

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2

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February 3, 1995

Commander
Western Division
Naval Facilities Engineering Command
Attn.: George Kikugawa
Code 09ER3GK
900 Commodore Drive
San Bruno, California 94066-2402

Dear Mr. Kikugawa:

**DRAFT FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY RADIATION
SURVEY FIELD SAMPLING PLAN, ADDENDUM, NAVAL AIR STATION, ALAMEDA**

The State of California Department of Toxic Substances Control (DTSC) and the Department of Health Services (DHS) have reviewed the draft final Remedial Investigation/Feasibility Study Radiation Survey Field Sampling Plan Addendum. The comments of the DTSC and DHS are enclosed. These comments were prepared by Mr. Bill Watson of the Environmental Management Branch of DHS.

If you have questions regarding these comments, please contact me at (510) 540-3809.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas P. Lanphar", with a long horizontal flourish extending to the right.

Thomas P. Lanphar
Project Manager
Office of Military Facilities

Enclosure

cc. Mr. James Nusrala
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

Lt. Mike Petouhoff
Base Environmental Coordinator
Alameda Naval Air Station
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Alameda, California 94501

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Mr. George Kikugawa
Februarys 3, 1995
Page Two

Mr. James Ricks
U.S. Environmental Protection Agency
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Mr. Bill Watson
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STATE OF CALIFORNIA-HEALTH AND WELFARE AGENCY

PETE WILSON, GOVERNOR

DEPARTMENT OF HEALTH SERVICES

4840 Market Street, Suite D
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DW4 REV01 012595

NASA

Date: 25 January 1995

To: Tom Lanphar
Department of Toxics Substances Control
(DTSC) Region 2
Office of Military Facilities
700 Heinz Avenue, Suite 200
Berkeley, California 94710

Via: Rufus Howell

From: Bill Watson *Bill*

Subj: Review Comments of Draft Final Remedial Investigation/
Feasibility Study Radiation Survey Field Sampling
Plan Addendum

Encl: (1) Ltr dtd 13 Jan 1995 5100/62474 Ser 02/02A
Clarification of Archival Search Procedures

Attached for your examination are the review comments of the subject document by the Ventura Regional Offices (VRO) for the Environmental Management Branch (EMB) within the Department of Health Services (DHS). The document was received by the VRO on 7 October. Due to previous prioritized commitments from the DTSC the review by the VRO was begun on 24 January. These comments are in support of the pending Inter-agency Agreement between the DTSC and the DHS.

The subject documents were prepared for the Navy on 27 September 1994 by PRC Environmental Management, Inc. San Francisco, California under the Navy's Comprehensive Long-Term Environmental Action Navy (CLEAN) program.

Review Comments on
Draft Final
Remedial Investigation/Feasibility Study
Radiation Survey
Field Sampling Plan Addendum

General Comments

The cover letter for the subject document indicates that it will be reviewed by RASO. This is not in keeping with the agreement discussed previously. RASO was to be the primary reviewer of Navy documents.

The following two conditions are part of an verbal agreement that had been reached by the Naval Facilities Engineering Command and the VRO. They remain unresolved. These conditions have and still do effect the timely review and anticipated concurrence of the technical staff within the DHS of Naval Air Station Alameda (NASA) and other federal facilities undergoing Base Realignment and Closure (BRAC).

1. It was agreed to obtain the review and concurrence of the Radiological Affairs Support Office (RASO) for all documents containing discussions for the remediation of radioactive material at a BRAC facilities involving the Department of the Navy, e.g., NASA. The record of the review with concurrence is to consist of a cover letter from RASO within the submitted document stipulating their concurrence. Honoring this request would release the EMB of the responsibility as the primary reviewer for Navy documents. This previously agreed to review protocol would require normal "peer review" and concurrence by the cognizant Navy organization and would not allow the bypassing of this process. The comprehensive approach that RASO follows in this regard is contained in encl (1). Further, the State of California is not the primary regulatory authority for past practices involving the occupational uses of radioactive materials for the Department of Defense (DoD).

2. A second area of concern that was believed to have been resolved by the verbal agreement was the acknowledgment that the DHS does regulate licensed and nonlicensed (e.g. naturally occurring radioactive material) quantities

of radioactive material utilized by other than federal entities. As a result of the BRAC process the existing California regulations are Applicable or Relevant and Appropriate Requirements (ARARS) for radioactive material remediation at federal facilities. These regulations (California Code of Regulations, Title 17, Subchapter 4 Radiation) require that a Specific License and/or Authorization (Permit), be applied for, or submitted for review and subsequent concurrence by the DHS prior to commencing work involving sources of radioactivity. The practice of accepting the latter documentation from authorities other than the DHS, i.e., other state licensing authorities, the Nuclear Regulatory Commission, or the cognizant military authority (RASO for the Navy), is appropriate as part of the process known as "reciprocity".

Specific Comments

Section 1.1 Purpose pg 1

Does the reference to man-made sources of radioactive material refer to licensed material?

Section 1.2 Site Background pg2

Briefly document and discuss the occupational/operational history of the use of naturally occurring radioactive material (NORM) at NASA. What documentation was reviewed to determine that NASA was not a radium rework facility, or a storage facility and transshipper of NORM?

Section 1.2.1 Site 1 -1943-1956 Disposal Area pg 3-5

How is it known that the aquifer beneath NASA is not contaminated? What is the potential volume of NORM at site 1? What is the possibility that mixed/compound waste may occur at sites 1 & 2? Define and discuss the term "low-level radiological material" that is part of the waste known to have been buried at site 1.

Section 1.3 Radioluminescent Components pg 7

The discussion within the first paragraph of this section indicates that RASO provided some guidance in the determination that NORM would be the primary source of radioactivity at sites 1 and 2. What was the documentation reviewed and data that was interpreted that allowed this determination to be made? It is suggested that you request RASO to provide a probable inventory of equipment and devices containing NORM that may be of concern at sites 1 and 2.

The fourth paragraph infers that the decay daughters from radium could be detected at a soil depth of one foot. Using the field detection equipment specified in this document can you detect 1uCi of radium at a soil depth of 11" that has a moisture content of ~15% and has not been disturbed? Would you use the detection mode specified for Sr 90 discussed in Appendix A (HV2 PHA)?

Section 2.0 Task Descriptions pg 8-10

What "qualified" laboratory is to be involved with the 15%

soil confirmation analyses? The DHS Sanitation and Radiation Laboratory requests the opportunity to discuss split sample analysis and possible QA/QC protocol?

Provide a discussion of the details for the measurement protocol involved in the determination of the data points listed in the matrix titled Radiation Measurements And Analysis To Be Performed.

If the MDA for radium ≤ 0.5 pCi/gm for lab analysis, then what is the action level proposed for remediation of radium contaminated soil? What are the MDA and remediation action levels for Sr-90? What is the anticipated, or actual, background concentration for radium at NASA? For the monitoring personnel in the field obtaining the direct radiation data within the 12 acres each for sites 1 and 2, what would trigger their "flagging" of a data point? Are hard copies of these field measurements to be maintained and available for independent review?

Section 2.1 Site-Specific Background Radiation Survey pg 10
What criteria was used to determine the "undeveloped land on base" as likely sites for background measurements?

Section 2.2 Gamma Radiation Measurements pg 13
What are the qualification and training requirements for the field technical staff? How will the one meter above the ground surface be determined for field survey measurements?

Section 2.2.1 Gamma Exposure Rate Measurements pg 13
Appendix A provides the technical evidence for the effectiveness of a SPA 3 placed 15" above the ground surface in detecting Sr-90 in a deck marker buried up to 12" in soil. The explanation on page 13 indicates that a Ludlum Model 19 will be used to measure gamma at one meter. Is the sensitivity and efficiency of the Model 19 for the radiations being emitted by Sr-90 and Ra-226 greater than that of the PRM-5N with SPA 3?

Section 2.2.2 Gamma Count Rate Measurements pg 14
What are the specifics of the documentation obtained and reviewed by the contractor from the Navy (RASO) or NASA (Environmental Health and Safety Office) regarding the radiation safety program at this base and in particular sites 1 and 2?

Section 2.2.3.2 Gamma Spectroscopy in the Field Laboratory pg 17
What is the protocol for the drying of soil samples? What were the results of the review and concurrence of the field laboratory gamma spectroscopic analysis procedure by RASO? If this step has not been achieved it is requested that this

review and concurrence be obtained.

**Section 2.3 Field Surface Radiation Survey Of Sites 1 and 2
pg 19**

What instrumentation is to be used to determine specific surface areas emitting gamma radiation when the detector will be at a height of one meter?

Section 2.4 Surface Soil Sampling pg 19

Who within the Navy and the State of California has reviewed and concurred with the Navy CLEAN Ionizing Radiation Protection Program, referred to as PRC 1993a and the Navy CLEAN Health and Safety Program, referred to as PRC 1993b?

Section 3.1.1 Radiation Detection Measurements pg 20

Why was not the California Code of Regulations, Title 17, Subchapter 4. Radiation and the Guidance for Cleanup of Radioactivity on Closing Military Bases ... cited as Applicable or Relevant and Appropriate Regulations (ARAR's)?

Section 3.1.2 Field Radiation Detection Equipment pg 20

If the expected radiation field is to be mixed and consist mainly of Ra-226 and Sr-90 what energy range are you calibrating your instruments to for optimum detection in the field?

Section 3.1.3 Ionizing Radiation pg 21

When is personnel dosimetry required and what will it measure? The sixth bulleted action item in this section is not clear. How can work continue in a 2.0 mR/hr area if the action required is to stay outside this area? Does this mean personnel are to go to an area > 2.0 mR/hr and work? What is the likelihood of a ≥ 10 mR/hr field for the sites being investigated at NASA? How have radon levels been excluded as a health hazard to personnel? Are radon breath samples required of personnel?

Section 4.0 Quality Assurance Project Plan pg 22

Who within the Navy and the DHS has reviewed and concurred to PRC's Clean Quality Assurance Management Plan?

Appendix A

According to page 7 of this document the likely source strength for the Sr-90 deck markers to be found at NASA is 1 uCi. What was the source strength of the deck marker used in the RASO test? If they are not the same where did the 1 uCi value come from? The RASO test results for the PRM-5N with SPA-3 state that the best operational mode is HV2 PHA, yet in all instances the HV2 GROSS mode gave CPM's of at least 4 times greater and in two instances 5 times greater CPM's than the former; explain this. What would be the operational mode if the isotope of interest were radium?

Appendix B Sample Handling and Collection Procedures
pgs 139-145

The type and format of Appendix B is noticeably different from that of the rest of the subject document. It appears to be technically germane to this review process. Has RASO and the DHS reviewed and concurred to the larger document that this appendix is excerpted from?

Section 17.2.1 Systematic and Biased Surface Soil Radiological Sampling

The titles for the last two bulleted references are incomplete; provide them.

Section 17.2.1.1 Necessary Supplies

What is the anticipated inventory for sampling equipment? Where are the attachments referred to in this appendix?

Section 17.2.1.2 Specific Instructions

How are the sampling point coordinates determined? Why aren't the characteristics of the terrain/topography to be documented? What is the methodology for the sample identification numbers? Is it location specific? Provide examples of the latter. What are the field screening requirements for soil samples?

Section 17.2.1.3 Sampling Techniques

How is the transfer of field samples to "shippers" documented? Are signatures required at all steps for sample transfers? What is the soil volume or weight when sample containers are filled? What are the heat restrictions for the sample containers? If rocks and debris may remain in a sample because they represent typical soil configuration, what effect will varying geologic matrices and differing sample geometries and the differential uptake of isotopes by plants have on the data? What is the training given to PRC's technical staff that would allow them to make a visual observation discriminating out an acceptable soil sample?



DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND DETACHMENT
RADIOLOGICAL AFFAIRS SUPPORT OFFICE (RASO)
NWS P.O. DRAWER 260
YORKTOWN, VA 23691-0260

IN REPLY REFER TO:

5100/62474

Ser 02/02A

13 JAN 1995

00049

From: Officer in Charge, Naval Sea Systems Command Detachment,
Radiological Affairs Support Office (RASO)
To: Commander, Western Division, Naval Facilities Engineering
Command (ATTN: John Corpos)

Subj: CLARIFICATION OF ARCHIVAL SEARCH PROCEDURES

Ref: (a) PHONCON WESTDIV (J. Corpos)/RASO (LCDR Fragoso)
of 21 Nov 94

1. The following information is provided in support of the reference (a) request for amplification of NAVSEADET RASO archival search procedures in support of decommissioning efforts:

- a. Atomic Energy Commission Licenses, amendments and associated correspondence.
- b. Nuclear Regulatory Commission Licenses, amendments and associated correspondence.
- c. Navy Radioactive Materials Permits, amendments and associated correspondence.
- d. Reports of technical assistance visits.
- e. Technical assistance requests from commands.
- f. Reports of inspections and evaluations.
- g. Initial Assessment Studies.
- h. Minutes from command specific Radiation Safety Committees.
- i. Correspondence between RASO and the command.
- j. Corporate knowledge of RASO staff members.

2. In addition to the above, NAVSEADET RASO also considers the potential uses of exempt or generally licensed commodities and consumer products based on known and suspected operations conducted at the command and types of facilities located on the base in question.