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Depts LSB-021
12-1-94
3 pages
Breese

TO	H. E. McLean	ADDRESS	561 Canoga
FROM	S. Greenfield	ADDRESS	595-94 SanSu, Area 1, Eng. Bldg.
PHONE	218 SanSu	DATE	31 October 1957
SUBJECT	WASTE WATER PROBLEM, BRANDEIS CAMP INSTITUTE	[redacted]	

During the weekend of the 19th and 20th of October, the writer was apprised of a problem existing at the Brandeis Camp Institute in Simi Valley with regard to waste water which the Propulsion Field Laboratory was apparently releasing onto the Brandeis property which adjoins us at the north. The complaint indicated that discolored and polluted water was being released.

On Monday, October 21st, the writer contacted the Public Relations Office and made that office aware of this problem, and on October 23rd, Mr. Herbert McLean and the writer visited the Brandeis Camp Institute where we spoke to Dr. S. Bardin, the Camp Director, and to Mr. Charles Flory, the Camp Maintenance Foreman. Mr. McLean and the writer visited the creek bed where the discoloration had been observed and samples of the discolored water and colored sludge from the banks of the creek were obtained. Dr. Bardin informed us that approximately six months ago they registered a complaint with the Simi Valley Sheriff with regard to similar discolored water which was being released on their property. Subsequent to this complaint some member of Rocketdyne spoke with Dr. Bardin, and it is believed that some promise of corrective measures was given at that time. We have not been able to trace this conversation more accurately than this. Public Relations was not informed of the Sheriff's visit. In fact, two visits were made by the Sheriff, and presumably the Sheriff contacted Industrial Security.

On October 23rd, preliminary chemical analyses were run on the samples of discolored water and mud sludge taken from the Brandeis Camp property. The water shows a Ph of 10, indicating moderately basic (caustic) water. Centrifuging the water sample results in the separation of very finely divided solid matter with a resultant clear supernatant water. The water shows no qualitative test for iron, although the original water sample was discolored rust red. Adjusting the Ph of the discolored water with hydrochloric acid from 10 to acid, Ph 1, results in the evolution of gas, probably carbon dioxide, with a distinct reduction of the red discoloration. Infrared analysis of the water shows no trace of hydrocarbon (C-H) materials. The sludge, which was a deep blood-red in color, was extracted with carbon tetrachloride and analyzed with infrared. A strong indication of hydrocarbon (or C-H bonding) was observed.

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Louise Breese RSB-390-0356

On October 24th, additional samples of the discolored liquid and mud sludge was obtained from the Brandeis Camp, and a sample of stagnant water beneath a vehicular bridge on an approach road to the Brandeis property from Highway 118 in the Simi Valley was obtained. The samples from the creek bed once again showed similar results and the sample from beneath the vehicular bridge, although colored brown-to-beige, did show a trace of hydrocarbon, probably the result of fumes and droppings from automobiles passing over the bridge. Again, the discolored liquid taken from the Brandeis property in the drainage creek from Propulsion Field Laboratory showed no hydrocarbon.

On October 25th, at the writer's request, Mr. L. S. Breese of Industrial Engineering, obtained samples of the effluent water from CTL 2 and the LOX Plant, both of which drain into a common canyon which then empties onto the Brandeis property. The CTL 2 water was crystal clear with no odor and a Ph of 7, indicating neutral. The LOX plant effluent water was slightly turbid with no odor and a Ph of 8, slightly basic. Mr. Breese noted that the bank of the drainage ditch from the LOX Plant was heavily coated with a white powdery substance, samples of which were obtained and brought to the Laboratory. It was ascertained that this white powdery material is a highly caustic material, probably sodium hydroxide. Sodium hydroxide is used in the LOX Plant to absorb carbon dioxide from the feed air going to the compressors. On occasion, these absorbers are maintained, and apparently on at least one occasion the contents of the absorbers were emptied into the drainage ditch.

On October 28th, at the writer's request, Mr. Breese went to the Brandeis property and with Mr. Flory, the Maintenance Foreman at Brandeis, proceeded to hike up the drainage ditch in question to determine the extent of discolored water existing to the property line. They found discolored water up to, and probably over, the property line into North American Aviation premises (Air Force property). Additional samples of discolored water and of mud sludge were obtained at that time.

On October 29th, Mr. Breese and the writer obtained samples of highly discolored water from a stagnant pool adjacent to the drainage from the LOX Plant in Area 2. The drainage from the LOX Plant at that time was running clear with a Ph of 8, while the discolored stagnant water ran Ph 10, or caustic. In addition, we noticed a large pool of stagnant water adjacent to the LOX Plant which had a very heavy scum of hydrocarbon material floating on top of it. Both the banks of this pool of water and the banks of the drainage ditch from the LOX plant show evidence of the same type of material. It was noticed on the banks of the drainage ditch on the Brandeis property.

Samples of all liquids are being submitted to commercial chemistry laboratories for a more detailed analysis and verification of our findings. We are principally interested in whether the discolored water which now exists in the drainage ditch at Brandeis Camp is suitable as raw water for eventual drinking purposes, and whether ground seepage could adversely affect ground water supplies (at Brandeis Camp).

Results of these analysis will be forwarded to you as soon as we have them; probably this week.

I would like to make a few informal and tentative observations as to what I have seen thus far of this problem. I believe that the LCI Plant is the offender, although it is not unlikely that much earlier this year an improperly operating skimmer dam at CTL 2 could have released some hydrocarbon bearing water which contributed to the formation of the mud sludge on the drainage ditch at Brandeis Camp. The LCI Plant effluent water undoubtedly has contained hydrocarbon products at one time or another and has similarly contained high concentrates of caustic material as evidenced by the deposition of caustic material on the banks of the drainage ditch. There is little doubt in my mind that the discolored water on Brandeis property is not poisonous for human consumption, although it is probably capable of destroying vegetation and, if consumed by animals, might cause intestinal disorders.

As to possible means for correcting the situation, I would imagine that first would be the elimination of the adulterants from our waste water, or the elimination of the dumping of such water into the Brandeis Camp property. Insofar as what we can do with respect to the discoloration of the water and the sludge on the drainage ditch at Brandeis Camp; we could proceed to neutralize the stagnant pools with a mild acid that would reduce the discoloration, and furthermore, we could acquaint the Brandeis people with the fact that the sludge is a non-poisonous material of a hydrocarbon nature, which is insoluble in water and should not be capable of penetrating subsoil to reach ground water.

I will be glad to supply you with any details or further information which you might like to have regarding any of the matters here discussed.

SG:rg

S. Greenfield
Group Leader
Applications
Research

cc: H. D. Sobel 564-5 SanSu Area 2
L. S. Breese 564-5 SanSu Area 2
G. A. Miller 564-5 Garage