11330/1
NREAD
6 Sep 1984

Mr. John McFadyen
Water Supply Branch
Division of Health Services
North Carolina Department of
Human Resources
Post Office Box 2091
Raleigh, North Carolina 27602

Dear Mr. McFadyen:

Enclosed are the completed Department of Health Forms (DHS 1942 2/74) for all water treatment plants aboard Marine Corps Base, Camp Lejeune for the period 1-31 August 1984. Also enclosed are the weekly Chemical Analysis Forms (MCBCL 11330/3 Rev 3-82) for the same period, as requested in the 25 October 1982 letter from Mr. Charles Rundgren of your office.

The analysis is run by the Quality Control Laboratory located in the Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities. Ms. Elizabeth Betz, Supervisory Chemist, Quality Control Laboratory, telephone (919) 451-5977 is the point of contact in this matter.

Sincerely,

J. I. WOOTEN
Director

Encl:
(1) Dept of Health Forms
(2) Chemical Analysis Forms

Copy to:
LANTDIV (Code 114)

Blind copy to:
BMO (Attn: UtilDir)

SupvChem

CLW

Writer: E. Betz, NREAD, 5977
Typist: J. Cross, 5Sep84, 5003

0000004215

SERIAL # 04-67-041

N. C. DEPARTMENT OF HUMAN RESOURCES

DATE	RAW WATER COLIFORMS (MFP) A: VOLUME FILTERED ml.	A: TOTAL COLONIES	A: COLIFORM COLONIES	B: VOLUME FILTERED ml.	B: TOTAL COLONIES	B: COLIFORM COLONIES	C: VOLUME FILTERED ml.	C: TOTAL COLONIES	C: COLIFORM COLONIES	NO. OF COLIFORMS PER 100 ml.	FILTERED: TOTAL PLATE COUNT	FILTERED: MFP COLIFORMS per 100 ml.	FINISHED: TOTAL PLATE COUNT	FINISHED: MFP COLIFORMS per 100 ml.	DISTRIBUTION SYSTEM: TOTAL PLATE COUNT	AVE. COLIFORMS per 100 ml.	NO. OF SAMPLES EXAMINED	COLIFORMS (MFP) 1: COLIFORMS per 100 ml.	2: COLIFORMS per 100 ml.	3: COLIFORMS per 100 ml.	4: COLIFORMS per 100 ml.	5: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	INCUBATOR TEMP.
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MF MEDIA	BBL m-ENDO	BACTERIAL DENSITY	ARITH. MEAN		0	DIST. SYSTEM	TOTAL NO. SAMPLES	36
TPC MEDIA			GEO. MEAN		1.0		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml	0

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0000004216

Laboratory Cert. #100

Signed [signature] Cert. Grade B-WELL No. 4087-W

ENCLOSURE (1)

SERIAL # 04-67-042

N. C. DEPARTMENT OF HUMAN RESOURCES

DATE	RAW WATER COLIFORMS (MFP) A: VOLUME FILTERED ml.	A: TOTAL COLONIES	A: COLIFORM COLONIES	B: VOLUME FILTERED ml.	B: TOTAL COLONIES	B: COLIFORM COLONIES	C: VOLUME FILTERED ml.	C: TOTAL COLONIES	C: COLIFORM COLONIES	NO. OF COLIFORMS PER 100 ml.	FILTERED: TOTAL PLATE COUNT	FILTERED: MFP COLIFORMS per 100 ml.	FINISHED: TOTAL PLATE COUNT	FINISHED: MFP COLIFORMS per 100 ml.	DISTRIBUTION SYSTEM: TOTAL PLATE COUNT	AVE. COLIFORMS per 100 ml.	NO. OF SAMPLES EXAMINED	COLIFORMS (MFP) 1: COLIFORMS per 100 ml.	2: COLIFORMS per 100 ml.	3: COLIFORMS per 100 ml.	4: COLIFORMS per 100 ml.	5: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	INCUBATOR TEMP.
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MF MEDIA	BBL m-ENDO	BACTERIAL DENSITY	ARITH. MEAN	0	DIST. SYSTEM	TOTAL NO. SAMPLES	28
TPC MEDIA			GEO. MEAN	1.0		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml	0

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00000421

Laboratory Cert. #100

Signed Elizabeth D. A. B[illegible] Cert. Grade B-WELL No. 4087-W

Year 19__

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES

N. C. DEPARTMENT OF HUMAN RESOURCES

SERIAL # 04-67-043

DATE	RAW WATER COLIFORMS (MFP) A: Volume Filtered ml.	A: Total Colonies	A: Coliform Colonies	B: Volume Filtered ml.	B: Total Colonies	B: Coliform Colonies	C: Volume Filtered ml.	C: Total Colonies	C: Coliform Colonies	No. of Coliforms per 100 ml.	FILTERED: Total Plate Count	FILTERED: MFP Coliforms per 100 ml.	FINISHED: Total Plate Count	FINISHED: MFP Coliforms per 100 ml.	DISTRIBUTION SYSTEM: Total Plate Count	COLIFORMS (MFP): Ave. Coliforms per 100 ml.	COLIFORMS (MFP): No. of Samples Examined	1: Coliforms per 100 ml.	2: Coliforms per 100 ml.	3: Coliforms per 100 ml.	4: Coliforms per 100 ml.	5: Coliforms per 100 ml.	REPEAT SAMPLES: Coliforms per 100 ml.	REPEAT SAMPLES: Coliforms per 100 ml.	REPEAT SAMPLES: Coliforms per 100 ml.	Incubator Temp.
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MF MEDIA	BBL m-ENDO	BACTERIAL DENSITY	ARITH. MEAN			0	DIST. SYSTEM	TOTAL NO. SAMPLES	28
TPC MEDIA			GEO. MEAN			1.0		SAMPLES EXCEEDING 3/50. 4/100 7/200. 13/500ml	0

Laboratory Cert. #100

Signed Elizabeth C Baty Cert. Grade B-WELL No. 4087-W

Year 1981

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES
N. C. DEPARTMENT OF HUMAN RESOURCES

SERIAL # 04-67-044

DATE	RAW WATER COLIFORMS (MFP) A: Volume Filtered ml.	A: Total Colonies	A: Coliform Colonies	B: Volume Filtered ml.	B: Total Colonies	B: Coliform Colonies	C: Volume Filtered ml.	C: Total Colonies	C: Coliform Colonies	No. of Coliforms per 100 ml.	FILTERED: Total Plate Count	FILTERED: MFP Coliforms per 100 ml.	FINISHED: Total Plate Count	FINISHED: MFP Coliforms per 100 ml.	DISTRIBUTION SYSTEM: Total Plate Count	Coliforms (MFP): Ave. Coliforms per 100 ml.	Coliforms (MFP): No. of Samples Examined	1: Coliforms per 100 ml.	2: Coliforms per 100 ml.	3: Coliforms per 100 ml.	4: Coliforms per 100 ml.	5: Coliforms per 100 ml.	Repeat Samples OK 8/29: Coliforms per 100 ml.	Repeat Samples ON 8/30: Coliforms per 100 ml.	Repeat Samples: Coliforms per 100 ml.	Incubator Temp.
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MF MEDIA		BBL m-ENDO		BACTERIAL DENSITY	ARITH. MEAN											0.08	DIST. SYSTEM	TOTAL NO. SAMPLES								12
TPC MEDIA					GEO. MEAN											1.0		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml								0

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0000004219

Laboratory Cert. #100

Signed Elizabeth A. Baty Cert. Grade B-WELL No. 4087-W

SERIAL # 04-67-045

N. C. DEPARTMENT OF HUMAN RESOURCES

DATE	RAW WATER COLIFORMS (MFP) A: VOLUME FILTERED ml.	A: TOTAL COLONIES	A: COLIFORM COLONIES	B: VOLUME FILTERED ml.	B: TOTAL COLONIES	B: COLIFORM COLONIES	C: VOLUME FILTERED ml.	C: TOTAL COLONIES	C: COLIFORM COLONIES	NO. OF COLIFORMS PER 100 ml.	FILTERED: TOTAL PLATE COUNT	FILTERED: MFP COLIFORMS per 100 ml.	FINISHED: TOTAL PLATE COUNT	FINISHED: MFP COLIFORMS per 100 ml.	DISTRIBUTION SYSTEM: TOTAL PLATE COUNT	COLIFORMS (MFP): AVE. COLIFORMS per 100 ml.	NO. OF SAMPLES EXAMINED	1: COLIFORMS per 100 ml.	2: COLIFORMS per 100 ml.	3: COLIFORMS per 100 ml.	4: COLIFORMS per 100 ml.	5: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	INCUBATOR TEMP.
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MF MEDIA	BBL m-Endo	BACTERIAL DENSITY	ARITH. MEAN	0	DIST. SYSTEM	TOTAL NO. SAMPLES	12
TPC MEDIA			GEO. MEAN	1.0		SAMPLES EXCEEDING 3/50. 4/100 7/200. 13/500ml	0

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000004220

Laboratory Cert. #100

TD # 37807

Signed Elizabeth B Betz Cert. Grade B-WELL No. 4087-W

Year _____

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES

N. C. DEPARTMENT OF HUMAN RESOURCES

SERIAL # 04-67-046

DATE	RAW WATER COLIFORMS (MFP) A: Volume Filtered ml.	A: Total Colonies	A: Coliform Colonies	B: Volume Filtered ml.	B: Total Colonies	B: Coliform Colonies	C: Volume Filtered ml.	C: Total Colonies	C: Coliform Colonies	No. of Coliforms per 100 ml.	FILTERED: Total Plate Count	FILTERED: MFP Coliforms per 100 ml.	FINISHED: Total Plate Count	FINISHED: MFP Coliforms per 100 ml.	DISTRIBUTION SYSTEM: Total Plate Count	COLIFORMS (MFP): Ave. Coliforms per 100 ml.	No. of Samples Examined	1: Coliforms per 100 ml.	2: Coliforms per 100 ml.	3: Coliforms per 100 ml.	4: Coliforms per 100 ml.	5: Coliforms per 100 ml.	REPEAT SAMPLES: Coliforms per 100 ml.	Coliforms per 100 ml.	Coliforms per 100 ml.	Incubator Temp.
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MF MEDIA		BBL m-ENDO		BACTERIAL DENSITY		ARITH. MEAN										0	DIST. SYSTEM	TOTAL NO. SAMPLES								12
MPC MEDIA						GEO. MEAN										1.0		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml								0

Laboratory Cert. #190

Signed Elizabeth R Batty Cert. Grade B-WELL No. 4087-W

Year ________

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES

N. C. DEPARTMENT OF HUMAN RESOURCES

SERIAL # 04-67-047

DATE	RAW WATER COLIFORMS (MFP) A: VOLUME FILTERED ml.	A: TOTAL COLONIES	A: COLIFORM COLONIES	B: VOLUME FILTERED ml.	B: TOTAL COLONIES	B: COLIFORM COLONIES	C: VOLUME FILTERED ml.	C: TOTAL COLONIES	C: COLIFORM COLONIES	NO. OF COLIFORMS PER 100 ml.	FILTERED: TOTAL PLATE COUNT	FILTERED: MFP COLIFORMS per 100 ml.	FINISHED: TOTAL PLATE COUNT	FINISHED: MFP COLIFORMS per 100 ml.	DISTRIBUTION SYSTEM: TOTAL PLATE COUNT	AVE. COLIFORMS per 100 ml.	NO. OF SAMPLES EXAMINED	COLIFORMS (MFP) 1: COLIFORMS per 100 ml.	2: COLIFORMS per 100 ml.	3: COLIFORMS per 100 ml.	4: COLIFORMS per 100 ml.	5: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	REPEAT SAMPLES: COLIFORMS per 100 ml.	INCUBATOR TEMP.
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MF MEDIA	BBL m-Endo	BACTERIAL DENSITY	ARITH. MEAN	0	DIST. SYSTEM	TOTAL NO. SAMPLES	16
TPC MEDIA			GEO. MEAN	1.0		SAMPLES EXCEEDING 3/50, (4/100), 7/200, 13/500ml	0

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Laboratory Cert. #100 Signed Elizabeth D. A. Betz Cert. Grade B-WELL No. 4087-W

Year 1954

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES
N. C. DEPARTMENT OF HUMAN RESOURCES

SERIAL # 04-67-048

DATE	RAW WATER COLIFORMS (MFP) A: Volume Filtered ml.	A: Total Colonies	A: Coliform Colonies	B: Volume Filtered ml.	B: Total Colonies	B: Coliform Colonies	C: Volume Filtered ml.	C: Total Colonies	C: Coliform Colonies	No. of Coliforms per 100 ml.	FILTERED: Total Plate Count	FILTERED: MFP Coliforms per 100 ml.	FINISHED: Total Plate Count	FINISHED: MFP Coliforms per 100 ml.	DISTRIBUTION SYSTEM: Total Plate Count	Coliforms (MFP): Ave. Coliforms per 100 ml.	Coliforms (MFP): No. of Samples Examined	Coliforms (MFP): 1 Coliforms per 100 ml.	Coliforms (MFP): 2 Coliforms per 100 ml.	Coliforms (MFP): 3 Coliforms per 100 ml.	Coliforms (MFP): 4 Coliforms per 100 ml.	Coliforms (MFP): 5 Coliforms per 100 ml.	Repeat Samples: Coliforms per 100 ml.	Repeat Samples: Coliforms per 100 ml.	Repeat Samples: Coliforms per 100 ml.	Incubator Temp.
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MF MEDIA			BBL m-ENDO			BACTERIAL DENSITY		ARITH. MEAN								0	DIST. SYSTEM	TOTAL NO. SAMPLES								8
*TPC MEDIA								GEO. MEAN								1.0		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml								0

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0000004223

Signed Elizabeth Betts Cert. Grade B-WELL No. 4087-W

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS
MCBCL 11330/3 (REV. 3-82)

7 AUGUST 84

PARAMETER SERIAL # 04-67	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLOW BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	8.7	7.6	8.6	7.4	8.5	8.1	8.8	8.7
PENOLTHALEIN ALKALINITY	4	0	2	0	4	0	2	12
METHYL ORANGE ALKALINITY	56	168	60	162	156	172	60	174
CARBONATES AS $CaCO_3$	8	0	4	0	8	0	4	24
BICARBONATES AS $CaCO_3$	48	168	56	162	148	172	56	150
CHLORIDES AS Cl	14	34	14	20	24	46	14	170
HARDNESS AS $CaCO_3$	64	90	78	74	66	46	60	50
IRON AS Fe	0.06	0.68	0.06	0.22	0.04	0.11	0.04	0.04
FLUORIDE AM / PM	0.97 / 1.04	0.19	0.96 / 1.00	0.16	0.12	0.12	1.01 / 1.05	0.76
CHLORINE RESIDUAL	1.0	1.3	1.0	1.1	1.5	1.0	1.1	1.2
TURBIDITY AM / PM	0.4 / 0.7	1.57	0.5 / 0.6	0.3	0.3	0.5	0.3 / 0.3	0.8
TOTAL PHOSPHATE		3.30			0.73			
ORTHO PHOSPHATE		1.46			0.16			
META PHOSPHATE		1.84			0.57			
STABILITY	+0.2	−0.7	+0.2	−1.0	−0.1	−0.5	+0.3	0.0

REMARKS

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NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY: LACHAPELLE, BURNS, BARBEE

DATE OF ANALYSIS: 7 AUG. 1984

ENCLOSURE (2)

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS
MCBCL 11330/3 (REV. 3-82)

14 AUGUST 84

PARAMETER SERIAL #04:167	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLOW BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	9.3	7.6	8.7	7.7	8.3	8.1	8.8	8.8
PENOLTHALEIN ALKALINITY	6	0	2	0	2	0	4	8
METHYL ORANGE ALKALINITY	46	184	50	160	152	176	56	180
CARBONATES AS $CaCO_3$	12	0	4	0	4	0	8	16
BICARBONATES AS $CaCO_3$	34	184	46	160	148	176	48	164
CHLORIDES AS Cl	14	30	10	20	14	48	10	190
HARDNESS AS $CaCO_3$	56	74	68	50	70	72	70	50
IRON AS Fe	0.04	0.49	<0.04	0.09	0.06	<0.04	<0.04	<0.04
FLUORIDE AM / PM	1.02 / 1.05	0.2	0.96 / 1.00	0.21	0.14	0.13	0.95 / 0.96	0.82
CHLORINE RESIDUAL	1.1	1.2	1.0	1.6	1.3	1.1	1.0	1.3
TURBIDITY AM / PM	0.8 / 1.0	1.52	0.2 / 0.72	0.6	0.3	0.4	0.2 / 0.2	0.70
TOTAL PHOSPHATE		2.80			1.35			
ORTHO PHOSPHATE		1.17			0.22			
META PHOSPHATE		1.63			1.13			
STABILITY	+0.8	−0.6	+0.4	−0.6	0.0	−0.6	+0.3	0.0

REMARKS

CLW

0000004225

NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY: BURNS & HUNEYCUTT

DATE OF ANALYSIS: 14 AUG 84

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

8/21/84

PARAMETER SERIAL # 04-61	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLOW BEACH -018	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -046
PH (IN LAB NOT PLANT)	8.7	7.4	8.5	7.5	8.6	8.3	8.7	8.7
PENOLTHALEIN ALKALINITY	4	0	4	0	4	0	4	10
METHYL ORANGE ALKALINITY	60	190	66	160	140	176	70	200
CARBONATES AS $CaCO_3$	8	0	8	0	8	0	8	20
BICARBONATES AS $CaCO_3$	52	190	58	160	132	176	62	180
CHLORIDES AS Cl	10	40	16	24	20	50	12	180
HARDNESS AS $CaCO_3$	60	80	90	64	54	78	64	60
IRON AS Fe	<0.04	1.52	<0.04	0.12	<0.04	<0.04	<0.04	<0.04
FLUORIDE AM / PM	1.03 / 1.05	0.16	0.96 / 1.00	0.17	0.11	0.11	1.11 / 1.02	0.92
CHLORINE RESIDUAL	1.0	1.4	1.0	1.5	1.6	1.0	1.0	1.4
TURBIDITY AM / PM	0.50 / 0.80	2.9	0.30 / 0.70	0.30	0.40	0.40	0.30 / 0.30	0.60
TOTAL PHOSPHATE		2.05			1.30			
ORTHO PHOSPHATE		1.46			0.35			
META PHOSPHATE		0.59			0.95			
STABILITY	+0.5	−0.7	+0.3	−0.7	+0.2	0.0 CLW	+0.5	+0.1

REMARKS

0000004226

NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY: BURNS & MACNAPELLE

DATE OF ANALYSIS: 8/21/84

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS
MCBCL 11330/3 (REV. 3-82)

28 AUG. 1984

PARAMETER SERIAL # 04-61	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLOW BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	8.8	7.4	8.4	7.4	8.4	8.1	8.9	8.7
PENOLTHALEIN ALKALINITY	4	0	2	0	6	3	6	12
METHYL ORANGE ALKALINITY	60	190	74	160	164	184	60	214
CARBONATES AS $CaCO_3$	8	0	4	0	12	6	12	24
BICARBONATES AS $CaCO_3$	52	190	70	160	152	178	48	190
CHLORIDES AS Cl	14	42	14	24	18	52	16	184
HARDNESS AS $CaCO_3$	70	78	96	62	58	70	62	60
IRON AS Fe	<0.04	0.52	<0.04	0.14	<0.04	0.15	<0.04	<0.04
FLUORIDE AM	~~1.09~~	0.16	~~1.02~~	0.15	0.11	0.11	~~0.67~~	0.93
FLUORIDE PM	1.06		1.11				1.07	
CHLORINE RESIDUAL	1.0	1.3	1.0	1.3	1.3	1.1	0.9	1.2
TURBIDITY AM	~~0.4~~	1.5	~~0.2~~	0.2	0.4	0.6	~~0.2~~	0.6
TURBIDITY PM	0.5		0.6				0.2	
TOTAL PHOSPHATE		2.80			1.26			
ORTHO PHOSPHATE		1.10			0.35			
META PHOSPHATE		1.70			0.91			
STABILITY	+0.5	−0.7	+0.2	−0.7	0.0	+0.2	+0.6	+0.2

REMARKS

CLW

0000004227

NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY: LACHAPELLE & BYRNS

DATE OF ANALYSIS: 28 AUG. 1984