

To: Lisa Geist

From: Kendra Zamzow

Subject: NEC Final Work Plan and Risk Assessment

Date: 16 January 2002

I agree with Dr. Scudato that testing of analytes for site characterization has been spotty and inconsistent. Until last year, when circumferential wells were installed around some sites, there did not seem to be any focus or concern on identifying the sources of contaminants. For instance, why was Site 19, where vehicles were worked on, never tested for PCBs? It is my understanding that PCBs were commonly in lube oils. At the meeting of January 14th, it was mentioned that the nature and extent of contamination will be determined after the final work plan is in place, while cleanup is ongoing. Would you specifically address the issue of when and how the nature and extent of contamination will be determined? It is extremely important to the people who use the Northeast Cape area that all sources of contamination be removed.

Relating to this, to ensure that contamination is not continuing after the final cleanup, some testing downstream needs to be conducted the summer after the cleanup is complete. While this may not be a usual method of operation, testing will ensure that contaminants have not been redistributed downstream (contaminating areas that heretofore have been considered relatively "clean"), and that all sources have indeed been removed.

In addition, I am still not entirely convinced that the arsenic found in tundra is natural to the area. I reviewed all the background samples that I had information on and came up with the following:

Tundra and sediment samples:

30SS902	As low
94 MW00	As 2.5 mg/kg (slightly high)
94 SS00	As 2.0
98 SS00	could not find data
01SS103	not detected (detection limit 1.0, reporting limit 30)
94 SW/SD00	As 1.0
98 SW/SD00	could not find data
98 SW/SD801	not looked for
98 SW/SD802	not looked for
99SD902	not detected
99SD903	not detected
SD101,126,127	– 2001 data. Need to see revised detection limit/reporting limit numbers.

I think that SW/SD 801 and 802 were great background sites, but they were not tested for metals. Samples from 94MW00 and from 01SS103 were very close to the direction finder road, and I would rather see background samples taken further away. In any case, this shows "natural As" at levels of 2.0 (or 2.5) and lower.

200-1e

Gravel samples were as follows:

99SS901 As 3.6

98SS801 not looked for

SS101,102, 201—2001 data. Need to see revised detection limit/reporting limit numbers.

Perhaps you folks have data that I do not have. From what I have, I just am not seeing anything that convinces me that levels above, say 4 mg/kg, are normal. If you could quote geological reports that show high arsenic in similar areas, that would certainly help. I was only able to find one USGS study of the Northeast Cape area (Jones and Forber 1976), and while they did not find arsenic, their detection limits were pretty high (around 50 ppm I think). They did find Pb, Zn, Cu, Mo, Ag, and Cr natural to the area.

Tests of military areas showed high arsenic in every single soil (gravel?), tundra, and sediment sample. A quick summary of all the areas where arsenic was tested for shows:

Site 5	SS100	4.8 mg/kg
Site 7	BH, MW,SS, SW/SD	2.7 – 14 mg/kg
Site 9	MW, SS, SW/SD	3.6 - 30
Site 16	MW, SS	3.1 – 5.6
Site 19	MW	4.4
Site 21	MW, SS, SW/SD	2.8 – 170
Site 27	MW	2.5 – 5.7

We don't know if it is high in the drainage or the Suqi, because it was never looked for.

My focus is on the health of the people of the area, and I need to pursue anything that may pertain to their health and well being. Right now that looks like oil residues, PCBs, PAHs, and arsenic.

Concerning the risk assessments for human health, I encourage Montgomery Watson to err far on the side of safety. The people of the area have a diet high in marine mammals, which already puts them at some risk. Risks, such as eating plants from Northeast Cape, will add to this. In addition, I come from a fishing community, and what I see is that people, when at summer camp, eat a large amount of fish for a few months, and then less in the winter. The body likely deals with getting a large exposure quickly, followed by less exposure, differently than spacing out 287 grams of fish per day. I know the science is not there to evaluate this, but it is a reason to again err on the side of safety when making risk assessments.

I thank the Army Corps of Engineers for taking the time to hear community comments. I look forward to the continued cleanup of the area.

Sincerely,

Kendra Zamzow