at the water table to evaluate whether the J-Line has leaked. The text in Section 5.2.5 has been revised as follows:</p> <ul style="list-style-type: none"> <li>Sets of two soil samples will be collected <i>at each of the 11 six</i> proposed locations on the J-1 and J-2 Lines (Figure 4).</li> </ul> <p>Samples will be collected using direct-push technology as close to the J-Line as possible. <del>Sampling depths are proposed at 3 and 6 feet bgs or at the groundwater interface, whichever is shallower.</del> <i>At each location, one soil sample will collected directly beneath the J-Line. If backfill material extends beneath the initial soil sample, then a second soil sample will be collected at a maximum depth of 8 feet bgs. If groundwater is encountered, then the second soil sample will be collected in the saturated zone. Groundwater is anticipated to be encountered at 4 to 6-feet bgs.</i></p>

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14. (con't)			<p>b. The sampling frequency rationale was based on the likelihood that a release from the J-1 or J-2 pipeline would have migrated preferentially along the utility and within the coarse-grained backfill material. Based on this rationale, soil sample locations were proposed at one sample location every 20-feet of the J-1 and J-2 lines. Existing and proposed sampling locations will be used to meet this criterion. The additional sample locations will be placed next to the two identified cracks or pipeline joints. There is an existing sample location next to the one identified offset; therefore, an additional sample is not needed. The text in Section 5.2.3 has been revised as follows:</p> <p><i>Six</i> Additional soil sample locations are proposed along the J-1 and J-2 Lines to assess pipeline joints separations. The pipeline length between joints was found to be 5 feet and Although there is no documentation of the locations of the pipe joints or the lengths of pipe sections, a sampling frequency of at least one sample per 20 45 feet of pipeline, taking into consideration existing data, is expected to be sufficient to address this data gap (Figure 4).</p> <p>c. Please see the response to DTSC specific comment 14a.</p> <p>d. This comment will be taken into consideration during preparation of the quality assurance project plan (QAPP) for the proposed field work.</p> <p>e. This comment will be taken into consideration during preparation of the sampling and analysis plan (SAP) for the proposed field work.</p>
15.		<p><b>Page 17, Section 5.3, Closure Report.</b> Based upon the comments provided above, DTSC cannot determine whether a closure report would be appropriate or whether additional removal or remedial actions will be required.</p>	<p>The Navy recommends proceeding with soil sampling to address the 2008 regulatory comments on the "Final Closure Certification Report, J-Lines Segment of Installation Restoration Site 14, Former Mare Island Naval Shipyard, Vallejo, California" (CH2M Hill 2008).</p>

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<b>GENERAL COMMENTS</b>			
1.		Please identify on the figures the locations of previously identified pipeline breaks, cracks, connections and offsets that were identified during the video camera survey. These areas particularly need to be covered in the sampling program.	Please see the response to DTSC specific comment 8.
2.		The sampling plan should be designed to characterize the nature and extent of abrasive blast material present along the pipeline corridor, and should include step-out borings to visually determine and record extent of abrasive blast material present.	<p>The J-Line investigation currently includes 47 sample locations, 42 lithologic logs, 65 soil samples, and 7 groundwater samples. A more detailed analysis of the lithology and elevated chromium concentrations has shown that greensand within the J-Line study area is found directly along the J-Line as part of the pipeline bedding or in the backfill material (new Table 1). Only 11 borings in the J-Line study area contain greensand or sand that is suspected to be or contain greensand (Figure 3). The remaining 34 borings provide adequate characterization of the extent of the greensand at the J-Line area:</p> <ol style="list-style-type: none"> <li>1. There are 23 borings within the 150- by 150-foot area between Buildings 900 and 1300.</li> <li>2. Two series of step-outs are from locations that contained elevated chromium along the main J-Line. These step-outs show that the elevated chromium is limited to the greensand or sand suspected to be or contain greensand found as bedding around the J-Line.</li> </ol> <p>Additional soil sampling is planned along the J-1 and J-2 Lines to address regulatory comments on the J-1 Line video survey (Figure 4); this sampling will include documenting lithology in borelogs and collecting soil samples for analysis. Soil will be analyzed for volatile organic compounds (VOC) by EPA Method 8260B, semivolatile organic compounds (SVOC) by EPA Method 8270D, polychlorinated biphenyls (PCB) by EPA Method 8082A, and metals by EPA Methods 6010C and 7471B.</p>

**RESPONSES TO COMMENTS ON THE DRAFT CLOSURE APPROACH TECHNICAL MEMORANDUM FOR THE J-LINE SECTION OF INSTALLATION RESTORATION SITE 14, MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA (CONTINUED)**

No.	Page	Comment	Response
<b>Responses to Comments from EPA (Carolyn d'Almeida, August 17, 2009) (Continued)</b>			
3.		Please include a summary evaluation of the existing soil and groundwater data. It is not clear why data was provided only on the CD version when there are only 7 pages of groundwater data with only 2 sample points for VOCs presented. The locations of these sampling points and their proximity to the J line segment are not noted on the figures. It appears that more groundwater and/or soil gas data should be collected to complete this investigation, particularly in the vicinity of identified pipeline breaks, cracks, connections and offsets where leakage could have occurred.	<p>Sections 4.2.1 and 4.2.2 provide a summary evaluation of the existing soil and groundwater data. Table 2 (formerly Table 1) also provides a summary of the existing soil data. Also, please refer to DTSC specific comment 4.</p> <p>Appendix D – Analytical Results for Groundwater Samples will be provided in the hardcopy final report, as requested. Two of the seven groundwater samples collected at borings in the J-Line area were analyzed for VOCs. The first sample is from location 14GB061, which is adjacent to the J-1 Line and west of Building 900. The second sample is from location 14GB063, which is adjacent to and on the north side of the former pump station 8.</p> <p>Eighteen soil samples from the J-Line area were collected and analyzed for VOCs or benzene, toluene, ethylbenzene and xylenes (BTEX). A few VOCs were detected at very low levels that were 3 to 7 orders of magnitude less than the industrial EPA RSLs for those compounds (EPA 2009a). Because VOCs are not a chemical of concern in soil, further analysis of VOCs in groundwater was not required. Proposed soil samples will be analyzed for VOCs and these results will also be used to evaluate potential release of VOCs to groundwater. The J-1 and J-2 sampling area also overlaps IR04 and the groundwater at IR04 has been characterized as part of the remedial investigation (SulTech, 2006).</p>
<b>SPECIFIC COMMENTS</b>			
1.		<b>Section 3.4, page 5.</b> The statement that ecological habitat is unlikely to develop because the area is zoned industrial and the City plans to construct a marina should be deleted. Under the current economic climate, the IR 04 area is just as likely to revert to habitat as to undergo development. An ecological risk assessment for this area should be considered.	<p>The text in Section 3.4 has been revised as follows:</p> <p><i>The reuse for the J-Line area is industrial with plans for a marina; therefore, ecological habitat is unlikely to develop at the J-Line area in the future (City of Vallejo 1994). As detailed in Section 3.6, the planned reuse of the J-Line area is industrial (City of Vallejo 2008). Thus, the J-Line area will likely remain covered by buildings, asphalt, and concrete, with limited landscaping and will continue to provide no significant habitat for ecological receptors.</i></p>

**RESPONSES TO COMMENTS ON THE DRAFT CLOSURE APPROACH TECHNICAL MEMORANDUM FOR THE J-LINE SECTION OF INSTALLATION RESTORATION SITE 14, MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA (CONTINUED)**

No.	Page	Comment	Response
<b>Responses to Comments from EPA (Carolyn d'Almeida, August 17, 2009) (Continued)</b>			
1. (con't)			<p>Section 3.6 - Land Use has been added:</p> <p><i>The portion of the J-Line area that overlaps IR04 is part of the South Island Business Park (City of Vallejo 2008). The South Island Business Park will be owned by the State Lands Commission and subsequently leased to the City of Vallejo for sub-lease to the master developer for development consistent with the use restrictions imposed by the State Lands Commission. State Lands Commission jurisdiction over this area requires an industrial land use designation and relocating residential uses to other areas. Under the master design plan for the South Island Business Park, a simple, large-scale building footprint and street grid will be established that is compatible with other industrial areas on Mare Island. A significant laydown area is planned for the north area adjacent to Berth 24, where rail and water access may call for storing and handling materials. Landscape improvements may be limited to streetscape improvements on major roadways.</i></p> <p><i>The remaining portion of the J-Line area is a federal-to-federal transfer property occupied by the U.S. Army Reserve. This area, with its existing port facilities and warehouses, is designated for those uses deemed necessary by the Army Reserve. Federal transfer properties are exempt from local land use authority and are not subject to the provisions of the Mare Island Specific Plan (City of Vallejo 2008).</i></p>

**RESPONSES TO COMMENTS ON THE DRAFT CLOSURE APPROACH TECHNICAL MEMORANDUM FOR THE J-LINE SECTION OF INSTALLATION RESTORATION SITE 14, MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA (CONTINUED)**

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- U.S. Environmental Protection Agency (EPA). 2009a. EPA Regional Screening Level Table.
- EPA. 2009b. EPA National Recommended Water Quality Criteria.

## TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N62473-07-D-3213

Document Control No. CHAD-3213-0063-0003

TO: Contracting Officer  
Beatrice Appling  
Naval Facilities Engineering Command  
Southwest Division  
1220 Pacific Highway, Bldg 127  
San Diego, CA 92132-5190

DATE: 09/14/09  
CTO: 0063  
LOCATION: Mare Island Naval Shipyard, Vallejo, California

FROM:



**Steven Bradley, Contract Manager**

DOCUMENT TITLE AND DATE:

**Response to Comments on the Draft Closure Approach Technical Memorandum for the J-Line**

**Section of Installation Restoration Site 14**

**September 14, 2009**

TYPE:       Contractual Deliverable       Technical Deliverable (DS)       Other (TC)

VERSION: NA      (e.g., Draft, Draft Final, Final)      REVISION #: NA

ADMIN RECORD:    Yes     No       CATEGORY: Confidential

SCHEDULED DELIVERY DATE: 09/14/09    ACTUAL DELIVERY DATE: 09/14/09

NUMBER OF COPIES SUBMITTED TO NAVY: 0/6C/7E/6D

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