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55 Jonspin Road • Wilmington, MA 01887-1020
Tel 978 658.7899 • Fax 978.658 7870 • www.tetratech.com

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Project Number GN1611

Ms. Kymberlee Keckler
Remedial Project Manager
USEPA Region I
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Mr Paul Kulpa, Project Manager
Office of Waste Management
Rhode Island Department of Environmental Management
235 Promenade St.
Providence, Rhode Island 02908-5767

Reference: CLEAN Contract No. N62472-03-D-0057
Contract Task Order No 8

Subject: Conceptual Site Model for Old Fire Fighting Training Area
Naval Station Newport, Newport, Rhode Island

Dear Ms. Keckler and Mr. Kulpa.

As requested by the Navy, this letter transmits the Navy's responses to EPA and RIDEM comments on the subject document dated March 17, 2006. Based on these comments and responses, the Conceptual Site Model will be revised with the updated Feasibility Study for this site

If you have any questions, please do not hesitate to contact Curt Frye at (215) 897-4914 or James Colter at (610) 595-0567.

Very truly yours,

Stephen S. Parker, LSP
Project Manager

SSP/rp

Enclosures
A. Responses to USEPA Comments, Conceptual Site Model for OFFTA, Naval Station Newport, Newport, Rhode Island, (Comments dated April 20, 2006).
B. Response to RIDEM Comments, Conceptual Site Model for OFFTA, Naval Station Newport, Newport, Rhode Island, (Comments dated May 5, 2006).

c. C. Frye, NAVFAC (1 - w/encl.)
J. Colter, NAVFAC (1 - w/encl.)
M. Kelly, Battelle (1 – w/encl)
C. Mueller, NAVSTA (2 - w/encl)
G. Pringle, NFESC (1 – w/encl.)
J. Stump, Gannett Fleming (1 - w/encl.)
J. Trepanowski/G. Glenn/S. Parker, TtNUS (w/encl.)
File GN1611-3.2 (w/o encl) File GN1611-8.0 (w/encl.)

ATTACHMENT A
RESPONSES TO COMMENTS FROM THE USEPA
ON THE CONCEPTUAL SITE MODEL FOR OFFTA MARCH 17, 2006
COMMENTS DATED APRIL 20, 2006

General Comments.

1. *A human health risk assessment that evaluates a commercial/industrial scenario (soil and groundwater exposure) should be included so that remedial action objectives based on this exposure scenario can be evaluated in an FS. Additionally, the Navy should officially inform EPA of its plans for the future use of the OFFTA parcel and explain how it will be enforced.*

Response: Exposure to groundwater via the commercial industrial use of the site is a data gap from Appendix B of the FS (TtNUS 2002), and filling this gap is recommended by the Tiger Team review. The Navy will provide correspondence on enforcement of land use controls at the OFFTA site

2. *Please outline the Navy's commitment to conduct additional investigations to locate and remove buried structures and take additional samples around any such structures in the upcoming removal action work plan. This investigation should sufficiently address EPA's concern regarding unidentified residual contamination.*

Response: The soil predesign investigation and other investigative efforts located foundations and structures, as well as areas where residual oil and lead contamination is present. The Tiger Team recommends returning to these target locations, removing the structures and exploring the surrounding areas as target materials are removed This effort will be described in the removal action work plan

3. *The revised FS should incorporate the sediment monitoring data that have been collected The results of a comparison of these data to ecological PRGs should also be included.*

Response: The comparisons provided in the Sediment and Groundwater Monitoring Report (TtNUS, March 2006) will be incorporated into the revised FS in order to bring the document up to date.

Specific Comments

Page	Comment
p. 2-12, §2.6	*Dioxins and furans should be identified as potential site related contaminants because of the potential for historical actions such as burning fuel to generate dioxins and furans. Seven surface soil samples were analyzed for dioxin and furans. There were detections in the seven soil samples. In a previous risk assessment, the toxicity equivalent quotients were lower than a level of concern. The method for evaluating dioxin risk has since been updated The risk assessment that will be conducted to evaluate potential risk to the commercial/industrial receptor should include an evaluation of exposure to dioxins and furans in surface soil. These risk calculations should follow most recent guidance and include the most current toxicity data published by EPA and accepted references for evaluation of exposure to dioxins in environmental media.*
Response:	The samples collected showed detections of dioxin-like compounds and provided resulting Toxicity Equivalency Quotients (TEQs) below 1 ug/kg. An addendum to the risk assessment is recommended to be included in the FS to recalculate the risks from this group of compounds using the receptor pathways as appropriate for the planned future use of the site.

p. 4-5, §4.2 *The IEUBK model has been updated. The intake value for dietary consumption can now be changed in the latest version of the IEUBK model The commercial/industrial receptor should be evaluated for exposure to lead in surface soil. This evaluation should use the latest version of the IEUBK model.*

Response: The addendum to the risk assessment will include an update of the lead risks using updated models and the receptor pathways as appropriate for the planned future use of the site

ATTACHMENT B
RESPONSES TO COMMENTS FROM THE RIDEM
ON THE CONCEPTUAL SITE MODEL FOR OFFTA MARCH 17, 2006
COMMENTS DATED MAY 5, 2006

General Comments:

A: *The primarily focus of the Team was alternative risk evaluations and applicability of certain regulatory requirements. The Team has not evaluated alternative remedial approaches and/or concerns broached by the regulatory agencies on the site The Office of Waste Management is disappointed that the Tiger team did not address concerns of the regulators or assess methods to optimize the proposed removal action presented in the Proposed Plan, as well as, other remedial alternatives for the site*

Response: This is a comment on the meeting presentation and efforts of the Tiger Team, and not a comment specific to the Conceptual Site Model document The Navy welcomes further discussion and comment on the Tiger Team review when minutes to the meeting April 13, 2006 are provided.

B. *Please be advised that agreement has not been reached between the parties of the Federal Facilities Agreement over the need to revise either the Remedial Investigation Report or the Feasibility Study for the site*

Response: Comment noted. It is our understanding that the USEPA has agreed on this point, and the nature of the statement indicates that RIDEM does not agree. As previous correspondence indicates, RIDEM also did not concur with the previous FS report, the risk assessment reports, or the Remedial Investigation for this site. Thus it is not clear why RIDEM would not want a revision of a report that was previously rejected.

Specific Comments.

1. ***Section 2.1, Soil, Petroleum***
   Page 2-3

   This section of the report notes that oil saturated soil and free product flowing from the test pits onto the water table has been observed at the site. In addition it acknowledges that globules of oil is present, however the report has labeled them as residual oil, which has not appeared to migrate. Please be advised that the term free product applies to any media; soil sediment, and groundwater. Further, the observations made at the site demonstrates that free product is present in the soil.

Response: The comment is noted. The term "free product" is not defined in the RIDEM regulations However, NAPL is defined as a liquid, "present at such a concentration that it exists in a separate phase in equilibrium with water". The document on pages 2-2, 2-6, and 3-2 clearly describes recent evidence that oil does not exist as NAPL in equilibrium with the groundwater under the steady state condition.

2. ***Section 2.1, Soil, Petroleum***
Page 2-3

Please be advised that the concentration of oil at the site has exceeded the leachability standard for TPH (2500 ppm). The standard is applicable to the site, as TPH has been found dissolved in the groundwater.

Response: The comment is noted. However, please note that hazardous constituents of petroleum have not been detected in recent rounds of groundwater sampling indicating that the groundwater and the downgradient surface water is not threatened by the groundwater transport pathway Regardless, this is a comment pertinent to the presentation of the Tiger Team findings, and not on this section of the CSM

3. ***Section 2.1, Soil, PAHs,***
Page 2-3

This section of the report attributes the observed PAHs to abraded asphalt. Please be advised that the Office of Waste Management has outstanding concerns with respect to the Navy's conclusion that asphalt is the culprit

Response: The comment is noted Please refer to Navy correspondence dated March 13, 2006 to summarize these points.

4. ***Section 2.1, Soil, Metals***
Page 2-3.

This section examines the concentrations of metals in till, fill, and natural materials to make statements concerning contaminants distribution and potential sources. Using onsite data it concludes that the till is a natural source of elevated metals.

Please be advised that releases at a site will complicate any attempt to determine background studies. That is why at all sites the standard procedure is to collect background samples from locations not impacted by a site.

Response: The comment is noted. The observations are made in this section simply to reinforce the findings of the previous background investigation conducted Additional information on this topic will be provided through the performance of the basewide background soil investigation for NAVSTA, planned for 2006.

5. ***Section 2.1, Soil, Background Study***
Page 2-4

This section of the report evaluates the distribution of metals in the background study. In regards to arsenic it concludes that the high concentration of arsenic (84 ppm) in the subsurface soil compared to 5 5 ppm in the surface soil demonstrates that the arsenic in the subsurface is naturally occurring. The evaluation was somewhat simplistic and failed to address a number of important aspects of any background study, including spatial distribution outliers, normality, etc. The elevated levels of subsurface arsenic were all observed in one location. They were identified as outliers during the statistical evaluation and they did not conform to normality. Finally, if the samples from this one location are removed the maximum concentration of arsenic in the subsurface soil is 5.7 ppm, which essentially mirrors the maximum concentration observed in the surface soils (5.5 ppm).

Response The description in the CSM of the background soil conditions is intended to be a simpler (summary) discussion of that described in the Background Soil Investigation Report (TtNUS 2000). The background arsenic data set was evaluated for outliers and it was determined that the detected arsenic concentration of 84 mg/kg should remain within that data set. Furthermore, at the request of RIDEM at the time, the UTL was recalculated with this data point excluded, and found to be 33.6 mg/kg, vs 42.8 mg/kg. It was then determined that removal of the data point was not statistically defensible. Finally, there is no reason given for removal of four of the 19 data points from the data set based on distribution of the sample stations as alluded to above, other than to reduce that UTL to a value deemed desirable by RIDEM Refer to the Background Soil Investigation Report (TtNUS August 2000) for further details.

6. ***Section 2.2, Groundwater, Petroleum***
Page 2-6

The report notes that petroleum saturated soils were observed in test pits and/or borings. In addition free products was observed flowing into test pits and sheens were detected in wells Please be advised that these observations demonstrate that NAPLs are present at the site, which requires remediation.

Response: The comment is noted Please refer to the response to Comment 1, above

7. ***Section 2.2, Groundwater, Petroleum***
Page 2-6

The report notes that the concentrations of TPH in the groundwater ranges from 250-1381 ppb, and implies that this concentration is not at levels of concern Please be advised that a number of states either have regulations or guidelines, which stipulate that TPH at this concentration warrants action.

Response: The comment is noted. Rhode Island has no standard for TPH in groundwater. Other state's criteria do not stipulate a need to conduct action at this location. (Massachusetts and Connecticut, the states that share borders with Rhode Island both cite 1,000 mg/L as a reporting limit for TPH in groundwater in a GB equivalent aquifer)

8. ***Section 2.2, Groundwater, PAHs VOCs***
Page 2-7

This section of the report notes that low levels of PAHs and VOCs were observed in the groundwater (two PAHs and one VOC exceeded GA standards). The report should note that the low level of PAHs might be contributing to the PAHs observed in the sediments.

Response: As the report states, the GB criteria have not been exceeded, and the site is within a GB area The GA criteria were exceeded for two PAHs and one VOC in two wells during one event in 1997, and all other sampling has shown compliance with GA criteria. The possibility of transport of PAHs from soil to sediment via groundwater has been considered (Sections 2.3, 3.2 and 3.6 of the CSM) and discounted, particularly considering the different nature of PAHs in the soil and groundwater and those in the sediment.

9. ***Section 2.2, Groundwater, Metals***
Page 2-7

This section of the report is limited to a discussion of manganese Elevated levels of lead, including concentrations above drinking water standards, were found in wells at the site. This section of the report should also note that elevated levels of lead were found in the soil at the site and in the adjacent sediments.

Response: The comment is somewhat misleading. Manganese is the only metal which exceeded the groundwater PRGs since 1994 (TtNUS 2006) Samples taken in 1994 were taken using bailers which likely elevated metals concentrations artificially during well disturbance. Drinking water standards do not apply to the site since it is within a GB area. Conditions of the soil and sediment are clearly described in the appropriate sections There is minimal discussion of metals in the sediment section (2.3 of the CSM) because metals in sediment have not been found to exceed PRGs, with the exception of arsenic, which is believed to be a result of background conditions

10. ***Section 2.2, Groundwater, Metals***
Page 2-7

Previous reports produced by the Navy stated that antimony, arsenic, beryllium, cadmium, chromium and nickel were found at the site in the groundwater exceeding MCLs or state criteria. This should be noted in the report.

Response: Please refer to the response to comment no. 9, above.

11. ***Section 2.3, Sediments***
Page 2-7

The focus of the sediment discussion was the distribution of PAHs, possible sources, and the fact that there is disagreement in this matter. The section should also note that elevated levels of lead were found in the adjacent sediments Further, the report should note that elevated levels of lead were found in the soil and in the groundwater.

Response: Lead was not selected as a COC for sediment, and although one station exceeds the RIDEM DEC for industrial/commercial use soil, it is not certain that such a classification should apply to sediment. Regardless, it is only one location and identified as such in the summary (page 5-2) of the report.

12. ***Section 2.5, Surface Water***
Page 2-9

This section notes that sheens were not observed on the surface water. It is the Office of Waste Management's understanding that free product was found in the remains of an unknown discharge pipe and a sheen was observed flowing out of a storm drain

Response: Visible petroleum – like sheens were observed in two water samples collected from manholes within the storm drain in 1997. Analytical results for samples from this water showed no concentrations of TPH above the detection limit of 1 mg/L An oil/water interface probe did not indicate the presence of petroleum.

13. Section 2.4, Shellfish
Page 2-9

The report compares the concentrations of contaminants observed in mussel tissue samples with those from the mussel watch program. A comparison was not performed for lobsters and clams, as this information is not available in the mussel watch program. The report failed to note that the concentrations of contaminants in tissue samples for these organisms are higher on site when compared to the Jamestown reference station.

Response: Analytical results for shellfish collected for the Derecktor Shipyard ERA were overlooked during the development of the CSM. There are two reference lobster samples, two blue mussel samples, and two clam samples available from this study, conducted in 1996. These samples were collected from Jamestown Potter Cove (JPC) and Castle Hill Cove (CHC) (clams were only collected at the JPC station). It is agreed that this data should be added to the CSM for discussion.

However, contrary to the comment above, concentrations of arsenic detected in these reference samples are comparable to or higher than the RME doses calculated for the OFFTA site risk assessment:

Arsenic in Shellfish

Species	OFFTA	JPC	CHC	NOAA Ref.
Mussel	2.3	4 7	6.8	11.2
Clam	11.6	7 7	11 4	NA
Lobster	8 6	19.4	21.7	NA

All results are expressed in mg/kg dry weight

Concentrations of lead and PAHs are higher in the OFFTA lobster samples than in the reference lobster samples from JPC and CHC. Concentrations of lead and PAHs in clams seem similar, although no clam sample was available from the CHC station for balance

Additional lobster and clam data may provide helpful information in this regard, however, lobster data is considered less reliable due to the propensity of these animals to move around during their life span. Clams and mussels provide better exposure measurements due to their nature as sessile animals.

The revision of the CSM will reflect this additional data in Section 2.4.

14. Section 2.6, Summary of Contaminants Detected
Page 2-13

The report erroneously notes that PAHs were not detected in the groundwater. PAHs and VOCs were detected, including concentrations above MCLs

Response: The second bullet under the groundwater header page 2-13 will be clarified to state that PAHs and VOCs were not detected since 1997 (when bailers were used to collect samples) and they have never exceeded applicable (GB) groundwater criteria

15. ***Section 2.6, Summary of Contaminants Detected***
Page 2-13

The report notes that the PAHs observed in the sediment were dissimilar to those observed at the site. This is not the case as the same PAHs were observed at both locations The report should accurately state that there is disagreement with the source of the PAHs in the sediment.

Response: The statement made in this section is made based on the forensic study, and not the concentrations of each constituent. While this will be clarified in the revised document, the authors of the report did not intend to point out all the disagreements between RIDEM and the Navy in regards to the data interpretations, and it seems appropriate to leave those disagreements out of the text. The Navy has noted RIDEMs disagreement with the findings of the forensic study (comment 3 above)

16. ***Section 2.6, Summary of Contaminants Detected***
Page 2-13

The report failed to note the concentration of contaminants in onsite samples were higher then the Jamestown reference station.

Response: In regards to shellfish, please refer to the response to comment no. 13, above. In regards to the sediment, these stations have been taken into account.

17. ***Section 3.0, Fate and Transport***
Page 3-1.

This section of the report discusses the contaminant distribution at the site and possible migration routes. The conclusions presented in this section have been questioned by the Office of Waste Management in previous correspondence and in meetings on other reports submitted by the Navy. Rather than reiterate these concerns, please note that the Navy has not provided any additional information in the CSM report, which addresses these concerns.

Response: The comment is noted. In regards to the forensic studies, it is believed that the Navy and EPA have reached agreement on the conduct and the findings of these studies The Navy is open to further discussion on this topic and the topic of TPH and NAPL.

18. ***Section 4-1, Human Health Risk***
Page 4-1.

Although, the Tiger team is supposed to conduct an independent evaluation of the remedial investigation conducted at the site this section essentially reiterates the previous human health risk assessment performed at the site, with the recommendation that a residential scenario is not appropriate. It has not addressed any of the concerns generated by the Office of Waste Management on the human health risk assessment, such as the fact that the risk assessment grossly underestimates the ingestion rate for adults who consume shellfish (shellfish ingestion rate for an adult in this assessment is a fraction of what a child between the ages of 1-6 consumes).

Response: The comment is noted. However, this is a comment better addressed to the Tiger Team findings. The CSM is simply a summary of the data collected and evaluations conducted. It is not to be considered the Tiger Team's report. Therefore the points made in the CSM in regards to the risks are a summary of the risk assessments which RIDEM has already disagreed with

19. Section 4-3, Ecological Risk
Page 4-8.

The Ecological Risk Assessment is essentially a summary of the previous studies performed at the site. It does not address concerns broached by the Office of Waste Management on previous submittals or in meetings

Response: Concur. Please refer to the response to comment 18 above.

20. Section 5.0, Summary
Page 5-1

Please be advised that as indicated in the above comments and in previous comments submitted on other documents the Office of Waste Management does not concur with a number of conclusions presented in this report with respect to the mobility and risk associated with petroleum, SVOCs and metals found at the site the Navy interpretation of NAPLs and the exclusion of certain risk evaluations, such as residential which is equivalent to RIDEM's recreational standard.

Response: Comment is noted. Please refer to the response to comment 18 above

With regard to the last sentence in this comment: *"residential which is equivalent to RIDEM's recreational standard"*, this is a statement that is technically incorrect. At the Tiger Team meeting RIDEM agreed that in accordance with the remediation regulations, restrictions on recreational use at a site would leave that site to fall under Industrial/Commercial standards.