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File: 62.8

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This will acknowledge receipt of your letter of July 31, and the attached copy of Col. Wainer's letter to Harold E. Beatty. We thank you very much for referring this matter to us.

Dr. Kehoe recently issued a publication entitled "Methods for the Purification of Water After Its Transportation and Storage in Cans, Drums, and Tanks That Have Been Employed as Containers for Leaded Gasoline".

Although small drinking water canteens were not subjected to detailed study, five gallon cans which had been used for the transportation of leaded gasoline were investigated. The following quotations from Dr. Kehoe's publication would seem to apply to the situation described in your correspondence:

"5-Gallon tin cans can be cleaned effectively by a thorough rinse with soap and water, followed by several rinses with clear water. Water stored in these cans does not pick up dangerous quantities of lead, but should be used promptly to avoid the development of color and sediment in the form of rust."

- ABSTRACT Page -1-

"Five-Gallon Tin Cans

Two cans were filled, one with aviation gasoline, the other with an ordinary grade of leaded fuel (Sohio X-70); they were then emptied, drained, and allowed to air. After sufficient time had elapsed (30 minutes) they were half filled with water, 1oz. of ordinary powdered soap was added and the can was shaken vigorously for 3 minutes. The soapy water was discarded and the can was rinsed with clear water, filled to overflowing, emptied, and filled again with tap water. The following results were obtained:

Can #1 - Aviation fuel

0.003 p.p.m. Pb after 24 hr.
0.065 p.p.m. Pb after 1 week
No odor

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Can #4 - Sohio X-70

0.003 p.p.m. Pb after 24 hrs.

0.110 p.p.m. Ph after 1 week

Very faint odor

Other methods of cleaning, such as draining and spontaneous airing, followed by rinsing several times with water, or by simple filling with water to displace vapors and droplets of gasoline, gave waters which showed a lead content no higher than those given above, but the gasoline odors were decidedly heavier.

An additional series of observations was carried out to determine the extent of lead contamination that occurs when water is stored in tin cans for an extended period of time. Various types of water were examined in this respect. The results are listed in Table 5. After 1 week there was a decided pick-up in rusty sediment and color, especially with the chlorinated samples, but the increase in the lead content was insignificant and decidedly less than that observed in the case of the cans employed in the cleaning tests. This result was surprising since the cans used in this second experiment were said to have been soldered with a lead-containing solder, and one expected to find an increased lead content in water stored in them for a considerable period. The work was checked, therefore, with 5 fresh cans, with results that agreed substantially with the findings listed in Table 5. As it is hardly likely that water will be kept in such small containers for more than a few days, these observations demonstrate that 5-gallon tin cans can safely be used to transport drinking water."

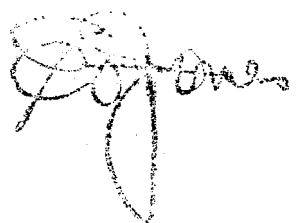
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The portions of the report which we have quoted would appear to justify the reuse of the canteens in which gasoline samples were submitted to you in their normal service, provided the cleaning procedures outlined were carefully followed.

We believe, however, that this entire matter should be presented to the proper authorities in the Army for their information and for official clearance. The proper person, we think, is Lt. Col. Jack J. Hinman, Jr., C.E., Chief, Water Supply Section, The Engineer Board, Fort Belvoir, Virginia.

Very truly yours,

O. B. LEWIS

By: 

EOJ:DLB

P. S. Opinions and quotations in this letter are for your information alone and should probably not be passed on to the Army.

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