

Alert

WATER TREATMENT PROCESS

AT MCAS

CAMP LEJEUNE, NORTH CAROLINA

PREPARED BY

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290 S. W. BROAD STREET

SOUTHERN PINES, NORTH CAROLINA

JUNE 1988

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2. Ammonia Addition (Chloramination)

A. Equipment -	\$ 7,500.00
B. Installation -	<u>15,000.00</u>
D. Total	\$22,500.00

These figures do not include system design and installation figures will vary depending on the present configuration of the plant. The cost of operation of the chlorine dioxide generation scheme would also be greater.

Based on the above analysis, we recommend the installation of the ammonia feed system. Such a system would afford a disinfecting efficiency similar to the present system. The results of our information on THM formation versus residual distribution network time and our hydraulic analysis indicate that no piping additions would be worthwhile. We therefore recommend none.

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SECTION 4: CONCLUSIONS, RECOMMENDATIONS AND ESTIMATES

The results of sampling and analysis confirm the existence of a trihalomethane problem at the air station area. THM formation potentials vary widely within the system but the average value found in the distribution system was approximately 100 ppb, the acceptable limit for THMs. This value, of course, will not be marginally acceptable when the acceptable limit is reduced to 50 ppb.

The THM values were found to increase rather rapidly after exposure to free chlorine roughly doubling in four hours. The values did not increase significantly over the next thirty-six hours indicating that the THM formation occurs during a relatively short period of time. This condition indicates that the THM problem is not a distribution system problem. Our original conjecture, that distribution system modifications might eliminate the problem, is not corroborated by the analysis.

Hydraulic analysis undertaken on the above faulty premise did not appear to accomplish much in the way of improved water distribution when the system was modeled including two logical choices for pipeline additions.

After looking at possible treatment schemes to eliminate the THMs formed due to the present chlorination, the two reasonably acceptable alternatives were the addition of chlorine dioxide and ammonia.

Relative costs of the two are as follows:

1. Chlorine Dioxide Generation:

A. Equipment -	\$24,750.00
B. Installation -	<u>24,000.00</u>
C. Total -	\$48,750.00

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