

Baker

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July 9, 2010

U.S. Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, NY 10007-1866

Attn: Mr. Adolf Everett, P.E.
Chief, RCRA Programs Branch

Re: Contract N62470-10-D-3000
IQC for A/E Services for Multi-Media
Environmental Compliance Engineering Support
Delivery Order (DO) 0002
U.S. Naval Activity Puerto Rico (NAPR)
EPA I.D. No. PR2170027203
Revised Final Phase I of the Corrective Measures Study Investigation for
SWMU 74 – Fuel Pipelines and Hydrant Pits

Dear Mr. Everett:

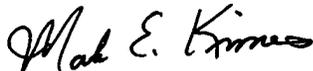
Michael Baker, Jr., Inc. (Baker), on behalf of the Navy, is pleased to provide you with one hard copy of the replacement pages for the Final Phase I of the Corrective Measures Study Investigation (CMS) for SWMU 74 – Fuel Pipelines and Hydrant Pits, Naval Activity Puerto Rico for your review and approval. These replacement pages make up the Revised Final Phase I of the Corrective Measures Study Investigation for SWMU 74. Directions for inserting the replacement pages into the Final Phase I of the CMS Investigation Report are provided for your use. Also included with the copy of the replacement pages is one electronic copy provided on CD of the Revised Final CMS Investigation Report.

This document is being submitted in accordance with EPA comments dated May 27, 2010. The Navy responses to these comments, including a project schedule and an addendum to the Final CMS Work Plan describing the Phase II Investigation activities are attached for your review. Additional distribution has been made as indicated below.

If you have questions regarding this submittal, please contact Mr. Mark Davidson at (843) 743-2124.

Sincerely,

MICHAEL BAKER JR., INC.



Mark E. Kimes, P.E.
Activity Coordinator

MEK/lp
Attachments

Mr. Adolf Everett, P.E.

U.S. Environmental Protection Agency, Region II

July 9, 2010

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cc: Ms. Debra Evans-Ripley, BRAC PMO SE (letter only)
Mr. David Criswell, BRAC PMO SE (letter only)
Mr. Mark E. Davidson, BRAC PMO SE (1 hard copy and 1 CD)
Mr. Pedro Ruiz, NAPR (1 CD)
Mr. Tim Gordon, USEPA Region II (1 hard copy and 1 CD)
Mr. Carl Soderberg, US EPA Caribbean Office (1 hard copy and 1 CD)
Mr. Felix Lopez, US F&WS (1 hard copy)
Mr. Jonathan Flewelling, TechLaw, Inc. (1 CD)
Ms. Wilmarie Rivera, PREQB (1 CD)
Ms. Gloria Toro, PREQB (1 hard copy and 1 CD)

NAVY RESPONSE TO COMMENT LETTER DATED MAY 27, 2010

Navy Response to EPA Comment Letter, dated May 27, 2010 and Technical Evaluation (dated May 12, 2010) of the Navy Responses to PREQB Comments on the Draft Phase I Corrective Measures Study Investigation for SWMU 74 – Fuel Pipeline and Hydrant Pits, dated November 19, 2009

(EPA and PREQB comments are in *italics* and/or ***bold italics*** while Navy responses are in regular and **bold** print.)

EPA COMMENTS DATED MAY 27, 2010

EPA has completed its review of the Revised – Phase I Report of Corrective Measures Study (CMS) and the Responses to comments (included with EPA’s letter of January 22, 2010) submitted by Mr. Mark Kimes’ (of your consultant Michael Baker Jr.) letter of March 26, 2010, on behalf of the Navy. EPA finds the Responses acceptable in regards to the issues addressed, and the Phase I Report to be acceptable as an interim report. However, EPA’s January 22, 2010 letter to you had requested that the Navy submit a work plan and schedule for implementing the Phase II CMS investigations discussed in the Phase I Report. Neither was included with the documents transmitted with the March 26, 2010 letter submitted by Mr. Mark Kimes of Michael Baker Jr., Inc. on behalf of the Navy. Therefore, EPA requests that the Navy submit, within thirty days of your receipt of this letter, a work plan and schedule for implementing the Phase II CMS investigations.

Navy Response to EPA Comment Dated May 27, 2010: A schedule for implementing Phase II of the CMS investigation is attached to this Response to Comments as Figure 1. Note that the Phase II activities will be implemented by geographic area (Airfield Area, SWMU 9 Area A/B, JP-5 Hill and DFM Area, SWMU 9 Area C and the Fueling Piers Area) and as funding becomes available. Phase II activities for the Airfield Area, JP-5 Hill and DFM Area, and the Fueling Piers Area are currently funded; Phase II activities for SWMU 9 Area A/B Area and SWMU 9 Area C Area have not yet been funded.

The Final CMS Work Plan for SWMU 74 (Baker, 2007), approved by USEPA on April 10 2008 is applicable for the entire CMS process, including the Phase I and II Investigations. However, the Final Work Plan does not specify the proposed Phase II sample locations. The Navy proposes preparation of an Addendum to the Final CMS Work Plan that details the specific sampling to be conducted during Phase II, including: any changes/revisions to sampling procedures or evaluation criteria, figures showing the proposed sample locations in each of the five geographic areas (Airfield Area, SWMU 9 Area A/B, JP-5 Hill and DFM Area, SWMU 9 Area C and the Fueling Piers Area), and tables indicating the specific environmental and QA/QC samples to be collected and their associated analyses. Addendum A – Phase II of the CMS Investigation for SWMU 74 to the *Final Corrective Measures Study (CMS) Work Plan for SWMU 74 (Baker 2007)* is included as an attachment to this Response to Comments.

PREQB TECHNICAL EVALUATION DATED MAY 11, 2010

The following evaluation is mostly directed toward requiring the inclusion of the clarifications as part of the text in the Draft Phase I Corrective Measures Study Investigation for SWMU 74 – Fuel Pipeline and Hydrant Pits, dated November 19, 2009. By this means it will be clearly stated that the commented considerations were considered and well justified. Please notice that PREQB comments are in italics, Navy’s responses in regular font and PREQB’s evaluation of response is in bold [italics].

- 1) *PREQB Comment 5. Page 3-5, Section 3.2, Paragraph 1: Please clarify why screens longer than 10 feet were utilized at some locations. The use of ten feet of screen is an industry standard and the concern in using longer screen a length revolves around the affects of averaging.*

Navy Response to PREQB Page-Specific Comment 5: Fifteen foot screen lengths were used in three wells: 74SB145, 74VP05a and 74VP11b/JP5. A moist silt clay with no distinct water bearing zones was encountered at these locations. A longer screened interval was used to maximize potential groundwater production from the silty clay. No revisions to the text are proposed.

Evaluation of Response: *Please include the provided clarification provided in the response in the text of the report.*

Navy Response to Evaluation of Response: **The clarification will be incorporated into the text of the first paragraph of Section 3.2 of the Revised Final Phase I of the Corrective Measures Study Investigation for SWMU 74.**

- 2) *PREQB Comment 6. Page 3-7, Section 3.3, Paragraph 1: Please clarify why the elevations of the ground water monitoring points in the areas outside of the airfield area were not surveyed to allow for the generation of ground water elevation contour maps. The work plan called for surveying of all sample locations, including monitoring wells, and Section 3.6 indicates that each monitoring well location was surveyed using the RTK GPS methods which were highlighted to be able to provide vertical accuracy to within 0.02 feet.*

Navy Response to PREQB Page-Specific Comment 6: As discussed in Section 3.6, monitoring wells were surveyed for location and elevation using the RTK GPS, as specified in the Work Plan. No revisions to the text are proposed.

Evaluation of Response: *Please clarify the text by amending sentence 7 in paragraph 1 of Section 3.3 to say, “A ground water map was not created for the other SWMU 74 areas due to a lack of coincident ground water elevation measurements.”*

Navy Response to Evaluation of Response: **The clarification will be incorporated into the text of Section 3.3 of the Revised Final Phase I of the Corrective Measures Study Investigation for SWMU 74.**

- 3) *PREQB Comment 11. Page 4-3, Section 4.3.1 and Table 5.1. Please update the Regional Screening Levels (RSLs) used for screening data to the December 2009 version of the RSL table. Also, consistent with other NAPR investigations, please ensure that if the noncarcinogenic RSL is less than 10 times the carcinogenic-based RSL, 10% of the*

noncarcinogenic RSL is used for screening. Please add this information to footnote 2 of Table 5-1.

Navy Response to PREQB Page-Specific Comment 11: The Draft Report (November 2009) was released prior to the December 2009 version of the RSL table; consequently, no revisions to the RSLs are proposed.

Evaluation of Response: *As requested in PREQB’s comment, “consistent with other NAPR investigations, please ensure that if the noncarcinogenic RSL is less than 10 times the carcinogenic-based RSL, 10% of the noncarcinogenic RSL is used for screening. Please add this information to footnote 2 of Table 5-1.”*

Navy Response to Evaluation of Response: Footnote 2 in Table 5-1 will be revised to read as follows:

⁽²⁾ Noncarcinogenic Regional Screening Levels are based on a target hazard quotient of 0.1 for conservative purposes. If the noncarcinogenic RSL is less than 10 times the carcinogenic RSL, then 10 percent of the noncarcinogenic RSL is used for screening.

- 4) *PREQB Comment 12. Page 4-4, Section 4.4.1 Soil and Table 5-1. As stated here and in Section 5.2.1.1 of the December 2007 Work Plan, “USEPA ecological soil screening levels (Eco-SSLs) for terrestrial plants and invertebrates were preferentially used as soil screening values.” The approved Work Plan prescribed this approach to identify contaminants of concern (COCs) for plants and invertebrates in addition to separately identifying COCs for potential food chain exposures of birds. However, the identification of avian food chain COCs appears to be absent from the report. As noted in prior EQB reviews of ERAs at other NAPR sites, USEPA’s original intent for the Eco-SSLs was for the lowest available of all Eco-SSLs for plants, soil invertebrates, birds, and mammals to be used in soil COC selection. Avian and mammalian Eco-SSLs are often lower than plant and soil invertebrate EcoSSLs and no screening evaluations were performed for food chain exposures of birds and mammals using ingestion-based screening values and estimated dietary doses. Please revise the selection of soil criteria used to apply the lowest of all available EcoSSLs to identify COCs to be evaluated further in a SLERA and in Step 3a of the BERA. This will assure that no soil COCs that pose a screening-level risk to wildlife receptors are omitted prematurely during Steps 2 and 3a of the ERA.*

Navy Response to PREQB Page-Specific Comment 12: The Navy partially agrees with this comment. Eco-SSLs have been developed for eight receptor groups: plants, soil invertebrates, avian herbivores, avian ground insectivores, avian carnivores, mammalian herbivores, mammalian ground insectivores, and mammalian carnivores. For a given chemical, the lowest Eco-SSL value for plants, soil invertebrates, avian herbivores, avian ground insectivores, avian carnivores, mammalian herbivores will be selected as the soil screening value. Eco-SSLs for mammalian ground insectivores will not be considered for soil screening value development because there are no mammalian ground insectivores in Puerto Rico (mammalian insectivores are limited to aerial insectivores [i.e., bats]). As discussed in Guidelines for Developing Ecological Soil Screening Levels (USEPA, 2005), aerial and arboreal insectivorous birds and mammals were excluded from Eco-SSL development because they are considered inappropriate (i.e., they do not have a clear or indirect exposure pathway link to soil [indirect exposure pathways involve ingestion of prey that have direct contact with soil]). Eco-SSLs for mammalian carnivores also were not considered for soil

screening value development because there are no carnivorous mammals on Puerto Rico. With the exception of bats, the terrestrial mammals represented by potentially complete exposure pathways are limited to nonindigenous, nuisance species (i.e., Norway rat, black rat, and mongoose) that have been implicated in the decline of native reptilian and bird populations (Mac et al., 1998 and United States Fish and Wildlife Service [USFWS], 1996). Eco-SSLs for mammalian herbivores are considered appropriate for soil screening value development based on the presence of fruit-eating and insectivorous bats in Puerto Rico. Section 4.4.1 of the Draft Phase I of the Corrective Measures Study (CMS) Investigation Report will be revised to reflect this approach to soil screening value development. Appropriate soil and subsurface soil comparison tables (i.e., tables comparing detected concentrations at each location to human health, ecological, and background screening criteria) also will be revised to include the revised ecological soil screening values. It is noted that the approach presented above has been accepted by the PREQB for a Full RCRA facility Investigation (RFI) at SWMU 9 (see PREQB comments dated August 27, 2009, Navy responses dated November 19, 2009, and PREQB comments on Navy responses dated December 23, 2009). It is also noted that the work plan did not indicate or state that analytical data generated during Phase I of the CMS investigation would be evaluated for terrestrial avian food web exposures (see Section 4.3 of the final work plan). Therefore, the Draft Phase I CMS Investigation Report did not include this evaluation. However, identification of avian food web COCs will be performed as part of an ecological risk assessment (ERA) conducted as part of the Phase II CMS report.

Evaluation of Response: Response acceptable pending review of the revisions to the Draft Phase I CMS Report.

Navy Response to Evaluation of Response: No response required.

- 5) *PREQB Comment 16. Sections 5 to 9 Tables & Appendix B. The laboratory reported all nondetect results down to the method detection limit (MDL) instead of the reporting limit. Typically, the MDL is a statistically derived value that is not accurately verified by the laboratory analysis. The reporting limits (or quantitation limits) are accurately verified by laboratory analyses of standards at the unadjusted reporting limit. Table 3-2 of the December 6, 2007 Corrective Measures Study Work Plan and Table 3-3 of this report present the required reporting limits for this program, not the MDLs. It should be noted that reporting limits are typically 3-5 times higher than MDLs prior to adjustment for sample-specific parameters, etc. Please revise all data tables in Sections 5 through 9 of the report as well as the tables of sample results presented in Appendix B to reflect the reporting of nondetect results down to the reporting limit instead of the MDL. The use of the reporting limit would be in accordance with the approved Work Plan. It should also be noted that Sections 5.3.1, 5.3.2, and 5.4.1 of the Work Plan specifically call for the use of reporting limits for the ecological risk assessment process.*

Navy Response to PREQB Page-Specific Comment 16: This issue is currently awaiting resolution pending the outcome of the Response to Comment Letter for the Draft Phase I RFI for SWMU 60 (Former Landfill at the Marina) dated September 25, 2009. Once this issue is resolved, the final response will be applied to this document. The Navy position is that no revisions to the text or tables are proposed.

Evaluation of Response: PREQB acknowledges that the resolution of this comment is pending.

Navy Response to Evaluation of Response: No response required.

- 6) *PREQB Comment 24. Page 5-7, Section 5.9, Paragraph 1: Please provide an explanation as to why coring through the concrete apron will not be conducted to allow for the collection of soil samples. It appears that better distribution of soil samples may be obtained if drilling were to be conducted through the apron.*

Navy Response to PREQB Page-Specific Comment 24: The airfield is currently in active use. Sampling through the apron or runways areas would potentially disrupt current operations. No revisions to the text are proposed.

Evaluation of Response: *Please add the rationale for not coring through the concrete apron to the text of the report.*

Navy Response to Evaluation of Response: **The last sentence of the second bullet in Section 5.9 Recommendations for Phase II, Segment A – Aircraft Hydrant Fueling Area will be revised to read as follows:**

Note that soil sampling will be limited to the vegetated areas and that boring through the concrete apron will not be conducted as the airfield is currently active and sampling through the aprons or runways would potentially disrupt current operations.

- 7) *PREQB Comment 33. Page 6-5, Section 6.7, Paragraph 4: Please provide an explanation as to how pipeline impacts may be differentiated from other petroleum impacts related to nearby SWMUs / AOCs. This comment also applies to Section 7.7.*

Navy Response to PREQB Page-Specific Comment 33: A comparison of contaminant characteristics as well as the distribution and gradient of contaminants may provide some indication as to whether contamination is from the fuel pipeline or from another SWMU. No revisions to the text are proposed.

Evaluation of Response: *Please add this information to the appropriate sections of the text.*

Navy Response to Evaluation of Response: **The clarification will be incorporated into the text of the last paragraph of Section 6.7 and the second to last paragraph of Section 7.7 of the Revised Final Phase I of the Corrective Measures Study Investigation for SWMU 74.**

- 8) *PREQB Comment 43. Page 7-8, Section 7.9, Paragraph 2: Reference is made to the soil and ground water impacts in the areas of soil borings 74SB155 and 74SB156 being addressed as part of the AST 1995/AOC F work. Please clarify whether the PAH (benzo(a)pyrene) impact at location VP10b/DFM is also being further delineated and addressed as part of that effort.*

Navy Response to PREQB Page-Specific Comment 43: The occurrence of TPH contamination in the 7 to 11 foot bgs depth interval at 74SB155, 74SB156, and 74SB157 indicates that SWMU 74 is a likely source rather than the release from AST 1995 at AOC F. The conclusions in Section 7.8 will be revised to indicate that the TPH contamination at these three locations is likely from SWMU 74. The first bullet in Section 7.9 – Recommendations for Phase II, Segment B – DFM Tank Area will be revised to read as follows: □ TPH DRO contamination was detected in the 9 to 11 foot bgs depth interval at locations 74SB155,

74SB156 and 74SB157 and in the 7 to 9 foot depth interval at 74SB156. Ten borings will be advanced in the vicinity of these three locations, of which three will be converted to monitoring wells. Surface and subsurface soil samples will be collected from each boring location and groundwater samples will be collected from the three new wells. These samples will be analyzed for VOCs, LLPAs, metals, TPH GRO and TPH DRO. Based on the results of PID measurements and visual observations, an additional eight locations may be sampled to complete the delineation. This recommended sampling will address the benzo(a)pyrene detection in 74SB156. However, because of a lack of elevated TPH concentrations at 74VP10b/DFM, the detected benzo(a)pyrene in the 7 to 9 foot depth interval at this location is not considered a release from SWMU 74 and will not be further addressed under SWMU 74.

Evaluation of Response: Please note that benzo(a)pyrene was not detected in sample 74SB156 as stated in the comment above, rather it was detected in sample 74VP10b/DFM. Although this detection is not attributed to SWMU 74 and will not be addressed as part of this work, please identify the mechanism by which (or program under which) it will be addressed.

Navy Response to Evaluation of Response: It is noted that benzo(a)pyrene was not detected at sample location 74SB156. Benzo(a)pyrene was detected at sample location 74VP10b/DFM at the 7 to 9 foot depth interval. As indicated in the previous response, because of a lack of elevated TPH concentrations at 74VP10b/DFM, the detected benzo(a)pyrene in the 7 to 9 foot depth interval at this location is not considered a release from SWMU 74. However, since this sample location is associated with a valve pit (VP-10/DFM), and to maintain a high level of conservatism associated with this investigation, three additional borings are proposed in the vicinity of 74VP10b/DFM as confirmation of the presence/absence of TPH and benzo(a)pyrene. An additional bullet will be added to the text of Section 7.9 - Recommendations for Phase II, Segment B – DFM Tank Area that reads as follows:

- Benzo(a)pyrene contamination was detected in the 7 to 9 foot bgs depth interval at 74VP10b/DFM. Although not believed to be the result of a release from SWMU 74, three borings will be advanced in the vicinity of this location. Surface and subsurface soil samples will be collected from each boring location and will be analyzed for VOCs, LLPAs, metals, TPH GRO and TPH DRO.

Sampling locations for the three proposed borings in the vicinity of 74VP10b/DFM also will be shown on Figure 7-5.

Appendix A

- 9) *PREQB Comment 2. None of the field notes related to groundwater sampling recorded the actual flow rates used during purging and sampling. In all cases, notes state “pumped ½ speed”, “pumped ½ or less speed”, “pump speed is ~ 2/3”, or “pump speed – full”. It is unclear what these notes signify and how they correlate with actual flow rates. Therefore, it is unclear if the samples were collected at a flow rate of 100-250 mL/minute, as required in the EPA Region II SOP. Please clarify.*

Navy Response to Appendix A Comment 2: As indicated by this comment, the field notes do not quantify the actual pumping flow rate. This information will be recorded for subsequent field events.

Evaluation of Response: Flow rate measurements are required in order to comply with EPA Region II low-flow sampling procedures. The usability of these data is therefore questionable based on the lack of flow rate measurements. Please revise the text to reflect the limited usability of these data. When resampling the wells, please ensure that the proper procedures are used in order to obtain definitive data for use in delineation and assessing risk at the site.

Navy Response to Evaluation of Response: An additional item will be added to Section 3.10 – Deviations from the Work Plan, as follows:

- **Flow rates were not measured during the low-flow groundwater sampling that was conducted for Phase I of this CMS Investigation. Although this may introduce an increase in uncertainty with the associated groundwater sampling results, the results are expected to be acceptable for their primary intended use as a screening tool for TPH in groundwater.**

Appendix C

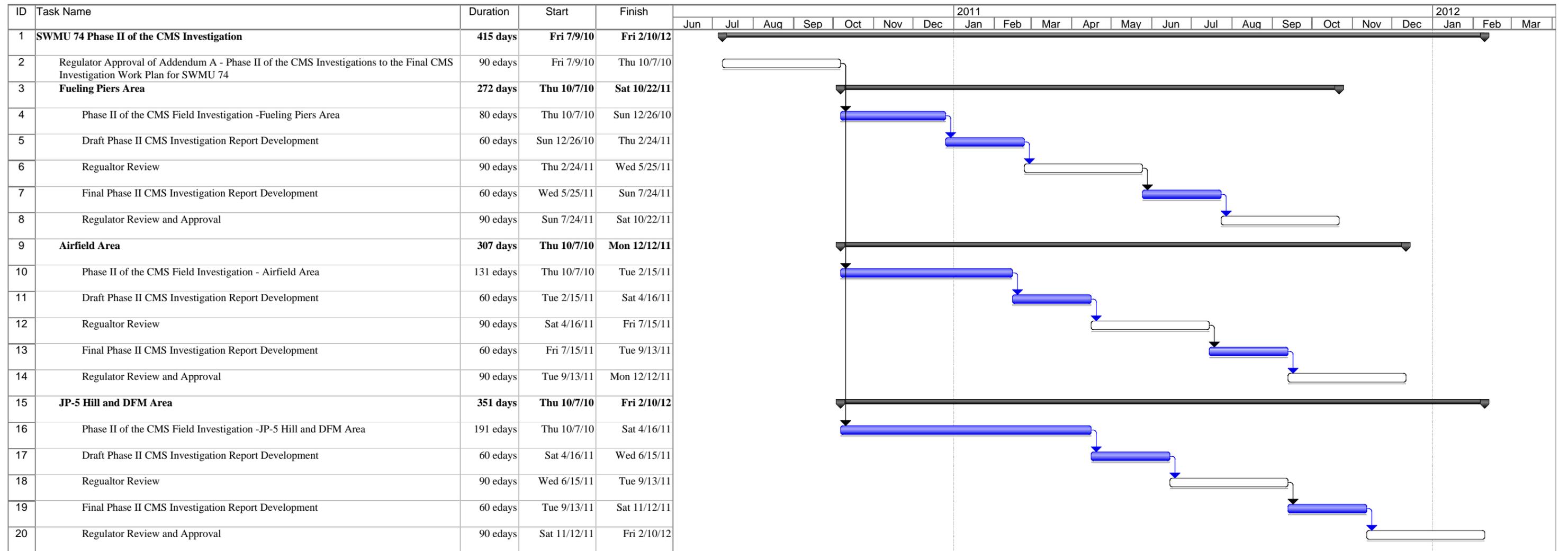
- 10) *PREQB Comment 1. The text discusses how the data validation guidelines were modified for blank contamination actions because the lab reported results down to the MDL instead of the reporting limit. The validation modification used causes positive results between the MDL and the reporting limit to be qualified as nondetect at the reported concentration. This is not consistent with the Region 2 validation guidelines which require that positive results between the MDL and reporting limit be qualified as nondetect at the reporting limit when affected by blank contamination. The methodology used in this report causes the blank-qualified nondetect results to have lower reporting limits which are not technically accurate. Please follow Region 2 guidelines for blank qualification. This comment affects VOC, PAH, TPH-GRO, and TPH-DRO, and metals sections in all data validation reports as well as associated data tables. Please revise accordingly.*

Navy Response to Appendix C Comment 1: This issue is currently awaiting resolution pending the outcome of the Response to Comment Letter for the Draft Phase I RFI for SWMU 60 (Former Landfill at the Marina) dated September 25, 2009. Once this issue is resolved, the final response will be applied to this document. The Navy position is that no revisions to the text or tables are proposed.

Evaluation of Response: PREQB acknowledges that the resolution of this comment is pending.

Navy Response to Evaluation of Response: No response required.

FIGURE 1
SCHEDULE FOR IMPLEMENTATION OF PHASE II OF THE CMS INVESTIGATION
SWMU 74 - FUELING PIPELINES AND HYDRANT PITS
NAVAL ACTIVITY PUERTO RICO



Note: SWMU 74 - SWMU 9 Area A/B and SWMU 9 Area C are not yet funded.