

## Arc Ecology

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Mr. Michael McClelland  
Department of the Navy  
Engineering Field Activity West  
Naval Facilities Engineering Command, Code 62.3  
900 Commodore Drive, Building 105  
San Bruno, CA 94066-2402

**RE: Hunters Point Shipyard Remedial Investigation for Parcel E**

Dear Mr. McClelland:

I have carefully reviewed the Draft Parcel E Remedial Investigation Report and have several concerns both about the sampling program and the report itself.

My biggest concern regards the extent of groundwater sampling, particularly in the B-level and bedrock aquifers. With only nine wells screened in the B aquifer to yield 30 samples and 2 in the bedrock to yield 6 samples, I can't imagine how any parcelwide conclusions can be drawn about the nature and extent of groundwater contamination at Parcel E. Nevertheless my quick look at this sparse data suggests that petroleum compounds almost certainly have migrated into the B-level and groundwater aquifers. I suspect that other mobile compounds once used or disposed of at the Shipyard also have migrated to the deeper layers of groundwater.

This data gap worries me beyond the fact that it makes it difficult to evaluate suggested remedial actions. This data gap introduces significant uncertainties with respect to the nature and extent of contamination existing now in groundwater, thereby obscuring the Navy's liability after the Parcel is put to new uses.

I suggest that the Navy commit to performing addition sampling in the B and bedrock waterbearing zones to confirm that contamination has not migrated into the deeper groundwater. The Navy should also commit to installing and routinely sampling monitoring wells in the B and groundwater waterbearing zones.

I am also concerned that even in the sampling undertaken in the A-aquifer, groundwater and soil sampling do not appear to have been conducted such that sources of contamination in soil can be linked to groundwater contamination. It seemed that much of the Navy's sampling effort was directed at determining whether contaminants might be migrating to the Bay. I think this data gap can be resolved by careful analysis of existing

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sampling data. I suspect that if such an analysis were undertaken, some important data gaps would emerge.

#### **IR 11/14/15**

According to Appendix J "Index of Parcel E Remedial Investigation Boring, Monitoring Well, Piezometer, and Test Pit Logs," page J-12, no soil samples were analyzed for borings IR11B001 and IR11B002 through IR11B010. Yet these borings are shown on the maps (for example see Figure N.1-2) and data are reported in Section 4.9.1.2 and Table 4.9-15. Are the "no soil samples were analyzed" comments on page J-12 an error?

#### **Section 5.0 Summaries and Recommendations**

I look to the summary and recommendations section to provide an overview of conditions at Parcel E and to integrate the information detailed in the IR-site sections. Unfortunately, Section 5.0 fails to help me understand how contamination at the various IR sites might intermingle, be transmitted to groundwater, spread in groundwater out to the bay, travel by "preferential pathways," relate to contamination found at other parcels, degrade and transform, etc.

Furthermore, unsubstantiated claims are made throughout this chapter to explain sources of contamination. For example, on page 5-6, the Navy asserts that "soil containing copper (was) used as fill material throughout IR-01/21." Data to support this statement is not to be found in the IR report. On the contrary, I think the RI report makes a case that copper may be found at IR-01/21 because copper wire and waste was disposed of at the site. Furthermore, I think the case can also be made that application and disposal of copper-containing pesticides might also have contributed copper to the landfill soils. Also, contrary to the Navy's reasoning, I believe that when sandblast grit is used as fill material at the Industrial Landfill, then it most certainly is "related to the Industrial Landfill."

On page 5-7 the Navy asserts that PCBs found in groundwater and petroleum found in some soils at IR-01/21 are "probably due to an off-site source." (Why is this the case?) The same paragraph asserts that the presence of various toxic metals at concentrations above screening criteria are "probably not due to the Industrial Landfill and their distribution and concentrations are not indicative of a release." (How did they get there, then?) After all the study and sampling done the area (at great taxpayer expense), all the Navy can come up with is that releases are "probably" due to some off-site or other-than-the-Navy source? To be comfortable accepting such claims I need to be able to follow the line of reasoning that lead to such a conclusion. Chapter 5 consistently does not allow me to do this. (The fact is that all of the contamination at the IR-01/21 landfill is there because of Navy activities.)

#### **Appendix Q: Annual Mass Metal Loading from A-Aquifer Groundwater**

Although Appendix Q presents results of a fairly insensitive model, I found it to be a useful glimpse at the big picture. It also brought to mind a few questions:

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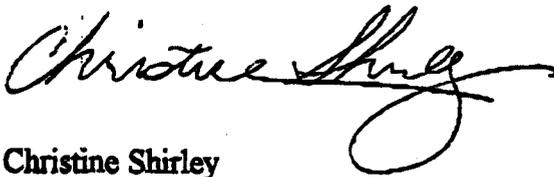
1. It is unfortunate that the Navy chose to compare mass loading rates with HGALs. HGALs are intended to be used for screening purposes during the FS stage of the investigation. HGAL concentrations are based on the 95th upper confidence limit on the 95th percentile. They are, therefore, the maximum concentration that credibly be considered background. It is almost certain, in other words, that actual background concentrations of metals in groundwater are lower than HGALs. It would have been more realistic to calculate ambient mass loading rates using the 50th percentile concentrations as reported in the "Estimate of HPS Groundwater Ambient Levels Technical Memorandum." Comparing these background mass loading rates to discharges from Parcels B through E leads to an entirely different conclusion than comparing discharges to HGALs.

2. According to this technical memorandum, 187,000 gallons per day of contaminated groundwater leaks or is inadvertently pumped from the base. Presumably groundwater contaminated with organics also leaves the base. What might be the human health and ecological risk implications of this discharge? The report also concludes that after sewage and stormwater systems are rebuilt, 63,000 gallons per day of groundwater will continue to leak off the base. Given that so much water is estimated to leak from the base, how can the Navy justify leaving contaminated groundwater unremediated?

3. Will the Navy modify groundwater remediation strategies at Parcel B as a result of estimates reported in this technical memorandum? How will Appendix Q be integrated into a basewide remedial strategy.

Thank you for this opportunity to comment of the Parcel E Remedial Investigation report. I look forward to reviewing the revisions. Please do not hesitate to call me if you have any questions or need clarification on these comments.

Sincerely,



Christine Shirley  
Environmental Analyst