

*Fall - Lab memo*

CHRONOLOGY

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- Summer 84 NACIP sampled 22 wells identified as potential problems due to proximity.
- 30 Nov 84 Received results (ESE study). Well 602 positive for benzene. 602 was shut down and resampled.
- 4 Dec 84 Sampled Hadnot Point Water Plant (HP) raw and treated water, plus wells 601, 603, 608, 634, 637 and 642 because of their proximity to 602.
- 6 Dec Received test results (Table [1]). Wells 601; 602, 608, raw and treated water positive for Trichloroethylene (TCE), trans-1,2-Dichloroethylene (DCE), and Tetrachloroethylene (PCE). Wells 602 and 608 also showed other Volatile Organic Chemicals (VOCs). Wells 601 and 608 were shut down.
- 10 Dec Sampled HP treated water, plus Wells 601, 602, 608, 634, 637 and 642
- 13 Dec Took Quality Control (QC) samples of 602, split three ways.
- 13-19 Dec Took daily samples of HP raw water.
- 14 Dec Received results of 10 Dec 84 sampling (Table [2]). Treated water levels dropped. Wells 634 and 637, previously showing nothing, showed significant levels of Methylene Chloride(MC). 634 and 637 were shut down.
- 19 Dec Took a distribution sample from HP. Location was FC-540, far point from plant.
- 21 Dec Received results of daily HP samples (Table [3]), plus JTCs QC sample and FC-540. The QC samples from JTC and Grainger (received later) confirmed the presence of TCE and DCE.
- 16 Jan 85 Sampled all operating wells for HP and Holcomb Blvd Water Plant (HB). 37 wells.
- 23 Jan Sampled all operating wells for Onslow Beach (OB), Court-house Bay (CHB), Camp Johnson (CJ) and Tarawa Terrace (TT) water plants. 21 wells.
- 27 Jan Base Chief of Staff detected gasoline smell in water in quarters, serviced by Holcomb Blvd plant and reservoir.
- 27 Jan Reservoir flushed initially. Later, drained reservoir, shut-down HB plant, scrubbed reservoir with high pressure hoses. Housing areas and mainside are now being served by HP.
- 29 Jan Sampled all operating wells for Marine Corps Air Station-New River (MCAS) and Rifle Range (RR). 25 wells.
- Sampled finished water at HB (plant still shut down). Sampled

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Chief of Staff quarters (now being served with HP).

31 Jan 85 Received results of 29 Jan 85 sampling (Table [4]).

Sampled finished water at HP distribution pump, HB reservoir, and points in Paradise Pt and Berkeley Manor housing areas (still served by HP).

1 Feb 85 Samples delivered to State Laboratory. Analysis run on most samples (finished 4 Feb 85)

4 Feb Received results of 16 Jan 85 Well sampling (Table [5]). Wells 602, 608, and 645 were broken. Wells 634 and 651 show significant levels of TCE, DCE, PCE, and Vinyl Chloride. Wells 652 and 653 showed trace amounts of TCE. Well 651 was shut down.

Received results of 31 Jan 85 sampling (Table [6]).

The following wells were sampled: 602, 608, 610, 654, 645, 649 and two samples at 651.

Reactivated HB. Began flushing entire distribution systems served by both HB and HP.

5 Feb A treated sample from HP, HB, TT, CJ, MCAS was taken. Wells 203 and 191 at MCAS were resampled.

6 Feb The 4 & 5 Feb 85 sampling were shipped to JTC.

7 Feb Sampled raw and finished water at both plants and two samples from HB distribution system.

Received results of 23 Jan 85 Well sampling (Table [7]).

8 Feb Received results of 15 wells of the 29 Jan 85 sampling (Table [8]). Received results of 7 Feb 85 sampling (Table [9]).

Received results of the duplicate sampling of 651 on 4 Feb 85, (Table [10]).

12 Feb Resampled TT plant, TT-26, and TT New Well

Received results of HP and TT plant sampling on 5 Feb 85, (Table [11]).

14 Feb Received results of TT resampling on 12 Feb 1985, (Table [12])

19 Feb Resampled TT plant, TT-26 and TT New Well, split two ways.

20 Feb Sampled treated water at OB, CHB, RR. Sampled Well M-168 at CJ. Resampled CHB new well. Shipped one TT set from 19 Feb 85 to State Lab. Shipped 20 Feb 85 samples to JTC.

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21 Feb 85 Shipped other TT set from 19 Feb 85 to JTC.

Resampled HP and HB treated, BM-5400 and hydrant at MOQ 2204;  
and sampled Bldg 65 lab with Mike Bell from State.

22 Feb Received results of 19 Feb 1985 sampling run by State Laboratory (Table [13]).

25 Feb Received results of 19 Feb 85 sampling run by JTC (Table [13])

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Abbreviations for Following Tables

Trans-1,2-Dichloroethylene	DCE
Tetrachloroethylene (Perchloroethylene)	PCE
Trichloroethylene	TCE
Benzene	B
1,1-Dichloroethylene	11D
Toluene	T
Vinyl Chloride	VC
Methylene Chloride	MC
None Detected	ND

Notes for Following Tables

1. Results from hard copy in LANTNAVFACENGCOM LTR of 8 Jan 1985 (Not from PHONCON) received NREAD 11 Feb 85.
2. Results from hard copy received 11 Feb 85 from State Laboratory.
3. Results from hard copy in LANTNAVFACENGCOM LTR of 12 Feb 85 (Not from PHONCON) received NREAD 15 Feb 85.
4. Results from hard copy in LANTNAVFACENGCOM LTR of 14 Feb 85 (Not from PHONCON) received NREAD 19 Feb 85.
5. Results from hard copy in LANTNAVFACENGCOM LTR of 19 Feb 85 (Not from PHONCON) received NREAD 21 Feb 85.

All results are reported in parts per billion (ppb)

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TABLE [1]

LAB: JTC                      Sampled: 4 Dec 84                      Detection Limit: 10ppb

Sample Point	DCE	PCE	TCE	B	11D	T	VC	THM
HP Treated	83	3.9	200	ND	ND	ND	ND	P
HP Raw	15	ND	46	↓	↓	↓	↓	P
601	88	5.0	210	ND	ND	ND	ND	
602 (11/30/84)	630	24	1600	120	2.4	5.4	18	
603	ND	ND	ND	ND	ND	ND	ND	
608	5.4	↑	11.0	3.7	↑	↑	↑	
634	ND	↓	ND	ND	↓	↓	↓	
637	↑	↓	↑	↑	↓	↓	↓	
642	ND	ND	ND	ND	ND	ND	ND	

See Note 1.

TABLE [2]

LAB: JTC                      Sampled: 10 Dec 84                      Detection Limit: 10ppb

Sample Point	DCE	PCE	TCE	B	MC	THM
601	99	ND	230	ND	10	
602	380	↑	540	720	ND	
603	ND	↑	ND	ND	7.0	
608	2.4	↑	13	4.0	14	
634	2.3	↑	ND	ND	130	
637	ND	↓	↑	↑	270	
642	ND	↓	ND	↓	38	
HP Treated	2.3	ND	2.3	ND	ND	

See Note 1.

TABLE [3]

Hadnot Point Raw Water

LAB: JTC                      Detection Limit: 10ppb

Sample Point	DCE	PCE	TCE	MC	THM
12/4/84	15	ND	46	ND	P
12/13/84	ND	↑	ND	54	
12/14/84	↑	↑	↑	ND	P
12/15/84	↑	↑	↑	↑	P
12/16/84	↑	↑	↑	↑	P
12/17/84	↑	↑	↑	↑	P
12/18/84	↑	↑	↑	↑	P
12/19/84	ND	ND	ND	ND	P
12/19/84(FC540)	ND	ND	1.2	ND	P

See Note 1.

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TABLE [4]

LAB: NC State

Sampled: 29 Jan 85

Detection Limit: 50ppt

Sample Point	TCE	EDB(Ethylene dibromide)
HB Before Reservoir	339.8	ND
HB After Reservoir	8.2	ND
MOQ 2212	1040.9	ND
Gas Sample	ND	

See Note 2.

Table [5]

LAB: JTC

Sampled: 16 January 1985

Detection Limit: 10ppb

Well	DCE	TCE	PCE	VC	11D
601	8.8	26	ND	ND	ND
634	700	1300	10	6.8	ND
651	3400	3200	386	655	187
652	ND	9.0	ND	ND	ND
653	ND	5.5	ND	ND	ND

<u>None Detected:</u>	603	632	642	<u>Broken Samples:</u>	602
	606	633	643		608
	609	635	644		645
	611	636	646		651
	613	637	647		
	614	638	648		
	616	639(OLD)	650		
	620	639(NEW)	655		
	621	640	LCH 4007		
	627	641			

See Note 3.

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## TABLE [6]

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES  
 DIVISION OF HEALTH SERVICES  
 OCCUPATIONAL HEALTH LABORATORY

COMPANY: Camp Lejeune Water System  
 ADDRESS: Camp Lejeune, Jacksonville, N.C.  
 SERVICE REQUESTED: VOLATILE ORGANIC ANALYSIS  
 SAMPLE TAKEN ON: 1/31/85  
 SAMPLE TAKEN BY: Betsy Betz  
 SUBMITTED TO LABORATORY: 2/1/85  
 SUBMITTED BY: Betsy Betz

DATE OF ANALYSIS: 2/1-4/85  
 ANALYSED BY: John L. Neal

DATE REPORTED: 2/4/85

## RESULTS IN PPB (ug/liter)

<u>LOCATION</u>	<u>DICHLOROETHYLENE</u>	<u>TRICHLOROETHYLENE</u>
Bldg 20	321.3	900.0
Bldg 670 Bottom	7.4	24.1
MOQ 2212 Cold Water	249.4	724.6
Bldg 670 Top	7.6	26.8
MOQ 2212 Hot Water	201.2	612.9
Bldg 670 Middle	7.8	25.8
Tank SLCH 4004	107.5	318.3
Hydrant MOQ 2204	307.6	839.7
Hydrant Elev. Tank S-830	340.0	849.0
Tank S-2323	159.0	407.1
BM 5677	368.7	981.3
BM 5531	335.0	905.5
Bldg PP 2600	332.4	890.9
Bldg 5400	406.6	1,148.4

## COMMENTS:

Also identified in all samples were chloroform, dichloromethane, and two (2) unidentified peaks possibly dibromomethane and bromoform. Total Trihalomethanes <<100.0 PPB.

REPORTED BY: John L. Neal

cc. Charles Rundgren, Water Supply Branch  
 Mike Bell, ERO  
 ✓ Fred Hill, ERO  
 Environmental Epidemiology

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