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Comments on Feasibility Study Report for Site 1 Disposal Area at Alameda Point, Alameda California

General Comments

The remedial alternative recommended by the feasibility study is a good one with which to begin addressing the organic chemicals of concern at the site. A word of caution, though, only time, or better source characterization, will tell if the recommended alternative will successfully control the organics without source reduction.

The small risks the feasibility study reports that are posed by the organics do not appear to mandate the more extensive trenching that would be required to better characterize the source of the organics. Careful monitoring of concentration trends in groundwater over several decades may prove adequate to assess the sources.

The feasibility study is, however, severely deficient in addressing radionuclides. Why weren't cleanup levels for radionuclides set before evaluating remedies in a feasibility study? The study fails to include the information needed to justify the omission of metals and radionuclides from remedial action objectives and treatment goals. The Sierra Club will oppose transfer of the property to the City, even should the recommended alternative be implemented, until this deficiency is remedied. Depending on the responses to the questions below, the remedial design may also have to be altered.

The feasibility study does not clearly state that the contaminants downgradient of the funnel and gate system will be remediated. In such a passive system it is hard to see how this would occur. A more protective approach to the health of the bay would suggest using the pump and treat system; although it adds to the cost, it adds only 19% and guarantees the pollution will be removed.

It is not possible to tell if any remediation strategy will work, if the direction of groundwater flow is not known. It appears a comprehensive groundwater characterization has not been done for the Point or for the landfill area. This omission needs to be rectified.

The end receptors identified are terrestrial and are assumed to be consuming groundwater as drinking water. However, these are not the true end receptors. Aquatic species, especially benthic ones, are the true end receptors and a sampling plan needs to be developed and implemented around the landfill in all areas where it is adjacent to the bay.

1. How much above background were the radium samples that were detected in every groundwater monitoring well?
2. If groundwater radium levels are above background, what risks do they pose to flora and fauna?
3. What is the total amount of radium estimated to be present in the landfill and for how long will it continue to leach?
4. Will funneling much of the water in the first water bearing zone through the gate result in radium from the groundwater concentrating in Bay muds or flora and fauna?
5. Why weren't cleanup levels set for radionuclides before the feasibility study was performed? (Table A-1, last entry implies that cleanup standards for radionuclides will be set in the future.)
6. How far above background were the detected metals concentrations, including lead, in soil not only where they were found to be present at high concentrations, but in other areas as well?
7. Is the lower limit of debris in the landfill cells always underlain by a thick (minimum thickness of 1 foot) Bay Mud layer? Is the debris ever in hydraulic communication with the Merrit Sand or the Second Water Bearing Zone)?
8. Will the recommended funnel and gate capture and treat any water in the Second Water Bearing Zone?

An addendum to the feasibility study or letter included in the future proposed plan may be the administratively simplest method to formally respond to these comments.

Specific Comments

Page 2-3. Metals discussion wholly inadequate for both soil and groundwater. Please replace meaningless general statements that obscure the issues with specific comparisons to background or natural levels. For example replace "Metals occur in nature, and thus are not necessarily attributable to a specific source or compound." with "These metals (list them) occur at this site at concentrations below/near/significantly above background for soils/sediments/groundwater removed from manmade sources in the Bay.

Page 2-7. Do not combine chemical and radiological cancer risks with simple summations. The technical basis for this is hotly disputed as chemical and radiological cancers may involve independent mechanisms and any synergy between chemical and radiological exposures promoting cancer is likely to be non-linear.

Page 2-8. There is no mention of ecological risks in the intro to Section 2.3 titled "Human Health and Ecological Risk" and a discussion that completely fails to address ecological hazards posed by the ubiquitous radium.

Page 3-2. Why is protection by preventing exposure by inhalation not included as a remedial action objective along with dermal exposure? Would more stringent remedial objectives be required to protect against exposure via inhalation than exposure via dermal pathways?

Page 3-2. Why no remedial action objective for radium in groundwater, or for radium more than two feet bgs?

Page 4-8. The no action alternative is unacceptable to the Sierra Club. Other alternatives will be acceptable only if the questions posed here are adequately addressed. If metals or radium must be treated, the pump and treat alternative may be better as granular activated charcoal or ion exchange resins may be able to remove the metals from the groundwater.

Page 4-9. The 26 dump truck trips required to remove 255 cubic yards of bullet backstop material is reasonable. Should total truck trips exceed 10 per day for an extended period, we would encourage the Navy to remove the material by barge.

Page 4-9. Revise the statement "Radiological sources were statistically a rare occurrence and widely dispersed" by providing the percentage of samples in which radium was found or other detail clarifying what is meant by a "rare occurrence." The large numbers of radiological hits shown on Figure 3-2 convey the impression that radiological sources are a common occurrence, especially in the landfill cells.

4-11. Concur with the decision to use a monolithic cap with the recommended funnel and gate alternative, rather than an engineered cap. See little benefit in reducing vertical percolation through the landfill after tides and groundwater tables have been moving up and down it for 30 years. An engineered cap may be beneficial if metals make it necessary to pump and treat the groundwater - otherwise a heavy rainfall might overwhelm the ability of the pump and treat system to contain the contaminated groundwater.

4-12. Would appreciate a comparison of the expected lifetime of the cap with the expected lifetime of radium, its decay products, radon and any other radionuclides found or expected to be found at the site.

4-16. Recommend at least one long-term monitoring well per land fill cell as the contents of each cell likely differ. That would require immediate addition of three monitoring wells.

4-18. Strongly support providing regulators, in addition to the Navy, with unrestricted access to the site through dominant estate. Concerned about the EPA's role as support agency to the Navy as the Navy has an inherent conflict of interest in cleaning up the site.

Prepared by
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