



DEPARTMENT OF THE NAVY  
ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
FORT MONROE, VIRGINIA 22061-1507

JF 1

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8 JAN 1985

From: Commander, Atlantic Division, Naval Facilities Engineering Command  
To: Commanding General, Marine Corps Base, Camp Lejeune

Subj: TESTING OF POTABLE WATER WELLS AND WATER TREATMENT PLANT

Ref: (a) LANTNAVFACENCOM msg 071346Z Dec 1984

Encl: (1) Reports #4, #7, #8, #10, and #12; Laboratory Analysis on Naval Samples by JTC Environmental Consultants, Inc.

1. Reference (a) forwarded preliminary results from testing of potable water wells and recommended additional sampling of Hadnot Point water treatment plant for volatile organics. Enclosure (1), a formal report of the sampling effort to date, is forwarded for your use. Our evaluation and recommendations will follow under separate cover.

R. D. CROWSON P.E.  
Director, Utilities, Energy and  
and Environmental Division

Copy to:  
Environmental Science and Engineering (ESE)  
P. O. Box ESE  
Gainesville, FL 32602  
Attn: Russ Bowen

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REPORT # 4 (VOAs ONLY)  
LABORATORY ANALYSIS ON  
NAVAL SAMPLES  
(A/E Contract N6270-84-B-6932  
JTC REPORT # 84-127

PREPARED FOR:  
DEPARTMENT OF NAVY  
ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VA 23511

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PREPARED BY:  
JTC ENVIRONMENTAL CONSULTANTS, INC.  
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ROCKVILLE, MARYLAND 20850

DECEMBER 18, 1984

Ann E. Rosecrance  
Ann E. Rosecrance  
Laboratory Director

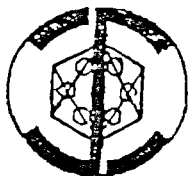
JTC Environmental Consultants, Inc.

Date 12/18/84 Report No. 4 (VOAs only) to Naval Facilities Engineering Command, Norfolk, Virginia

JTC Data Report No. 84-127 Table 1 Date of Sample Receipt 12-5-84

NAVY SAMPLE ID	JTC SAMPLE ID	Volatile Organics ANALYSIS PARAMETER							
		VOAs							
Bldg 20 Treated	12-0155	see attached data sheets ↓	0000005634 CLW						
Bldg 20 untreated	12-0156								
Bldg 601	12-0157								
HP 602	12-0158								
Bldg 603	12-0159								
Bldg 608	12-0160								
Bldg 634	12-0161								
Bldg 637	12-0162								
Bldg 642	12-0163								

Navy Sample Bldg 20 Treated received 12/5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

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VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL 258 PROJECT NO. NF-12  
SAMPLE DESIGNATION & DATE 12-0155 12/5/84 Bldg 20 Treated  
METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
ANALYSIS DATE 12/5/84

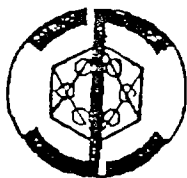
PARAMETER	RESULT ug/lit	PARAMETER	RESULT ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	9.6* N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichloro-fluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	3.8* N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	3.9* N.D.
23V chloroform	16 N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	200 N.D.
30V 1,2-trans-dichloro- ethylene	83 N.D.	88V vinyl <b>CLW</b> ide	N.D.

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N.D. = NOT DETECTED  
N.A. = NOT APPLICABLE/ANALYZED

\* holds method detection limit

Navy Samp 2 Bldg 20 untreated received 12/5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL260 PROJECT NO. NF-12  
 SAMPLE DESIGNATION & DATE 12-0156 12/5/84 Bldg 20 untreated  
 METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
 ANALYSIS DATE 12/5/84

PARAMETER	RESULT ug/lit	PARAMETER	RESULT ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	6.0* N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	2.2* N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	N.D.
23V chloroform	9.6* N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	46 N.D.
30V 1,2-trans-dichloro- ethylene	15 N.D.	88V vinyl chloride	N.D.

CLW

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N.D. = NOT DETECTED  
 N.A. = NOT APPLICABLE/ANALYZED

\* below method detection limit

Navy samp Bldg 601 received 1, 5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL261 PROJECT NO. NF-12  
SAMPLE DESIGNATION & DATE 12-0157 12/5/84 Bldg 601  
METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
ANALYSIS DATE 12/5/84

PARAMETER	RESULT	PARAMETER	RESULT
	ug/lit		ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	5.0* N.D.
23V chloroform	N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	210 N.D.
30V 1,2-trans-dichloro- ethylene	88 N.D.	88V vinyl chloride	N.D.

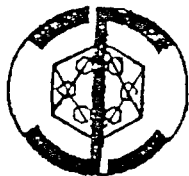
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N.D. = NOT DETECTED  
N.A. = NOT APPLICABLE/ANALYZED

\* below method detection limit

Navy Sample HP602 rec'd 12/5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL 262 PROJECT NO. NF-12  
SAMPLE DESIGNATION & DATE 12-0158 12/5/84 HP602  
METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
ANALYSIS DATE 12/5/84

PARAMETER	RESULT	PARAMETER	RESULT
	ug/lit		ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	120 <del>N.D.</del>	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene <sup>24</sup>	<del>N.D.</del>
23V chloroform	N.D.	86V toluene	5.4* <del>N.D.</del>
29V 1,1-dichloroethylene	2.4* <del>N.D.</del>	87V trichloroethylene	1600 <del>N.D.</del>
30V 1,2-trans-dichloro- ethylene	630 <del>N.D.</del>	88V vinyl chloride	18 <del>N.D.</del>

CLW

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N.D. = NOT DETECTED  
N.A. = NOT APPLICABLE/ANALYZED

\* below method detection limit

Navy sample HP603 received 1/5/84

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JTC ENVIRONMENTAL CONSULTANTS, INC. 0000005639  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL263 PROJECT NO. NF-12

SAMPLE DESIGNATION & DATE 12-0159 12/5/84 HP603

METHOD NO. 624 DETECTION LIMIT 10 ug/lit

ANALYSIS DATE 12/5/84

PARAMETER	RESULT ug/lit	PARAMETER	RESULT ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	N.D.
23V chloroform	N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	4.6* N.D.
30V 1,2-trans-dichloro- ethylene	N.D.	88V vinyl chloride	N.D.

N.D. = NOT DETECTED  
N.A. = NOT APPLICABLE/ANALYZED

\* below method detection limits

Navy sam, 2 HP608 received 12, /84

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JTC ENVIRONMENTAL CONSULTANTS, INC. 0000005640  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

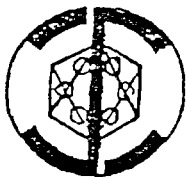
LAB SAMPLE LOG NO. VOASPL265 PROJECT NO. NF-12  
SAMPLE DESIGNATION & DATE 12-0160 12/5/84 HP608  
METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
ANALYSIS DATE 12/5/84

PARAMETER	RESULT	PARAMETER	RESULT
	ug/lit		ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	3.7* N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	N.D.
23V chloroform	N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	110 N.D.
30V 1,2-trans-dichloro- ethylene	5.4* N.D.	88V vinyl chloride	N.D.

N.D. = NOT DETECTED  
N.A. = NOT APPLICABLE/ANALYZED

\* below method detection limit

Navy sam, Bldg 634 received 1/5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL266 PROJECT NO. NF-12

SAMPLE DESIGNATION & DATE 12-0161 12/5/84 Bldg 634

METHOD NO. 624 DETECTION LIMIT 10 ug/lit

ANALYSIS DATE 12/5/84

PARAMETER	RESULT ug/lit	PARAMETER	RESULT ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloropro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	N.D.
23V chloroform	N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	N.D.
30V 1,2-trans-dichloro- ethylene	N.D.	88V vinyl chloride	N.D.

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N.D. = NOT DETECTED

N.A. = NOT APPLICABLE/ANALYZED

Navy sam, 2 Bldg 637 received 1/5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL 269 PROJECT NO. NF-12  
SAMPLE DESIGNATION & DATE 12-0162 12/5/84 Bldg 637  
METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
ANALYSIS DATE 12/6/84

PARAMETER	RESULT ug/lit	PARAMETER	RESULT ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	N.D.
23V chloroform	N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	N.D.
30V 1,2-trans-dichloro- ethylene	N.D.	88V vinyl chloride	N.D.

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N.D. = NOT DETECTED  
N.A. = NOT APPLICABLE/ANALYZED

Navy Sample Bldg 642 received 2/5/84



JTC ENVIRONMENTAL CONSULTANTS, INC.  
PRIORITY POLLUTANT ANALYSIS DATA SHEET

VOLATILE FRACTION

LAB SAMPLE LOG NO. VOASPL270 PROJECT NO. NF-12  
SAMPLE DESIGNATION & DATE 12-0163 12/5/84 Bldg 642  
METHOD NO. 624 DETECTION LIMIT 10 ug/lit  
ANALYSIS DATE 12/6/84

PARAMETER	RESULT	PARAMETER	RESULT
	ug/lit		ug/lit
2V acrolein	N.D.	32V 1,2-dichloropropane	N.D.
3V acrylonitrile	N.D.	33V 1,3-dichloro- pylene	N.D.
4V benzene	N.D.	38V ethylbenzene	N.D.
6V carbon tetrachloride	N.D.	44V methylene chloride	N.D.
7V chlorobenzene	N.D.	45V methyl chloride	N.D.
10V 1,2-dichloroethane	N.D.	46V methyl bromide	N.D.
11V 1,1,1-trichloro- ethane	N.D.	47V bromoform	N.D.
13V 1,1-dichloroethane	N.D.	48V dichlorobromo- methane	N.D.
14V 1,1,2-trichloro- ethane	N.D.	49V trichlorofluoro- methane	N.D.
15V 1,1,2,2-tetra- chloroethane	N.D.	50V dichlorodifluoro- methane	N.D.
16V chloroethane	N.D.	51V chlorodibromomethane	N.D.
19V 2-chloroethylvinyl ether	N.D.	85V tetrachloroethylene	N.D.
23V chloroform	N.D.	86V toluene	N.D.
29V 1,1-dichloroethylene	N.D.	87V trichloroethylene	N.D.
30V 1,2-trans-dichloro- ethylene	N.D.	88V vinyl chloride	N.D.

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N.D. = NOT DETECTED

N.A. = NOT APPLICABLE/ANALYZED