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Subj: REPOSE TO DHS COMMENTS ON WELL DECOMMISSIONING METHOD,
NAVAL AIR STATION, ALAMEDA

Enclosure (1) is our response to the Department of Health Services' (DHS) comments of June 17, 1991 on the well decommissioning method for Naval Air Station (NAS), Alameda. Upon receipt of approval from the DHS the Navy will proceed with the preparation of an addendum to the Health and Safety Plan, revise the well decommissioning procedure, and proceed with the well decommissioning.

If you have any further questions regarding this matter, please contact Mr. Wing Wong, Code 1811WW at (415) 244-2537.

original signed by:

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Head, Installation Restoration Section

Encl:

(1) Response to DHS comments on Well Decommissioning

Copy to:

- ✓ California Regional Water Quality Control Board (Attn: Lester Feldman)
- PRC Sacramento (Attn: Kirk Switzer)
- James M. Montgomery (Attn: Steve Newton)
- NAS Alameda (Attn: Randy Cate)

Blind copy to:

1813, 1813EG, 1811WW, Admin Record
WRITER: W. Wong, Code 1811WW, X2537
TYPIST: M. Marshall, 1 Aug 91, DHS-Well Decommissioning
FILE: Alameda/NAS

PRC RESPONSE TO DHS COMMENTS (DATED JUNE 17, 1991)
ON WELL DECOMMISSIONING METHOD
NAVAL AIR STATION, ALAMEDA

For the convenience of the reader, the DHS comments are repeated in bold print. PRC's response follows the comments.

1. **The bentonite employed should be non-beneficiated bentonite.**

PRC response: Powdered bentonite, free of impurities or additives that could affect the quality of ground water, will be used.

2. **Specify the cement to be used. Cement without additives is recommended.**

PRC response: Type I or II Portland Cement will be used.

3. **The tremie pipe should be kept at the bottom of the well while the cement bentonite grout is introduced into the well. Or the tremie pipe should be placed at least twenty feet below the level of the grout in the well.**

PRC response: All 18 wells will be decommissioned by placing the tremie pipe at the bottom of the well.

4. **The compressive strength of the cement bentonite grout should be specified, as well as expected time to set-up.**

PRC response: The expected time for the cement bentonite grout mixture to set up is approximately 24 hours. Based on California Department of Water Resources Bulletin 74-90, Final Draft, January 1990, no specific compressive strength is required for grout mixtures. However, the grout mixture

will comply with DHS guidelines on content of water, bentonite, and Type I or II Portland Cement.

5. **Pre-hydrate the bentonite before adding the cement.**

PRC response: Bentonite will be prehydrated before being added to the cement.

6. **A ratio of 8 to 10 gallons of water to a sack of cement should not be exceeded. The water should be measured in the field.**

PRC response: A ratio of 10 gallons of water to a sack of cement will not be exceeded, and the water will be measured prior to mixing.

7. **Calculate the approximate volume of the sandpack and the minimum amount of cement to be placed in the well.**

PRC response: The volume of the sandpack will be calculated based on well construction details listed in the Well Decommissioning Plan. The total volume of grout to be placed in the well will also be calculated.

8. **The bentonite in the mix should not exceed six percent by weight. Weigh the bentonite with a scale in the field.**

PRC response: Powdered bentonite will be measured in the field prior to mixing and will not exceed 6 percent by weight.

9. **Perform a radioactive check on the water displaced to the surface.**

PRC response: Analyses of ground-water samples that were collected for the Solid Waste Assessment Test (SWAT) will be reviewed before well decommissioning begins. If the analyses indicate the presence of radioactive material in ground water, a Geiger-Muller counter will be used on SWAT-identified wells to monitor for radiation.

10. **Maintain well decommissioning logs and include the logs in the report. Field monitoring and sample analysis should be performed.**

PRC response: As mentioned in the Well Decommissioning Plan, daily activities that take place during well decommissioning will be documented.

DHS comment No. 16 changes the scope of work that was previously accepted by DHS. Excavation of near-surface soil is now required. Therefore, field monitoring instruments are now recommended. Monitoring equipment that will be used during well decommissioning will depend on what was monitored during installation of the monitoring wells for the SWAT. Monitoring equipment used for the installation of wells for the SWAT included a geiger-muller counter, organic vapor analyzer, radiation badges, noise dosimeter, particulate indicator, and Lower Explosion Limit meters for oxygen and hydrogen sulfide.

11. **Survey the wells that are decommissioned.**

PRC response: After the 18 monitoring wells have been decommissioned, their horizontal location will be surveyed.

12. **Specify the pressure to be applied. Maintain pressure until the grout sets-up.**

PRC response: The minimum pressure required to tremie cement-bentonite grout to the surface, with the tremie pipe at the bottom of the hole, will be calculated. The pressure calculated will be presented as a range and will be based on a slurry density ranging from 100 to 115 lbs/ft³. The

actual pressure required may be higher in order for the grout to infiltrate through the filter pack. The pressure recorded in the field will be documented.

13. **Include with the report any information available on well construction.**

PRC response: This information has been provided in the Well Decommissioning Plan on page 14.

14. **Casings that extend above the ground surface should be cut to ground surface.**

PRC response: Casing for all monitoring wells will be cut off two feet below the ground surface.

15. **Well water that is displaced to the surface and pumped into drums should be analyzed immediately for all suspected contaminants. The date of collection and the date of sampling from the drum for analysis should be noted on the drum.**

PRC response: Well water that is displaced to the surface during well decommissioning will be analyzed for disposal purposes, not for characterization. The analytes to be analyzed for will be selected after analyses of ground-water samples collected for the SWAT have been reviewed and potential analyses for disposal purposes have been identified.

16. **Removal of the upper two feet of casing, seal and filter pack is preferred to pressure grouting to the surface. Pressure grouting the wells to the surface may pose a problem with respect to future land use. A wide range of land uses would require removal in the future. The concerns that are raised about health and safety are legitimate concerns. But materials grouted in place may be more costly to remove in the future and identical health and safety concerns will apply at that time.**

PRC Reponse: The upper two feet of casing, seal and filter pack will be removed. The void area will be filled with cement bentonite grout to the ground surface.

17. Check with the base engineering unit to determine if base restrictions exist which would disallow pressure grouting to the surface.

PRC response: Restrictions to pressure grouting to the surface will be discussed with Naval Air Station, Alameda, officials before work commences.