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NAVAL AIR STATION
MOFFETT FIELD, CALIFORNIA

RESPONSE TO COMMENTS
DRAFT FIELD SAMPLING PLAN

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

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Response to Comments on Rpt 193

RESPONSE TO COMMENTS OF THE EPA TO
NAVAL AIR STATION MOFFETT FIELD
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
DRAFT FIELD SAMPLING PLAN

FEBRUARY 26, 1992

This report presents point-by-point responses to comments received from the U.S. Environmental Protection Agency (EPA) in a letter dated 2/5/92 (received 3/2/92 from Mr. Lewis Mitani) on the draft field sampling plan dated 11/11/91 for Naval Air Station (NAS) Moffett Field, California. Point-by-point responses to comments are also included from the State of California Environmental Protection Agency Department of Toxic Substance Control (DTSL) on the draft health and safety plan, dated December 2, 1991. Since submittal of the draft field sampling plan, PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft final field sampling plan.

GENERAL COMMENTS

1. Appendix B needs to be expanded and inserted into Standard Operating Procedures (SOP).

   The aquifer pumping test data form, which includes the well identification (ID), project ID, well information, pumping rate and time, observation well information, recovering date, water level data, measuring equipment, start/ending time, and discharge data should be added into Appendix B. The daily drilling report sheet, which includes well information, driller, field geologist, daily activities (such as mobilization, decontamination, set-up, drilling, and E-logging [standby]), footage, sampling type, time, material used (such as bentonite, cement, or sand), and well construction information should be added to Appendix B. The Appendix B data sheets should be placed inside the SOPs. For example, ground water sampling logs should be included in SOP #3, ground water sampling, instead of in Appendix B.

   Response: *The aquifer pumping test data, daily drilling report sheet, and appropriate data sheets from Appendix B have been incorporated into specific SOPs. Appendix B was designed for easy access to data sheets.*

2. Incomplete Information from PRC SOPs

Methods such as air lift pumping applied in well development tend to strip volatiles from water, therefore, when VOC analysis of samples is required, the SOP of well development should address the fact that air should not be used in development. Field measurement of pH (SOP #6) referred to the Figure 1 in SOP #6. SOP #1 stated that prior to entry into any uncontrolled hazardous waste site, a site personnel protection and safety evaluation form (Form 6269) must be completed. SOP #1 did not provide Form 6269.

Response: *PRC has revised and updated all company SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The reference to Figure 1 in the field measurement of the pH SOP (SOP 012) has been omitted. The information on temperature's effect on pH is provided in Table 1 of SOP 012. The reference to Form 6269 in the site reconnaissance SOP (SOP 001) has been omitted. SOP 021 does address air lift pumping as it applies in well development. Air pumping can be used to develop a well that may be sampled for VOCs provided the well is given time to stabilize before any sampling activities are initiated.*

3. More SOPs are required for this field sampling plan.

Cone penetrometer/hydropunch sampling will be used for field sampling. The SOP of the Cone and Friction-Cone Penetration Test (ASTM D3441-86) should be included. The SOP of hydropunch ground water sampling is needed. After the punch, the borehole will be sealed and abandoned. The SOP of borehole and monitoring well abandonment should be included. The report stated that bentonite slurry can be used to fill the borehole. This is not true in some Bay Area counties. For example, Santa Clara Valley Water District has some special requirements for sealing the boreholes. These special requirements should be included in preparing the SOP for borehole sealing. SOPs of geophysical survey only cover ground penetration radar (GPR). The SOPs of electromagnetic induction (EM) and magnetometry (MAG) were not found in this report. The SOPs of downhole geophysical logging are also missing.

Response: *CPT and hydropunch activities will be subcontracted to specialty firms. These firms will be required to submit operational procedures on a case by case basis. PRC SOPs were developed for field work activities. Specific detail not covered in the SOPs are covered in site-specific work plans. SOPs for electromagnetic induction (EM) and magnetometry (MAG) will be developed by PRC if geophysical surveys are planned using these techniques. PRC has revised and updated all SOPs and these have replaced the earlier versions included in the draft final field sampling plan.*

4. QA/QC of SOPs is required.

SOPs in Appendix A refer to other SOPs for the measuring process. But the referenced SOPs are not the same as the SOPs in the originally referenced measuring process. For example, the aquifer pumping test (SOP #20) referenced the data logging procedure as SOP #10. But, in Appendix A, SOP #10 is a drilling method. The correct SOP for the data logger is #25. This problem was created when compiling the SOPs for this report by changing the original SOP numbers to form a sequential numbering in Appendix A without changing the referenced SOP numbers inside the text. This problem occurred in SOPs 10, (SOP #12, borehole grouting, was referred to, but was missing, and SOP #12 in Appendix A is the borehole sampling method, not the borehole grouting), 20 (referred to SOP #23, which is incorrect), 28 (referred to SOP #19, which is incorrect), and 29 (referred to SOPs 17 and 27, which are incorrect).

Response: *Comment noted. Proper numbering of the SOPs was inadvertently overlooked following the final rearrangement and compilation of the report. PRC apologizes for any confusion this may have caused. The SOPs have been updated and correctly cross reference other SOPs.*

SPECIFIC COMMENTS

Comment Number 1. Page 5, Figure 2. A NAS Moffett Field RI/FS site map appeared in many reports. Unfortunately, the map is incomplete: Site 17 and Site 15 (on Grant Avenue) are missing.

Response: *The map has been revised to reflect the change.*

Comment Number 2. Page 9, 1st paragraph. The report stated that the Defense Property Disposal Office (DPDO) maintained a 5,000-gallon waste oil tank from the 1940s until 1989. Another statement reported that both the tank and the sump were removed in 1981. Which is the correct statement?

Response: *A typographical error was made. The waste oil tank was maintained from the 1940s until 1980. The text has been revised to reflect the change.*

Comment Number 3. Page 15, 3rd Paragraph. Information on the abandoned wells which screened multiple aquifers and were abandoned improperly (and can serve as potential conduits) should be included in the additional information.

Response: *The text has been revised to reflect this change. As part of related activities, PRC has made numerous efforts to identify suspect and abandoned wells, and abandon the wells properly.*

Comment Number 4. Page 17, 2nd Paragraph. Surface geophysical survey is PRC SOP 9, not SOP 6.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The text has been revised to reference the correct SOP number.*

Comment Number 5. Page 18, 1st Paragraph. Water level elevation measurement is PRC SOP 4, not SOP 3.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The text has been revised to reference the correct SOP number.*

Comment Number 6. Page 18, 2nd Paragraph. Ground water sampling is PRC SOP 3, not SOP 4.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The text has been revised to reference the correct SOP number.*

Comment Number 7. Pages 6 through 19. The Navy should specify how many soil samplings, ground water samplings, and sediment samplings will be performed. Where are the sampling locations? What type of analytical analysis will be required? How many monitoring wells will be drilled? What are the depths and screen intervals of these monitoring wells?

Response: *As stated on page 1, paragraph 3, the purpose of this base wide field sampling plan is to provide general guidance for field methodologies and not the specific locations and numbers of samples. As necessary, field work plans and additional addenda for each operable unit and site will be produced prior to any field activities. The individual work plans will discuss in greater detail the objectives of the specific source control and RI/FS activities, and the frequency and location of sampling.*

Comment Number 8. Page 21, Table 2, Sheet 2 of 2. The notes stated that completed test method references are presented in Section 6.0, Table 6-1. However, there is no Table 6-1. In note b container types, items A and C are identical. If item C contains an error, it needs to be fixed; if C is actually the same as A, it can be deleted.

Response: *The reference to Table 6-1 has been corrected to read Table 5. In note b, container type C has been deleted because it is identical to container type A. Container types D and E have been renamed to types C and D, respectively.*

Comment Number 9. Page 22, Table 3, Sheet 1 of 2 Holding time for BNA, TPH (extractables), and organochlorine (OC) pesticides should be 7 days, not 7 days/40 days.

Response: *Footnoted describes non-CLP holding times from time of collection for all methods. The 7 days/40 days refers to the maximum number of days from sampling to extraction/the maximum number of days from extraction to analysis. For CLP methods "X" days refers to the maximum numbers of days form date of receipt by the laboratory to analysis (or extraction when applicable).*

Comment Number 10. Page 26, 1st Paragraph. What is the "Level D QC Program" for the low level VOC analyses?

Response: *The reference to a Level D QC Program has been omitted. The analyses, validation, and reporting will be performed as discussed in Section 7.0 of the QAPjP for NAS Moffett Field. The QAPjP is currently being prepared by PRC and James M. Montgomery, Inc.*

Comment Number 11. Page 53, 2nd Paragraph. The report states that cone penetrometer locations will be determined and discussed in other addenda. Does additional addenda mean the appendix of this field sampling plan? When will the additional addenda be prepared?

Response: *Additional addenda will be produced as separate documents, (for example site-specific field workplans) not as an appendix to this field sampling plan. The additional addenda will be prepared when specific sampling locations and events have been determined for each operable unit or site.*

Comment Number 12. Page 62, 1st Paragraph. Monitoring well drilling is PRC SOP 10, not SOP 22.

Response: *The text has been revised to reference the correct SOP number.*

Comment Number 13. Page 62, 3rd Paragraph. SOP 13 Unified Soil Classification System (USCS) for lithology logging did not state what kind of color chart will be used. What soil color chart will be used as the standard for color coding?

What will the minimum requirement of lithology descriptions in this program be during the logging?

Response: *The text has been revised to indicate that the Munsell color chart will be used as the standard for color coding. The requirements for lithology descriptions are described in detail in SOP 28.*

Comment Number 14. Page 67, 4th Paragraph. "Slug test" is commonly called a single-well aquifer test. However, in this report, a single-well aquifer test includes single well pumping, bail test, and slug test. Therefore, a single-well aquifer test, commonly called a slug test in this report, is not necessarily correct.

Response: *The text has been revised to indicate that a slug test is one type of single well aquifer test. See response to comment number 15.*

Comment Number 15. Page 69, 1st Paragraph. A slug test is strictly applicable only to fully penetrating or fully screened wells in confined aquifers of rather low transmissivity. The Navy should address the limitation of slug test as used in the text.

Response: *Slug tests performed on observation wells will not verify whether the wells will provide measurable drawdown during the pumping test. However, they may be used as guidelines for determining pump rates and as initial estimates of aquifer permeability. Additionally, slug tests may provide hydraulic data in areas where a pumping test may not be possible. In an ideal situation, a slug test would only be performed in a confined aquifer. However, Bower-Rice (1976) provide a method for performing and interpreting slug tests in an unconfined aquifer. SOP 023 has been revised to discuss the Bower-Rice method.*

Comment Number 16. Page 71, 1st Paragraph. Neuman and Thiem are not referenced in PRC SOP 20. PRC SOP 20 did not discuss the aquifer data analysis methods of Theis, Copper and Jacob, Hantush, and Boulton. Also, the limitations and requirements of the above-mentioned analysis methods are not discussed in SOP 20.

Response: *SOP 022 (Aquifer Pumping Test) does not attempt to discuss each specific aquifer data analysis method, but does provide reference to volumes which discuss the methods mentioned in the text. The SOP has been corrected and now includes references to the Theis, Cooper and Jacob, Hantush, and Boulton methods of data analysis.*

Comment Number 17. Page 71, 1st Paragraph. A table which summarizes the aquifer pumping data analysis methods according to the aquifer conditions (such as confined, unconfined, or semiconfined), well screen (fully penetrated or partially penetrated), and pumping rate methods (steady state or nonsteady state) may be necessary. For example, in a confined aquifer, if nonsteady state pumping full penetration are desired, the Theis's and Jacob's methods can be applied for the analysis. In a confined aquifer with steady state pumping and full penetration, Thiem's method will be applied. Many mistakes could be eliminated by following this approach.

Response: *A summary table for data analysis methods has been added to the aquifer pumping test SOP (SOP 022).*

Comment Number 18. Page 75, Last Paragraph. Does sealable roll-off boxes mean sealable roll-off bins?

Response: *Yes, the two terms are analogous. Sealable roll-off boxes has been changed to read sealable roll-off bins.*

Comment Number 19. Page 77, References. Kruseman and de Ridder, 1976 is inconsistent with Kruseman and de Ridder, 1990 as shown on page 71, first paragraph, and references of SOP 20.

Response: *Kruseman and de Ridder, 1990 is the correct reference. The text has been revised to reflect the change.*

Comment Number 20. SOP 1, Section 2.1, Page 2 of 5. Form 6269 was referred to, but was not found.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The reference to form 6269 in SOP 001 has been omitted.*

Comment Number 21. SOP 6, Section 3.0, Page 4 of 4. Figure 1 was addressed, but was not found.

Response: *The information on temperature's effect on pH has been included in Table 1 in SOP 12.*

Comment Number 22. SOP 10. Pages 5 of 13 and 11 of 13 are redundant.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. Redundant pages have been removed from the SOPs.*

Comment Number 23. SOP 10. SOP 12 borehole grouting was not found.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. Borehole grouting is described in hollow stem auger drilling SOP (SOP 045).*

Comment Number 24. SOP 17, Section 2.5, Page 6 of 8. Well development methods were discussed, but the limitations of development methods were not addressed. Methods such as air pumping shall not be used when samples are to be collected for VOC analyses (see General Comment #4).

Response: *Limitations of the methods are more appropriately discussed in the field reports. Air pumping can be used to develop a well that may be sampled for VOCs provided the well is given time to stabilize before any sampling activities. Development in this case should not be confused with purging.*

Comment Number 25. SOP 20. The aquifer pumping data sheet should be included in SOP 20.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The data sheet is included in the aquifer pumping test SOP (SOP 022).*

Comment Number 26. SOP 20, Page 1 of 11. Slug testing is SOP 21, not SOP 23.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The SOP has been revised and correctly cross references other SOPs.*

Comment Number 27. SOP 20, Page 4 of 11. What are XDs reading? Do XDs mean XD key of data logger? The PRC SOP 10 is the drilling method, not the data logger.

Response: *Transducers (XDs) measure pressure as described in SOP 022. Pressure transducers are defined on page 3, SOP 022.*

Comment Number 28. SOP 21, Page 2 of 6. Figure 1 was referred to, but was not found.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The SOP has been revised and contains all referenced figures.*

Comment Number 29. SOP 27. Table 1 is a duplication of Table 2 (page 21) in the report. See Specific Comment Number 8.

Response: *Duplication of tables may occur in the text of some work plans; however, it is necessary to keep the SOPs intact to preserve their integrity.*

Comment Number 30. SOP 28, Page 10 of 24. Sample packaging and shipment were referred to as SOP 19. The correct number is SOP 29.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The SOP has been revised* and *correctly cross references other SOPs.*

Comment Number 31. SOP 29, Section 2.1, Page 4 of 8. Sampling container specifications were referred to as SOP 17. The correct number is SOP 28.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The SOP has been revised and correctly cross references other SOPs.*

Comment Number 32. SOP 29, Section 1.3, Page 1 of 8. Sample container specifications were incorrectly referred to as SOP 27. The correct number is SOP 28.

Response: *PRC has revised and updated all SOPs. These updated SOPs have replaced the earlier versions and are included in the draft field sampling plan. The SOP has been revised and correctly cross references other SOPs.*

Comment Number 33. Appendix B. There are two kinds of field borelogs: one is developed by PRC and the other by J.M. Montgomery (JMM). There are also two totally different monitoring well installation records developed by PRC and JMM. Only one standard form can be used. The Navy should specify the correct form to be used for monitoring well installation.

Response: *Separate field borelogs and monitoring well installation forms developed by PRC and JMM will continue to be used for the purposes of efficiency and continuity during field sampling by separate contractors. This was discussed in detail with Ms. Roberta Blank (EPA) on March 23, 1992. However, all reports will have consistent borelog and completion information.*

RESPONSE TO STATE OF CALIFORNIA - ENVIRONMENTAL PROTECTION AGENCY DEPARTMENT OF TOXIC SUBSTANCES CONTROL COMMENTS ON THE DRAFT HEALTH AND SAFETY PLAN, DATED DECEMBER 2, 1991

Comment No. 1 — Appendix A does not provide chemical hazards or general types of monitoring for each location.

Response: *General chemical hazards information is provided in Section 3.1, and general procedures for monitoring are provided in Section 5.0. Specific chemical hazards and monitoring procedures for each location will be provided in location-specific technical memoranda prior to commencement of any field activities.*

Comment No. 2 — The drilling safety procedures are needed.

Response: *Drilling safety procedures are provided in Section 3.5.2 of the Draft Final Health and Safety Plan.*

Comment No. 3 — Personal monitoring section needs additional information such as how to calibrate individual monitoring equipment and what types of personal monitoring will be used. The media to be used for each activity needs to be indicated.

Response: *Monitoring parameters and types of personal monitoring equipment to be used during various field activities are provided in Section 5.0. Procedures for calibrating personal monitoring equipment are provided in Attachment 6.*