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BOB MARTIN
Commissioner

January 8, 2014

Wanda Green
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Re: Remedial Investigation/Feasibility Study Work Plan for Sites FTMM-22, FTMM-53, FTMM-59 and FTMM-68
Main Post & Charles Wood Area
Fort Monmouth, New Jersey
PI G000000032

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, dated September 2013, received on October 22, 2013. The report was prepared by Parsons Government Services Inc. (Parsons), on behalf of the U.S. Army Engineering and Support Center, Huntsville (USAESCH). As indicated in the report, activities are to be performed with the goal of Decision Document acceptance in compliance with the Comprehensive Environmental Response, Compensation, and Liability act (CERCLA), the National Contingency Plan (NCP), 40 CRF part 300 and "to the extent possible to meet the requirements of New Jersey Administrative Code (NJAC) 7:26E Technical Requirement for Site Remediation".

The work plan describes RI/FS activities to be performed at FTMM-22 (former CW-1 Wastewater Treatment Lime Pit at Building 2700), FTMM-53 (Building 699/former gas station), FTMM-59 (Building 1122/former auto repair shop), and FTMM-68 (Building 700/former dry cleaners). The following comments and questions are offered:

FTMM-22/CW-1 – Former Lime Pit at Building 2700

Chlorinated solvents remain of concern in this area. Although Section 1.8.1.4 reports data indicate the source has been entirely removed, the Department is not yet in agreement. The

Department does agree with Section 3.1.3, which states "additional data regarding VOC concentrations in soil near the former lime pit should be collected because the historical data set is limited and dated." As indicated in the submittal, three borings are to be performed, along three edges of the pit, to a depth of 20'; two to three samples are to be collected from each. Although this is acceptable, additional sampling is recommended. There has been speculation source material remains located under/trapped by the lime pit's concrete slab base. Has consideration been given to accessing/evaluating beneath the base/slab itself via angled or horizontal sampling to allow for possible determination of same associated with this feature?

The location of the Former Lime Pit in relation to monitor wells as denoted on Figures 1.4 and 3.5 does not correspond to its location as denoted on Figures C-12 and C-13. Please clarify which figures are accurate.

Ground water has been found to continue to exhibit elevated levels of several metals as well as TCE. The Department previously agreed the elevated levels of antimony, arsenic and lead found in ground water at this area of concern were reflective of naturally occurring conditions, and required no further action for metals in the ground water. TCE contamination remains documented in ground water samples taken from wells MW-28, MW-29 and MW-281. The Army proposes to resample these wells for VOCs using low-flow purging and sampling methodology to assess current ground water quality. Slug tests will also be performed on wells MW-29, MW-40, MW-281 and MW-291. The proposals are acceptable. Low flow purging and sampling must be consistent with the guidelines detailed in the Department's 2005 edition of the NJDEP Field Sampling Procedures Manual.

It has recently been determined 1,4-dioxane is frequently found as a co-contaminant with trichloroethene (TCE). To address concerns regarding the possible presence of 1,4-dioxane, review of the ground water analytical data previously generated is required. If 1,4-dioxane was not included in previous sampling efforts, evaluation for same must be included in future sampling episodes. The Interim Specific Ground Water Quality Standard is 10 ppb; any exceedences of same must be addressed.

FTMM-53/Building 699 – Former Gasoline/Service Station

Previous assessments performed in the area of this former gas station had identified elevated levels of volatile organics (benzene) and TPH in soil, but had not adequately defined the vertical extent of the contamination (Borings 3, 7, 10, 13, 14, 46, 47 & 48), nor the horizontal extent of the contamination to the north. The two borings proposed on the north side of Saltzman Avenue are acceptable for the necessary delineation of soil contamination in that direction, as are the three borings proposed beneath the canopy in the vicinity of the fueling islands (previously not specifically investigated).

As regarding the four proposed borings at areas previously noted as contaminated (Borings 2, 13, 14 & 47), it is agreed an assessment of current conditions in these locations is appropriate. The area of Boring 48, however, remains in question. Figure 3.6, which appears to represent certain pre-and post-injection soil sample results, does not provide the findings for the full vertical

extent of the '00 sampling, reporting only to the 66-72" interval for both the March '00 and the corresponding May '01 post-sampling. It is not known if the May '01 sampling included intervals beyond that depth. It is of interest, however, as in certain borings the March '00 results as shown on page C-17 indicate levels of contamination increased below that depth. For instance, in Boring 48, benzene was found at 110 ppm in the 66-72" interval in March '00, and at 260 ppm in the 138-141" interval. As it appears there is no correlating post-treatment value indicating completion of either vertical or horizontal delineation at Boring 48, contamination is considered to (horizontally) extend to Borings 49 & 52.

The former waste oil tank post excavation samples indicated TPH remained at 6,090 ppm and 11,600 ppm. Although Section 1.8.2 of the submittal indicates no further sampling is proposed as part of this Remedial Investigation, it is not clear why delineation is considered adequate. Are results from the geoprobe effort noted on page C-18 being utilized for same? If so, please indicate which borings are considered proximate to the former tank.

The PCE and TCE detected in ground water beneath the site are reported as suspected of being related to discharges from a former waste oil UST and/or from the former dry cleaners at adjacent site FTMM-68. The Army proposes to install two shallow wells to delineate the extent of the chlorinated VOCs. Ground water samples will be analyzed for VOC+TICs and lead. The proposal is acceptable.

The Army states that "selected existing wells" will also be sampled for site-related contaminants. This proposal does not specify the name of the wells to be sampled or the basis for selecting the wells. Without same, the Department cannot comment on nor approve the work plan. Our April 5, 2013 letter specifically referenced monitoring well 699MW-3 as not having been sampled since 2007, though the '07 results exceeded the Ground Water quality Standards for benzene and VOC TICs; inclusion of same in the anticipated sampling, or an explanation for its omission is required.

Ground water samples will be collected using low-flow purging and sampling methodology. Low flow sampling must be consistent with the guidelines detailed in the Department's 2005 edition of the NJDEP Field Sampling Procedures Manual.

As regarding concentrations of various metals found in ground water throughout Fort Monmouth, the "maximum MP background concentrations" – referenced in Section 3.2.1.2.5 – as presented in the historic Weston report/s, was not accepted by the Department. Although it is possible elevated levels of certain metals are reflective of naturally occurring conditions and sample turbidity (and which determination has been made by the Department at certain areas of concern, as above), that decision is not applied to the entire site, but is made on an area of concern specific basis only.

Slug tests will be performed on wells 699RW-4 and 699RW-11. This proposal is acceptable.

FTMM-59/Building 1122 – Former Vehicle Maintenance Shop

Section 3.1.5 indicates the site has been adequately characterized and that the RI may be completed following some minor additional sampling. Previous comments from the Department concerning FTMM-59, however, do not appear to have been addressed. An August 27, 2008 letter from the Department outlined deficiencies in a 2005 RI report for this site. The Army provided a response to the Department letter in a Remedial Action Progress Report (RAPR) dated June 2010, however, the Army's response for certain of the comments indicated the Department's concerns would be addressed in a future RAPR. A subsequent RAPR for this site has not been received. The two main issues of concern noted in the August '08 letter are as follows:

(a) BEX contaminated soils were identified in the vicinity of the No. 2 fuel oil UST excavation. The Department requested delineation of the soil contamination as well as installation of a monitoring well within or hydraulically downgradient of the excavation to assess ground water quality. See further comments regarding GW21, below.

(b) Free product was identified in certain geoprobe samples. Additional information is necessary, including a figure showing the location of the impacted geoprobes and lateral extent of the product.

Geoprobe boring GW21 (not shown on Figure 3.8 of the submittal, but noted in Appendix C on page C-32 – both the paper and electronic copy of which are almost illegible, page C-31 is only slightly more legible), located just north of Building 1122, exhibited levels of benzene, ethylbenzene and xylene above the residential and/or Default Impact to Ground Water Soil Screening Levels (Table 1) at 10' below grade. The submittal stipulates that as the exceedences are below the water table, they "do not require an additional investigation to meet the objectives of the RI/FS. Soil in this area was previously excavated to a depth of 8'..." (the depth to ground water). However, as per the *Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil* document, sampling below the ground water table is appropriate to determine if exceedences to the Direct Contact Soil Remediation Standard are present, or if the source of the contamination (e.g. an underground storage tank) is/was located below the ground water table. Based upon information submitted, delineation remains incomplete for this area of concern (AOC).

Service Bays #10 & 12 – elevated TPH – Section 1.8.3.4 (Hydraulic Lift Bay #12) references post excavation sample results above criteria, and Section 1.8.3.7 (Hydraulic Lift Bay #10) references TPHC to 21,619 ppm. Section 1.8.3.8 references sampling performed in March '10 which reportedly delineated contamination, however, it does not appear the locations or actual findings were included in the submittal. Although the Work Plan indicates the contamination "appears localized and additional soil sampling is not required during the RI to support the FS", insufficient information has been submitted to allow for comment (or support approval of adequate delineation).

Chemical Storage & Paint Booth Sheds – Elevated levels of SVOCs/PAHs, and lead have been found in the surface soil adjacent to the sheds. Vanadium has been found in shallow and deeper

intervals. The sampling proposed for delineation of the PAH exceedences is acceptable. The vanadium, found to 82.1 ppm, is "not believed to be site-related". Although this may be accurate, the referenced maximum background concentration at FTMM of 94 as per the '95 Weston report was never accepted by the Department as establishing "background" concentrations for the site. Further information in support of the assertion vanadium is representative of naturally occurring conditions is necessary.

The Army proposes the collection of ground water samples from two recently installed monitoring wells near the Chemical Storage Shed and Paint Booth/Shed. The document indicates the specific locations of these two wells is currently unknown, and is to be determined during a subsequent site visit. Comments regarding the locations of the wells are therefore pending.

Additionally, the Department's August 13, 2013 letter responding to the March 2013 Sampling and Analysis Plan for Remedial Investigation/Feasibility Study/Decision Documents indicated further concerns remained relative to this parcel.

(a) Questions regarding adequate investigation of the floor drains, hydraulic lifts and two oil water separators in the area of Building 1122 have not yet been resolved. Delineation requirements are therefore not resolved.

(b) Although the monitor well analytical results did not trigger an evaluation of the vapor intrusion (VI) pathway during the recent VI evaluation, data reported in the July '08 Site Investigation (SI) Report (Section 3.9) indicated elevated levels of TCE in subslab soil gas analytical results, which itself is a trigger for further VI evaluation as it may indicate levels of contamination of concern in the area soils or possibly beneath the building. Additional evaluation is necessary. This may include soil sampling to evaluate current soil conditions in the immediate area and/or additional vapor intrusion investigation, as was recommended in the July '08 SI Report.

(c) To address concerns regarding the possible presence of 1,4-dioxane, frequently found as a co-contaminant with trichloroethene (TCE), a review of the ground water analytical data previously generated is required. If 1,4-diozane was not included in previous sampling efforts, evaluation for same must be included in future sampling episodes. The Interim Specific Ground Water Quality Standard is 10 ppb; any exceedences must be addressed.

Due to the unanswered concerns of the Department, approval of the RI proposal cannot be granted at this time.

FTMM-68/Building 700 – Former Dry Cleaners

A leaking solvent UST was previously located outside the southwest corner of Building 700. Although 450 drums of impacted water and soil were excavated during tank removal, post excavation sampling indicated the excavation bottom (7.5') exhibited 23,889 ppm PCE in the Spring of '11, while a sidewall sample exhibited 20.4 ppm (Section 1.8.4.1 line 15 states the exceedence is on the western sidewall, while the sketch in Appendix C-5 shows the exceedence on the eastern sidewall; please clarify). Piping run sampling analytical results were unavailable.

The Army proposes to collect up to 15 soil samples from up to five soil borings located near the former UST and piping run, as well as ground water samples from two wells reportedly located in the southwest corner; analyses will include VOC+TICs. Six direct push points will be installed downgradient of Building 700 and grab ground water samples will be analyzed for VOCs. Based on sampling results from the monitoring wells and the push points, up to 6 additional direct push points will be installed to further define the horizontal and vertical extent of the chlorinated VOCs. Results from the ground water sampling will be utilized to determine placement of up to four monitoring wells which will be sampled for VOC+TICs. The proposal is acceptable.

Slug tests will be performed on two shallow monitoring wells and two deep monitoring wells. This is acceptable.

The proposal indicates ground water samples obtained from monitoring wells will be collected using low-flow purging and sampling methodology. Low flow sampling must be consistent with the guidelines detailed in the Department's 2005 edition of the NJDEP Field Sampling Procedures Manual.

Miscellaneous

It was unclear in some instances that the intended sampling interval was to be in the standard 6" increments. Although this is likely understood, please ensure sampling increments are in accordance with standard protocol, with an explanation provided if more or less than a six-inch increment is sampled because of poor sample recovery or other field logistical problems.

As indicated above, the scale and/or clarity of the maps was at times problematic, in both the paper as well as the electronic version. Although this applies to several of the maps, predominantly those of Appendix C, it particularly may be said of the maps/figures included in Appendix C as pages C-31 and 32. These were of insufficient clarity to withstand enlargement electronically, and insufficient scale to be legible on the paper version, and could therefore not be properly evaluated or considered.

As indicated above, "background" levels of metals, or the determination that elevated levels of specific metals are reflective of naturally occurring conditions, are to be made on an area specific basis. Those areas at which that determination has previously been made have been issued a formal letter including a statement of same.

Section 3.2.1.3.1 – line 36 – a typo appears to have inadvertently listed FTMM-59 as FTMM-53.

Figure 3.4 – Preliminary Conceptual Site Model Diagram for FTMM-68, appears to have inadvertently used "Former Lime Pit" in the primary source box, rather than FTMM-68's former dry cleaning operations.

Please contact this office if you have any questions.

Sincerely,

Linda S. Range
Bureau of Case Management

C: Joe Pearson, Calibre Systems
Rich Harrsion, FMERA
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