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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

October 13, 1993

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REPLY TO
ATTENTION OF

Environmental Branch

Ms. Anita Boseman
US Environmental Protection
Agency, Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Ms. Boseman:

We are writing in regards to the Rapid Response Project currently being conducted at the United Scrap Lead Superfund site. On September 29, 1993, Mrs. [redacted] contacted the Environmental Protection Agency and U.S. Army Corps of Engineers about perceived problems with their newly-installed drinking water well. Mrs. [redacted] complained of the following conditions:

- gray/white residue in the water
- pump seems slow
- water doesn't feel or smell right in shower
- dishes and clothes are stained by water
- milk jug of water drawn from bathroom sink and placed on porch turned brown or cloudy
- water quality has been worsening since well installation
- black staining in the toilet

As a precautionary measure, the Corps of Engineers has put the [redacted] residence on bottled water for drinking water use until the problems can be explored. Enclosed is a memorandum (Enclosure 1) from the Corps of Engineers' Fort Crook Area Office Project Engineer, Mr. Wally Shaheen, to the Technical Manager, Mr. Jeff Hubbard, detailing the Corps of Engineers response to the stated problems with the well. The following is a brief synopsis of the memorandum:

a. On September 30, 1993, a hydrogeologist from Frontz Drilling went to the [redacted] residence to investigate the problems. The volume of water and the operation of the pump were found to be within acceptable limits. The water softener was set in the bypass mode; therefore, the water was not being softened. Tests of a sample of unsoftened water and a sample of softened water showed the same hardness for each sample, indicating possible channeling through the softeners resin bed. This can occur if the softener sits idle. We will allow the softener to cycle through several regenerations of the bed, to see if the bed corrects itself. Replacement of the resin bed will be

determined upon input by the [redacted] and additional hardness testing, if approved by the Environmental Protection Agency.

b. On October 1,1993, Mrs. [redacted] reported that the water quality was improving after the softener was placed back on line. Mrs. [redacted] also let it be known that she was under the impression that the new well would completely eliminate all previously existing water quality problems. Mr. Shaheen explained to her that the water was still coming from the same source and would be essentially the same quality as before the new well installation.

c. On October 7, 1993, Mrs. [redacted] stated that the water quality had improved, but she didn't believe that it was as soft as prior to the installation of the new well.

During previous discussions with the [redacted] prior to design and installation of the well, there was no mention of any problems with the naturally occurring conditions or potential contamination of the aquifer, nor did the Remedial Investigation/Feasibility Study show any indication of potential problems. Therefore, it is the opinion of the Corps of Engineers that the water quality problems being experienced by the [redacted] are due to the water softener being bypassed during the month of September and to the naturally occurring conditions of the water in the aquifer. It is not believed to be a problem associated with the new well installation. A water sample will have to be collected and analyzed to verify if the water softeners resin beds have regenerated themselves. If they haven't, then the resin beds should be replaced. The water sample could be collected when the Corps of Engineers conducts its semiannual sampling of the wells located at the United Scrap Lead site.

Previous groundwater sampling has shown no evidence of contamination to the aquifer by past site operations, however, we feel that it would be prudent during the semiannual sampling that a one-time sampling and analysis of the [redacted] water be conducted for confirmation of their drinking water source. At a minimum, the parameters for analysis will be based upon possible contamination from past battery recycling activities. The proposed parameters are provided in Enclosure 2.

Although the Safe Drinking Water Act may not necessarily be applicable, the Environmental Protection Agency may wish to add additional parameters and bring the analysis more in line with the Safe Drinking Water Act's water quality criteria. An expanded list of proposed parameters is provided in Enclosure 3.

We make these recommendations solely for the purpose to obviate future liability (actual liability or the defense of non-liability) and not because of any evidence of ground water contamination caused from past activities conducted on the site.

Please review the two lists and provide us with your recommendation for the sampling parameters. Comments and questions should be directed to the Technical Manager, Mr. Jeffrey Hubbard, at (402) 221-7764.

Sincerely,

for S. L. Carlock, P.E.
Chief, Environmental Branch
Engineering Division

Enclosures

USL water well problem

On September 29, 1993 information was gathered from Anita Roseman/USEPA and Mrs. [redacted] about perceived problems the [redacted] were experiencing with the water quality from the drinking water well installed the last week of August, 1993. Mrs. [redacted] complained of the following conditions:

- gray/white residue in the water
- pump seems slow
- water doesn't feel or smell right in shower
- dishes and clothes are stained by water
- milk jug of water drawn from bathroom sink and placed on back porch turned brown or cloudy
- water quality has been worsening since well installation
- black staining in the toilet

After discussions with Rick Grabowski/USACE, it was decided to direct OHM Corp. to intitiate bottled drinking water service for the [redacted]. I informed Mrs. [redacted] that this was a precautionary measure only and they could continue to wash and bathe in the water. I also directed OHM to dispatch the well drilling company representative(hydrogeologist) to inspect the situation first hand. The hydrogeologist(hydro) visited the [redacted] residence on September 30, 1993.

The hydro began inspecting the system at 10:30am by turning the faucet on in the bathroom sink. He noted that the water was clear. The hydro also observed that the water softener was set in the bypass mode so that the water was not being softened. There was salt in the softener. The hydro drew an unsoftened water sample for testing from an outdoor faucet. The hydro then engaged the water softener so that the water would be softened and asked the [redacted] to leave the water running outdoors until he returned.

At approximately 3:00pm the hydro returned and found that the water was turned off, but the [redacted] indicated to him that they had just turned it off. The hydro turned the water back on outdoors and allowed it to flow for several more minutes. He then took a sample of the "softened" water for testing and observed that the water now felt somewhat softer than before.

A newly installed water well must be chlorinated to eliminate bacteria in the drinking water. The water softener was placed in the bypass mode by the installation team the last week of August, 1993 to avoid introduction of this chlorinated water

into the softener while complete flushing of all water supply lines began. The [redacted] were asked to continue flushing the water lines for several days by watering the newly installed sod in the backyard with the softener still being bypassed. An [redacted] family representative was also shown how to place the softener back in operation whenever the flushing phase was completed by resetting the bypass valve. It appears that the bypass valve was not reset and the well water has been bypassing the softener since the last week of August, 1993. Many of the water quality complaints from the [redacted] can be attributed to the hard(unsoftened) water. The only two complaints that remain suspect are the "slow pump" and black staining in the toilet. The hydro did not observe that the pump or flow were being unusually taxed and could possibly attribute the black toilet stains to iron and manganese in the water.

On October 1, 1993 Mrs. [redacted] reported that the water quality had improved. She admitted that she didn't know the softener was bypassed. I informed her that I would check back in one week and would continue to supply bottled water until it is determined there is no true water quality problem. Mrs. [redacted] also admitted that she was under the impression that the new water well installation would completely eliminate all previously existing water quality problems such as taste, odor and clarity. I explained to her that the water is from the same source and would be essentially the same water which was being supplied before the new well was installed.

On October 4, 1993 the hydro informed me of the following:

- the unsoftened water sample was the same hardness as the softened water sample(21 grains hardness). This might indicate that the well water is now being channeled through the softener resin bed instead of flowing across the entire bed. This sometimes happens when a softener is idle for an extended period. We will allow the softener to cycle through several regenerations of the bed(one week) and determine by input from Mrs. [redacted] or additional testing whether the softener resin bed needs replacement.
- the unsoftened water sample became more discolored than the softened water sample indicating that the softener is mechanically removing some of the iron in the well water. This condition is typical of high iron content and is aligned with the [redacted]'s experience with a jug of unsoftened water.

Waleed Shaheen, Project Engineer
Ft. Crook Area Office

FIELD	
Turbidity	
pH	
eH	
Temperature	
Conductivity	
Dissolved Oxygen	
LABORATORY	
Arsenic	206.2
Barium	200.7
Cadmium	200.7
Calcium	200.7
Chromium	200.7
Copper	200.7
Iron, total	200.7
Lead	239.2
Magnesium	200.7
Manganese, total	200.7
Mercury	245.2
Potassium	200.7
Selenium	270.2
Silver	272.2
Sodium	200.7
Zinc	200.7
Manganese, Dissolved	200.7
Iron, Disolved	200.7
Flouride, Chloride, Nitrate, Nitrite, Bromide, Phosphate, Sulfate	STD METH 4110
Sulfide	376.2
Carbonate, Bicarbonate	
Total Dissolved Solids	160.2
Hardness	130
Alkalinity	310.1
Total Organic Carbon	415.1
Odor	140.1
Color	110.2
Heterotrophic Plate Count	STD METH 9215
Total Coliform	STD METH 9221 or 9222
Sulfur and Iron Bacteria	STD METH 9240

FIELD	
Turbidity	
pH	
eH	
Temperature	
Conductivity	
Dissolved Oxygen	
LABORATORY	
Arsenic	206.2
Barium	200.7
Cadmium	200.7
Calcium	200.7
Chromium	200.7
Copper	200.7
Iron, total	200.7
Lead	239.2
Magnesium	200.7
Manganese, total	200.7
Mercury	245.2
Potassium	200.7
Selenium	270.2
Silver	272.2
Sodium	200.7
Zinc	200.7
Manganese, Dissolved	200.7
Iron, Disolved	200.7
Volatile Organic Compounds	524.2
Pesticides	507 and 505 or 508
Chlorinated Acids	515.1
PCB's	505 or 508A
Carbamates and Carbamoloximes	531.1
CN	335.2
Flouride, Chloride, Nitrate, Nitrite, Bromide, Phosphate, Sulfate	STD METH 4110
Sulfide	376.2
Carbonate, Bicarbonate	
Total Dissolved Solids	160.2
Hardness	130
Alkalinity	310.1
Total Organic Carbon	415.1
Odor	140.1
Color	110.2
Phenolics	420
Heterotrophic Plate Count	STD METH 9215
Total Coliform	STD METH 9221 or 9222
Sulfur and Iron Bacteria	STD METH 9240

It is the opinion of the USACE project team, that installing a new drinking water well for the [redacted] has, in effect, provided an alternate drinking water source. EPA has a moral, if not legal, obligation to demonstrate that the water source is indeed safe to drink. Although the Safe Drinking Water Act is not necessarily applicable, it is our opinion, that a one-time sampling and analysis event to demonstrate compliance with the SDWA water quality criteria would be appropriate and in the best interest of the Government.

The additional analysis (see Attachment 1) would cost approximately ???? more than the cost of only analyzing for the site contaminants. When compared to the fixed costs of the sampling event (preparation time, mobilization/demobilization, actual site labor, sample shipment, etc.) or the cost of the removal action, or the total cost of the project, this additional cost is insignificant and well worth the benefits of mitigating future liability (actual liability or the defence of non-liability) and improvement of community relations.