

# Volume 4 - Raw Analytical Data

Engineering Report

PENNSYLVANIA COASTAL ZONE MANAGEMENT PROGRAM

WATER QUALITY MONITORING STUDY  
FOR THE LAKE ERIE WATERSHED

SEPTEMBER 1996

Project: 2758-001

CZM Project No.: CZ1:94.06PE

A REPORT OF THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
TO THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
PURSUANT TO NOAA AWARD NO. - NA47OZ0248



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**MALCOLM  
PIRNIE**

ENVIRONMENTAL ENGINEERS, SCIENTISTS & PLANNERS



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Dry Event #1, TWELVE MILE CREEK **Lab Log No:** 49969

**Sample Date/Time:** June 14, 1995/8:15AM, 13:50PM, 17:30PM

**Sampler:** N.A. Conaway

TD 225 .E7 635 1996 V.11

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	06-20-95	RJI
Arsenic	206.2	<0.001 mg/l	06-15-95	RJI
Beryllium	210.1	<0.005 mg/l	06-16-95	RJI
Cadmium	213.2	<0.0001 mg/l	06-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	06-19-95	RJI
Chromium, VI	218.4	<0.01 mg/l	06-14-95	NDA
Copper	220.2	<0.001 mg/l	06-22-95	RJI
Lead	239.2	<0.001 mg/l	06-22-95	RJI
Mercury	245.2	<0.0002 mg/l	06-27-95	RJI
Nickel	249.1	<0.01 mg/l	06-16-95	RJI
Selenium	270.2	<0.002 mg/l	06-23-95	RJI
Silver	272.2	<0.0002 mg/l	06-27-95	RJI
Thallium	279.2	<0.001 mg/l	06-27-95	RJI
Zinc	289.1	0.012 mg/l	06-20-95	RJI
Cyanide, Free	DER (White)	<0.005 mg/l	06-15-95	LT
Aluminum	202.1	<0.1 mg/l	06-16-95	RJI
Alkalinity	310.1	81 mg/l	06-19-95	KW
Ammonia Nitrogen	350.1	0.05 mg/l	06-22-95	LT
Fecal Coliform				
Grab@08:15AM	SM-16, 909C	141 col/100 ml	06-15-95	LT
Hardness	130.1	157 mg/l	06-15-95	KW
Iron	236.1	0.62 mg/l	06-19-95	RJI
Manganese	243.1	<0.01 mg/l	06-16-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	06-20-95	LT
Nitrate Nitrogen	353.2	2.45 mg/l	06-20-95	LT
Chloride	325.2	38 mg/l	06-19-95	LT



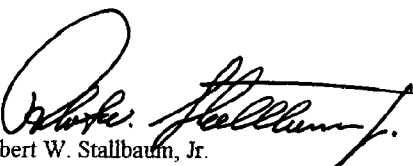
**Water Analyses Report**  
Malcolm Pirnie, Inc.

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Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Dry Event #1, TWELVE MILE CREEK  
Sample Date/Time: June 14, 1995/8:15AM, 13:50PM, 17:30PM  
Sampler: N.A. Conaway

Lab Log No: 49969

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease Grab				
@08:05AM	413.1	1.2 mg/l	06-19-95	KW
@14:50PM	413.1	2.0 mg/l	06-19-95	KW
@17:30PM	413.1	<0.4 mg/l	06-19-95	KW
CBOD <sub>5</sub>	405.1	3 mg/l	06-19-95	KW
Total Suspended Solids	160.2	2 mg/l	06-19-95	KW
Phosphorus	365.4	<0.01 mg/l	06-16-95	LT
COD	410.4	<10 mg/l	06-20-95	NDA
Aldrin	508	<0.4 ug/l	06-23-95	NDA
alpha-BHC	508	<0.02 ug/l	06-23-95	NDA
beta-BHC	508	<0.02 ug/l	06-23-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	06-23-95	NDA
delta-BHC	508	<0.02 ug/l	06-23-95	NDA
alpha-Chlordane	508	<0.2 ug/l	06-23-95	NDA
gamma-Chlordane	508	<0.2 ug/l	06-23-95	NDA
4,4'-DDT	508	<0.01 ug/l	06-23-95	NDA
4,4'-DDE	508	<0.01 ug/l	06-23-95	NDA
4,4'-DDD	508	<0.01 ug/l	06-23-95	NDA
Dieldrin	508	<0.5 ug/l	06-23-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
beta-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	06-23-95	NDA
Endrin	508	<0.01 ug/l	06-23-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	06-23-95	NDA
Heptachlor	508	<0.04 ug/l	06-23-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	06-23-95	NDA
Toxaphene	508	<1.0 ug/l	06-23-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: June 28, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Dry Event #1, WALNUT CREEK  
**Sample Date/Time:** June 14, 1995/10:25AM, 15:00PM, 18:16PM  
**Sampler:** N.A. Conaway

**Lab Log No:** 49968

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	06-20-95	RJI
Arsenic	206.2	<0.001 mg/l	06-15-95	RJI
Beryllium	210.1	<0.005 mg/l	06-16-95	RJI
Cadmium	213.2	<0.0001 mg/l	06-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	06-19-95	RJI
Chromium, VI	218.4	<0.01 mg/l	06-14-95	NDA
Copper	220.2	<0.001 mg/l	06-22-95	RJI
Lead	239.2	<0.001 mg/l	06-22-95	RJI
Mercury	245.2	<0.0002 mg/l	06-27-95	RJI
Nickel	249.1	<0.01 mg/l	06-16-95	RJI
Selenium	270.2	<0.002 mg/l	06-23-95	RJI
Silver	272.2	<0.0002 mg/l	06-27-95	RJI
Thallium	279.2	<0.001 mg/l	06-27-95	RJI
Zinc	289.1	0.048 mg/l	06-20-95	RJI
Cyanide, Free	DER (White)	<0.005 mg/l	06-15-95	LT
Aluminum	202.1	<0.1 mg/l	06-16-95	RJI
Alkalinity	310.1	140 mg/l	06-19-95	KW
Ammonia Nitrogen	350.1	0.04 mg/l	06-22-95	LT
Fecal Coliform				
Grab@10:25AM	SM-16, 909C	80 col/100 ml	06-15-95	LT
Hardness	130.1	209 mg/l	06-15-95	KW
Iron	236.1	0.38 mg/l	06-19-95	RJI
Manganese	243.1	0.01 mg/l	06-16-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	06-20-95	LT
Nitrate Nitrogen	353.2	0.41 mg/l	06-20-95	LT
Chloride	325.2	59 mg/l	06-19-95	LT



**Water Analyses Report**  
Malcolm Pirnie, Inc.

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Dry Event #1, WALNUT CREEK  
**Sample Date/Time:** June 14, 1995/10:25AM, 15:00PM, 18:16PM  
**Sampler:** N.A. Conaway

Lab Log No: 49968

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease Grab				
@10:25AM	413.1	3.2 mg/l	06-19-95	KW
@15:00PM	413.1	0.4 mg/l	06-19-95	KW
@18:16PM	413.1	<0.4 mg/l	06-19-95	KW
CBOD,	405.1	2 mg/l	06-19-95	KW
Total Suspended Solids	160.2	2 mg/l	06-19-95	KW
Phosphorus	365.4	<0.01 mg/l	06-16-95	LT
COD	410.4	<10 mg/l	06-20-95	NDA
Aldrin	508	<0.4 ug/l	06-23-95	NDA
aphaBHC	508	<0.02 ug/l	06-23-95	NDA
beta-BHC	508	<0.02 ug/l	06-23-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	06-23-95	NDA
delta-BHC	508	<0.02 ug/l	06-23-95	NDA
alpha-Chlordane	508	<0.2 ug/l	06-23-95	NDA
gamma-Chlordane	508	<0.2 ug/l	06-23-95	NDA
4,4'-DDT	508	<0.01 ug/l	06-23-95	NDA
4,4'DDE	508	<0.01 ug/l	06-23-95	NDA
4,4'-DDD	508	<0.01 ug/l	06-23-95	NDA
Dieldrin	508	<0.5 ug/l	06-23-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
beta-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	06-23-95	NDA
Endrin	508	<0.01 ug/l	06-23-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	06-23-95	NDA
Heptachlor	508	<0.04 ug/l	06-23-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	06-23-95	NDA
Toxaphene	508	<1.0 ug/l	06-23-95	NDA

Robert W. Stallbaum, Jr.  
President



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Dry Event #1, ELK CREEK

**Lab Log No:** 49970

**Sample Date/Time:** June 14, 1995/11:18 AM, 15:30PM, 18:40PM

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	06-20-95	RJI
Arsenic	206.2	<0.001 mg/l	06-15-95	RJI
Beryllium	210.1	<0.005 mg/l	06-16-95	RJI
Cadmium	213.2	<0.0001 mg/l	06-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	06-19-95	RJI
Chromium, VI	218.4	<0.01 mg/l	06-14-95	NDA
Copper	220.2	<0.001 mg/l	06-22-95	RJI
Lead	239.2	<0.001 mg/l	06-22-95	RJI
Mercury	245.2	<0.0002 mg/l	06-27-95	RJI
Nickel	249.1	<0.01 mg/l	06-16-95	RJI
Selenium	270.2	<0.002 mg/l	06-23-95	RJI
Silver	272.2	<0.0002 mg/l	06-27-95	RJI
Thallium	279.2	<0.001 mg/l	06-27-95	RJI
Zinc	289.1	0.011 mg/l	06-20-95	RJI
Cyanide, Free	DER (White)	<0.005 mg/l	06-15-95	LT
Aluminum	202.1	<0.1 mg/l	06-16-95	RJI
Alkalinity	310.1	100 mg/l	06-19-95	KW
Ammonia Nitrogen	350.1	0.09 mg/l	06-22-95	LT
Fecal Coliform				
Grab@11:18AM	SM-16, 909C	28 col/100 ml	06-15-95	LT
Hardness	130.1	154 mg/l	06-15-95	KW
Iron	236.1	0.47 mg/l	06-19-95	RJI
Manganese	243.1	<0.01 mg/l	06-16-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	06-20-95	LT
Nitrate Nitrogen	353.2	0.97 mg/l	06-20-95	LT
Chloride	325.2	35 mg/l	06-19-95	LT



**Water Analyses Report**  
Malcolm Pirnie, Inc.

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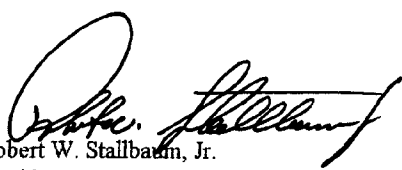
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Dry Event #1, ELK CREEK Lab Log No: 49970

Sample Date/Time: June 14, 1995/11:18M, 15:30PM, 18:40PM

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease Grab				
@11:18AM	413.1	1.2 mg/l	06-19-95	KW
@15:30PM	413.1	2.4 mg/l	06-19-95	KW
@18:40PM	413.1	1.2 mg/l	06-19-95	KW
CBOD <sub>5</sub>	405.1	2 mg/l	06-19-95	KW
Total Suspended Solids	160.2	2 mg/l	06-19-95	KW
Phosphorus	365.4	0.01 mg/l	06-16-95	LT
COD	410.4	10 mg/l	06-20-95	NDA
Aldrin	508	<0.4 ug/l	06-23-95	NDA
alphaBHC	508	<0.02 ug/l	06-23-95	NDA
beta-BHC	508	<0.02 ug/l	06-23-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	06-23-95	NDA
delta-BHC	508	<0.02 ug/l	06-23-95	NDA
alpha-Chlordane	508	<0.2 ug/l	06-23-95	NDA
gamma-Chlordane	508	<0.2 ug/l	06-23-95	NDA
4,4'-DDT	508	<0.01 ug/l	06-23-95	NDA
4,4'DDE	508	<0.01 ug/l	06-23-95	NDA
4,4'-DDD	508	<0.01 ug/l	06-23-95	NDA
Dieldrin	508	<0.5 ug/l	06-23-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
beta-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	06-23-95	NDA
Endrin	508	<0.01 ug/l	06-23-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	06-23-95	NDA
Heptachlor	508	<0.04 ug/l	06-23-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	06-23-95	NDA
Toxaphene	508	<1.0 ug/l	06-23-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: June 28, 1995



**Water Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Dry Event #1, TRIP BLANK

Lab Log No: 49984

Sample Date/Time: June 14, 1995

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	06-20-95	RJI
Arsenic	206.2	<0.001 mg/l	06-15-95	RJI
Beryllium	210.1	<0.005 mg/l	06-16-95	RJI
Cadmium	213.2	<0.0001 mg/l	06-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	06-19-95	RJI
Chromium, VI	218.4	<0.01 mg/l	06-14-95	NDA
Copper	220.2	<0.001 mg/l	06-22-95	RJI
Lead	239.2	<0.001 mg/l	06-22-95	RJI
Mercury	245.2	<0.0002 mg/l	06-27-95	RJI
Nickel	249.1	<0.01 mg/l	06-16-95	RJI
Selenium	270.2	<0.002 mg/l	06-23-95	RJI
Silver	272.2	<0.0002 mg/l	06-27-95	RJI
Thallium	279.2	<0.001 mg/l	06-27-95	RJI
Zinc	289.1	0.012 mg/l	06-20-95	RJI
Cyanide, Free	DER (White)	<0.005 mg/l	06-15-95	LT
Aluminum	202.1	<0.1 mg/l	06-16-95	RJI
Alkalinity	310.1	0.2 mg/l	06-19-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	06-22-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	06-15-95	LT
Hardness	130.1	2 mg/l	06-15-95	KW
Iron	236.1	0.87 mg/l	06-19-95	RJI
Manganese	243.1	<0.01 mg/l	06-16-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	06-20-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	06-20-95	LT
Chloride	325.2	<2 mg/l	06-19-95	LT






**Water Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Dry Event #1, TRIP BLANK  
Sample Date/Time: June 14, 1995  
Sampler: N.A. Conaway

Lab Log No: 49984

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease	413.1	<0.4 mg/l	06-22-95	KW
CBOD <sub>5</sub>	405.1	2 mg/l	06-19-95	KW
Total Suspended Solids	160.2	2 mg/l	06-19-95	KW
Phosphorus	365.4	<0.01 mg/l	06-16-95	LT
COD	410.4	<10 mg/l	06-20-95	NDA
Aldrin	508	<0.4 ug/l	06-23-95	NDA
alpha-BHC	508	<0.02 ug/l	06-23-95	NDA
beta-BHC	508	<0.02 ug/l	06-23-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	06-23-95	NDA
delta-BHC	508	<0.02 ug/l	06-23-95	NDA
alpha-Chlordane	508	<0.2 ug/l	06-23-95	NDA
gamma-Chlordane	508	<0.2 ug/l	06-23-95	NDA
4,4'-DDT	508	<0.01 ug/l	06-23-95	NDA
4,4'-DDE	508	<0.01 ug/l	06-23-95	NDA
4,4'-DDD	508	<0.01 ug/l	06-23-95	NDA
Dieldrin	508	<0.5 ug/l	06-23-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
beta-Endosulfan	508	<0.01 ug/l	06-23-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	06-23-95	NDA
Endrin	508	<0.01 ug/l	06-23-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	06-23-95	NDA
Heptachlor	508	<0.04 ug/l	06-23-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	06-23-95	NDA
Toxaphene	508	<1.0 ug/l	06-23-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: June 28, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Dry Event #1, TWELVE MILE CREEK

**Sample Date/Time:** June 14, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
08:15 AM	pH	8.3	NAC
13:50 PM	pH	8.5	NAC
17:30 PM	pH	8.4	NAC
08:15 AM	Dissolved Oxygen	5.72 mg/l	NAC
13:50 PM	Dissolved Oxygen	5.0 mg/l	NAC
17:30 PM	Dissolved Oxygen	5.38 mg/l	NAC
08:15 AM	Temperature	14.5 °C	NAC
13:50 PM	Temperature	19.4 °C	NAC
17:30 PM	Temperature	20.2 °C	NAC
08:15 AM	Conductivity	411 uS/cm	NAC
13:50 PM	Conductivity	413 uS/cm	NAC
17:30 PM	Conductivity	416 uS/cm	NAC
08:15 AM	Velocity *	0.5 fps	NAC

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President

Reported: June 28, 1995  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Dry Event #1, WALNUT CREEK

**Sample Date/Time:** June 14, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:25 AM	pH	8.6	NAC
15:00 PM	pH	8.7	NAC
18:16 PM	pH	8.7	NAC
10:25 AM	Dissolved Oxygen	5.62 mg/l	NAC
15:00 PM	Dissolved Oxygen	5.38 mg/l	NAC
18:16 PM	Dissolved Oxygen	5.22 mg/l	NAC
10:25 AM	Temperature	17.5 °C	NAC
15:00 PM	Temperature	23.6 °C	NAC
18:16 PM	Temperature	23.4 °C	NAC
10:25 AM	Conductivity	554 uS/cm	NAC
15:00 PM	Conductivity	553 uS/cm	NAC
18:16 PM	Conductivity	552 uS/cm	NAC
10:25 AM	Velocity *	2.47 fps	NAC

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President

Reported: June 28, 1995  
Revised: Sept 18, 1996



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(814) 474-2044

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FAIRVIEW, PA. 16415

### Field Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

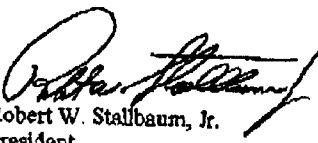
Sample ID: Dry Event #1, ELK CREEK

Sample Date/Time: June 14, 1995

Sampler: N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
11:18 AM	pH	8.9	NAC
15:30 PM	pH	9.2	NAC
18:40 PM	pH	9.0	NAC
11:18 AM	Dissolved Oxygen	6.25 mg/l	NAC
15:30 PM	Dissolved Oxygen	5.03 mg/l	NAC
18:40 PM	Dissolved Oxygen	5.03 mg/l	NAC
11:18 AM	Temperature	20.7 °C	NAC
15:30 PM	Temperature	25.2 °C	NAC
18:40 PM	Temperature	24.1 °C	NAC
11:18 AM	Conductivity	419 uS/cm	NAC
15:30 PM	Conductivity	402 uS/cm	NAC
18:40 PM	Conductivity	393 uS/cm	NAC
11:18 AM	Velocity *	1.41 fps	NAC

\*Result is an average of three trials using stop watch and oranges.

  
Robert W. Stallbaum, Jr.  
President

Reported: June 28, 1995  
Revised: Sept 18, 1996



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #02W, TWELVE MILE CREEK **Lab Log No:** 50759

**Sample Date/Time:** August 11, 1995/10:30AM, 12:20PM, 14:27PM

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	08-23-95	RJI
Arsenic	206.2	0.011 mg/l	08-22-95	RJI
Beryllium	210.1	<0.005 mg/l	08-23-95	RJI
Cadmium	213.2	0.0004 mg/l	08-17-95	NAC
Chromium, Total	218.1	0.13 mg/l	08-22-95	RJI
Chromium, VI	218.4	<0.01 mg/l	08-11-95	NDA
Copper	220.2	0.021 mg/l	08-22-95	RJI
Lead	239.2	0.018 mg/l	08-15-95	NAC
Mercury	245.1	<0.0002 mg/l	08-24-95	RJI
Nickel	249.1	0.04 mg/l	08-22-95	RJI
Selenium	270.2	<0.002 mg/l	08-21-95	RJI
Silver	272.2	0.0003 mg/l	08-22-95	RJI
Thallium	279.2	<0.001 mg/l	08-21-95	RJI
Zinc	289.1	0.2 mg/l	08-18-95	NAC
Cyanide, Free	DER (White)	<0.005 mg/l	08-15-95	LT
Aluminum	202.1	13.8 mg/l	08-18-95	NAC
Alkalinity	310.1	44 mg/l	08-16-95	KW
Ammonia Nitrogen	350.1	0.19 mg/l	08-18-95	LT
Fecal Coliform				
Grab@12:20PM	SM-16, 909C	13,100 col/100 ml	08-12-95	LT
Hardness	130.1	112 mg/l	08-11-95	KW
Iron	236.1	19.5 mg/l	08-18-95	NAC
Manganese	243.1	1.34 mg/l	08-22-95	RJI
Nitrite Nitrogen	353.2	0.06 mg/l	08-17-95	LT
Nitrate Nitrogen	353.2	3.28 mg/l	08-17-95	LT
Chloride	325.2	35 mg/l	08-15-95	LT



**Water Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

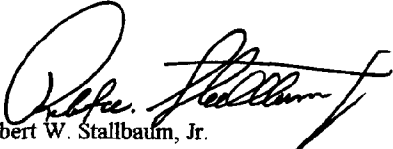
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #02W, TWELVE MILE CREEK Lab Log No: 50759

Sample Date/Time: August 11, 1995/10:30AM, 12:20PM, 14:27PM

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease Grab				
@10:30AM	413.1	<0.4 mg/l	08-22-95	KW
@12:20PM	413.1	<0.4 mg/l	08-22-95	KW
@14:27PM	413.1	0.8 mg/l	08-22-95	KW
CBOD <sub>5</sub>	405.1	10 mg/l	08-16-95	KW
Total Suspended Solids	160.2	680 mg/l	08-16-95	KW
Phosphorus	365.4	0.89 mg/l	08-22-95	LT
COD	410.4	115 mg/l	08-22-95	NDA
Aldrin	508	<0.4 ug/l	08-24-95	NDA
alpha-BHC	508	<0.02 ug/l	08-24-95	NDA
beta-BHC	508	<0.02 ug/l	08-24-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	08-24-95	NDA
delta-BHC	508	<0.02 ug/l	08-24-95	NDA
alpha-Chlordane	508	<0.2 ug/l	08-24-95	NDA
gamma-Chlordane	508	<0.2 ug/l	08-24-95	NDA
4,4'-DDT	508	<0.01 ug/l	08-24-95	NDA
4,4'DDE	508	<0.01 ug/l	08-24-95	NDA
4,4'-DDD	508	<0.01 ug/l	08-24-95	NDA
Dieldrin	508	<0.5 ug/l	08-24-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
beta-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	08-24-95	NDA
Endrin	508	<0.01 ug/l	08-24-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	08-24-95	NDA
Heptachlor	508	<0.04 ug/l	08-24-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	08-24-95	NDA
Toxaphene	508	<1.0 ug/l	08-24-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: August 24, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #02W. WALNUT CREEK **Lab Log No:** 50760

**Sample Date/Time:** August 11, 1995/10:25AM, 12:45PM, 14:45PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	08-23-95	RJI
Arsenic	206.2	0.010 mg/l	08-22-95	RJI
Beryllium	210.1	<0.005 mg/l	08-23-95	RJI
Cadmium	213.2	0.0005 mg/l	08-17-95	NAC
Chromium, Total	218.1	0.29 mg/l	08-22-95	RJI
Chromium, VI	218.4	<0.01 mg/l	08-11-95	NDA
Copper	220.2	0.033 mg/l	08-22-95	RJI
Lead	239.2	0.049 mg/l	08-15-95	NAC
Mercury	245.1	<0.0002 mg/l	08-24-95	RJI
Nickel	249.1	0.10 mg/l	08-22-95	RJI
Selenium	270.2	<0.002 mg/l	08-21-95	RJI
Silver	272.2	<0.0002 mg/l	08-22-95	RJI
Thallium	279.2	<0.001 mg/l	08-21-95	RJI
Zinc	289.1	0.67 mg/l	08-18-95	NAC
Cyanide, Free	DER (White)	<0.005 mg/l	08-15-95	LT
Aluminum	202.1	38.5 mg/l	08-18-95	NAC
Alkalinity	310.1	165 mg/l	08-16-95	KW
Ammonia Nitrogen	350.1	0.33 mg/l	08-18-95	LT
Fecal Coliform				
Grab@12:45 PM	SM-16, 909C	11,500 col/100 ml	08-12-95	LT
Hardness	130.1	144 mg/l	08-11-95	KW
Iron	236.1	35.5 mg/l	08-18-95	NAC
Manganese	243.1	2.44 mg/l	08-22-95	RJI
Nitrite Nitrogen	353.2	0.10 mg/l	08-17-95	LT
Nitrate Nitrogen	353.2	0.59 mg/l	08-17-95	LT
Chloride	325.2	29 mg/l	08-15-95	LT



**Water Analyses Report**  
Malcolm Pirnie, Inc.

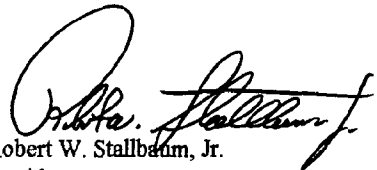
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #02W, WALNUT CREEK Lab Log No: 50760

Sample Date/Time: August 11, 1995/10:25AM, 12:45PM, 14:45PM

Sampler: R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease Grab				
@10:25AM	413.1	1.6 mg/l	08-22-95	KW
@12:45PM	413.1	3.2 mg/l	08-22-95	KW
@14:45PM	413.1	1.2 mg/l	08-22-95	KW
CBOD <sub>5</sub>	405.1	15 mg/l	08-16-95	KW
Total Suspended Solids	160.2	1508 mg/l	08-16-95	KW
Phosphorus	365.4	1.74 mg/l	08-22-95	LT
COD	410.4	125 mg/l	08-22-95	NDA
Aldrin	508	<0.4 ug/l	08-24-95	NDA
alpha-BHC	508	<0.02 ug/l	08-24-95	NDA
beta-BHC	508	<0.02 ug/l	08-24-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	08-24-95	NDA
delta-BHC	508	<0.02 ug/l	08-24-95	NDA
alpha-Chlordane	508	<0.2 ug/l	08-24-95	NDA
gamma-Chlordane	508	<0.2 ug/l	08-24-95	NDA
4,4'-DDT	508	<0.01 ug/l	08-24-95	NDA
4,4'DDE	508	<0.01 ug/l	08-24-95	NDA
4,4'-DDD	508	<0.01 ug/l	08-24-95	NDA
Dieldrin	508	<0.5 ug/l	08-24-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
beta-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	08-24-95	NDA
Endrin	508	<0.01 ug/l	08-24-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	08-24-95	NDA
Heptachlor	508	<0.04 ug/l	08-24-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	08-24-95	NDA
Toxaphene	508	<1.0 ug/l	08-24-95	NDA



Robert W. Stallbaum, Jr.  
President

Reported: August 24, 1995





**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #02W, ELK CREEK **Lab Log No:** 50758

**Sample Date/Time:** August 11, 1995/11:00 AM, 13:30PM, 15:15PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	08-23-95	RJI
Arsenic	206.2	0.003 mg/l	08-22-95	RJI
Beryllium	210.1	<0.005 mg/l	08-23-95	RJI
Cadmium	213.2	<0.0001 mg/l	08-17-95	NAC
Chromium, Total	218.1	<0.05 mg/l	08-22-95	RJI
Chromium, VI	218.4	<0.01 mg/l	08-11-95	NDA
Copper	220.2	0.0002 mg/l	08-22-95	RJI
Lead	239.2	<0.001 mg/l	08-15-95	NAC
Mercury	245.1	<0.0002 mg/l	08-24-95	RJI
Nickel	249.1	0.02 mg/l	08-22-95	RJI
Selenium	270.2	<0.002 mg/l	08-21-95	RJI
Silver	272.2	0.0008 mg/l	08-22-95	RJI
Thallium	279.2	<0.001 mg/l	08-21-95	RJI
Zinc	289.1	<0.005 mg/l	08-18-95	NAC
Cyanide, Free	DER (White)	<0.005 mg/l	08-15-95	LT
Aluminum	202.1	1.28 mg/l	08-18-95	NAC
Alkalinity	310.1	105 mg/l	08-16-95	KW
Ammonia Nitrogen	350.1	0.10 mg/l	08-18-95	LT
Fecal Coliform				
Grab@13:30PM	SM-16, 909C	1940 col/100 ml	08-12-95	LT
Hardness	130.1	184 mg/l	08-11-95	KW
Iron	236.1	0.82 mg/l	08-16-95	NAC
Manganese	243.1	0.06 mg/l	08-22-95	RJI
Nitrite Nitrogen	353.2	0.03 mg/l	08-17-95	LT
Nitrate Nitrogen	353.2	1.27 mg/l	08-17-95	LT
Chloride	325.2	37 mg/l	08-15-95	LT



**Water Analyses Report**  
Malcolm Pirnie, Inc.

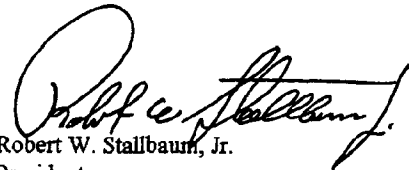
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #02W, ELK CREEK Lab Log No: 50758

Sample Date/Time: August 11, 1995/11:00M, 13:30PM, 15:15PM

Sampler: R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease Grab				
@11:00AM	413.1	<0.4 mg/l	08-22-95	KW
@13:30PM	413.1	<0.4 mg/l	08-22-95	KW
@15:15PM	413.1	<0.4 mg/l	08-22-95	KW
CBOD <sub>5</sub>	405.1	6 mg/l	08-16-95	KW
Total Suspended Solids	160.2	24 mg/l	08-16-95	KW
Phosphorus	365.4	0.04 mg/l	06-22-95	LT
COD	410.4	10 mg/l	06-22-95	NDA
Aldrin	508	<0.4 ug/l	08-24-95	NDA
alpha-BHC	508	<0.02 ug/l	08-24-95	NDA
beta-BHC	508	<0.02 ug/l	08-24-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	08-24-95	NDA
delta-BHC	508	<0.02 ug/l	08-24-95	NDA
alpha-Chlordane	508	<0.2 ug/l	08-24-95	NDA
gamma-Chlordane	508	<0.2 ug/l	08-24-95	NDA
4,4'-DDT	508	<0.01 ug/l	08-24-95	NDA
4,4'DDE	508	<0.01 ug/l	08-24-95	NDA
4,4'-DDD	508	<0.01 ug/l	08-24-95	NDA
Dieldrin	508	<0.5 ug/l	08-24-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
beta-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	08-24-95	NDA
Endrin	508	<0.01 ug/l	08-24-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	08-24-95	NDA
Heptachlor	508	<0.04 ug/l	08-24-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	08-24-95	NDA
Toxaphene	508	<1.0 ug/l	08-24-95	NDA



Robert W. Stallbaum, Jr.  
President

Reported: August 24, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #02W, TRIP BLANK

Lab Log No: 50758B

Sample Date/Time: August 11, 1995

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	08-23-95	RJI
Arsenic	206.2	<0.001 mg/l	08-22-95	RJI
Beryllium	210.1	<0.005 mg/l	08-23-95	RJI
Cadmium	213.2	<0.0001 mg/l	08-17-95	NAC
Chromium, Total	218.1	<0.05 mg/l	08-22-95	RJI
Chromium, VI	218.4	<0.01 mg/l	08-11-95	NDA
Copper	220.2	<0.001 mg/l	08-22-95	RJI
Lead	239.2	<0.001 mg/l	08-15-95	NAC
Mercury	245.1	<0.0002 mg/l	08-24-95	RJI
Nickel	249.1	<0.01 mg/l	08-22-95	RJI
Selenium	270.2	<0.002 mg/l	08-21-95	RJI
Silver	272.2	<0.0002 mg/l	08-22-95	RJI
Thallium	279.2	<0.001 mg/l	08-21-95	RJI
Zinc	289.1	<0.005 mg/l	08-18-95	NAC
Cyanide, Free	DER (White)	<0.005 mg/l	08-15-95	LT
Aluminum	202.1	<0.1 mg/l	08-18-95	NAC
Alkalinity	310.1	0.2 mg/l	08-16-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	08-18-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	08-12-95	LT
Hardness	130.1	2 mg/l	08-11-95	KW
Iron	236.1	<0.03 mg/l	08-18-95	NAC
Manganese	243.1	<0.01 mg/l	08-22-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	08-17-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	08-17-95	LT
Chloride	325.2	<2 mg/l	08-15-95	LT



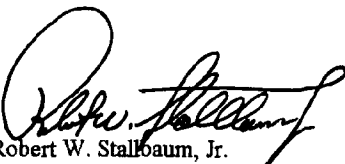
**Water Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Eric County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #02W, TRIP BLANK  
**Sample Date/Time:** August 11, 1995  
**Sampler:** N.A. Conaway

Lab Log No: 50758B

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Oil & Grease	413.1	<0.4 mg/l	08-22-95	KW
CBOD,	405.1	2 mg/l	08-16-95	KW
Total Suspended Solids	160.2	2 mg/l	08-16-95	KW
Phosphorus	365.4	<0.01 mg/l	08-22-95	LT
COD	410.4	<10 mg/l	08-22-95	NDA
Aldrin	508	<0.4 ug/l	08-24-95	NDA
aphaBHC	508	<0.02 ug/l	08-24-95	NDA
beta-BHC	508	<0.02 ug/l	08-24-95	NDA
gamma-BHC(Lindane)	508	<0.02 ug/l	08-24-95	NDA
delta-BHC	508	<0.02 ug/l	08-24-95	NDA
alpha-Chlordane	508	<0.2 ug/l	08-24-95	NDA
gamma-Chlordane	508	<0.2 ug/l	08-24-95	NDA
4,4'-DDT	508	<0.01 ug/l	08-24-95	NDA
4,4'DDE	508	<0.01 ug/l	08-24-95	NDA
4,4'-DDD	508	<0.01 ug/l	08-24-95	NDA
Dieldrin	508	<0.5 ug/l	08-24-95	NDA
alpha-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
beta-Endosulfan	508	<0.01 ug/l	08-24-95	NDA
endosulfan Sulfate	508	<0.01 ug/l	08-24-95	NDA
Endrin	508	<0.01 ug/l	08-24-95	NDA
Endrin Aldehyde	508	<0.01 ug/l	08-24-95	NDA
Heptachlor	508	<0.04 ug/l	08-24-95	NDA
Heptachlor Epoxide	508	<0.02 ug/l	08-24-95	NDA
Toxaphene	508	<1.0 ug/l	08-24-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: August 24, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 63  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #02W, TWELVE MILE CREEK

**Sample Date/Time:** August 11, 1995

**Sampler:** N.A. Conaway

**Site Observations:** In round one all of the flow was near the cement wall, covering roughly 2/3 of the total bed. In rounds two and three the flow had spread over the entire bed. Water was less turbid in round three. There was no noticeable change in turbidity between rounds one and two.

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:30 AM	pH	8.2	NAC
12:20 PM	pH	8.0	NAC
14:27 PM	pH	8.0	NAC
10:30 AM	Dissolved Oxygen	4.68 mg/l	NAC
12:20 PM	Dissolved Oxygen	4.70 mg/l	NAC
14:27 PM	Dissolved Oxygen	4.36 mg/l	NAC
10:30 AM	Temperature	19.7 °C	NAC
12:20 PM	Temperature	20.5 °C	NAC
14:27 PM	Temperature	22.1 °C	NAC
10:30 AM	Conductivity	241 uS/cm	NAC
12:20 PM	Conductivity	324 uS/cm	NAC
14:27 PM	Conductivity	361 uS/cm	NAC
10:30 AM	Velocity *	4.9 fps	NAC
12:20 PM	Velocity *	4.9 fps	NAC
14:27 PM	Velocity *	3.67 fps	NAC
10:30 AM	Depth	1.75 ft	NAC
12:20 PM	Depth	2.0 ft	NAC
14:27 PM	Depth	1.37 ft	NAC

\*Result is an average of three trials using stop watch and oranges.

*Robert W. Stallbaum, Jr.*  
Robert W. Stallbaum, Jr.  
President

Reported: August 24, 1995

Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #02W, WALNUT CREEK

**Sample Date/Time:** August 11, 1995

**Sampler:** R. W. Stallbaum

**Site Observation:** During round one the water was slightly turbid. During round two the water turned black, there were a lot of floating branches and debris. By the third round the water had spread all the way across the stream bed.

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:25 AM	pH	8.26	RWS
12:45 PM	pH	7.76	RWS
14:45 PM	pH	7.81	RWS
10:25 AM	Dissolved Oxygen	8.4 mg/l	RWS
12:45 PM	Dissolved Oxygen	7.7 mg/l	RWS
14:45 PM	Dissolved Oxygen	7.4 mg/l	RWS
10:25 AM	Temperature	21.0 °C	RWS
12:45 PM	Temperature	22.0 °C	RWS
14:45 PM	Temperature	22.1 °C	RWS
10:25 AM	Conductivity	276 uS/cm	RWS
12:45 PM	Conductivity	416 uS/cm	RWS
14:45 PM	Conductivity	305 uS/cm	RWS
10:25 AM	Velocity *	2.6 fps	RWS
12:45 PM	Velocity *	2.86 fps	RWS
14:45 PM	Velocity *	7.33 fps	RWS



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**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Event #02W, WALNUT CREEK  
Sample Date/Time: August 11, 1995  
Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:25 AM- St 1	Distance	18.69 ft	RWS
- St 2	from bridge	19.03 ft	RWS
- St 3	to	19.27 ft	RWS
- St 4	water surface	19.18 ft	RWS
- St 8		19.15 ft	RWS
12:45PM - St 1	Distance	18.08 ft	RWS
- St 2	from bridge	18.70 ft	RWS
- St 3	to	18.77 ft	RWS
- St 4	water surface	18.67 ft	RWS
- St 5		18.70 ft	RWS
- St 8		18.56 ft	RWS
14:45 PM- St 1	Distance	18.11 ft	RWS
- St 2	from bridge	17.97 ft	RWS
- St 3	to	18.01 ft	RWS
- St 4	water surface	18.03 ft	RWS
- St 5		17.94 ft	RWS
- St 7		18.52 ft	RWS
- St 8		18.44 ft	RWS

Robert W. Stallbaum, Jr.  
President  
Reported: August 24, 1995  
Revised: Sept 18, 1996



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**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #02W, ELK CREEK

**Sample Date/Time:** August 11, 1995

**Sampler:** R. W. Stallbaum

**Site Observations:** During rounds one and two the water stayed clear. During round three the water was slightly turbid with what looked like algae.

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
11:00 AM	pH	7.3	RWS
13:30 PM	pH	8.3	RWS
15:15 PM	pH	8.4	RWS
12:00 AM	Dissolved Oxygen	7.87 mg/l	RWS
13:30 PM	Dissolved Oxygen	9.3 mg/l	RWS
15:15 PM	Dissolved Oxygen	9.4 mg/l	RWS
11:00 AM	Temperature	22.2 °C	RWS
13:30 PM	Temperature	24.4 °C	RWS
15:15 PM	Temperature	26.8 °C	RWS
11:00 AM	Conductivity	469 uS/cm	RWS
13:30 PM	Conductivity	462 uS/cm	RWS
15:15 PM	Conductivity	473 uS/cm	RWS
11:00 AM	Velocity *	1.33 fps	RWS
13:30 PM	Velocity *	1.43 fps	RWS
15:15 PM	Velocity *	1.63 fps	RWS

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President  
Reported: August 24, 1995  
Revised: Sept 18, 1996





**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #03W, TWELVE MILE CREEK      **Lab Log No:** 51224

**Sample Date/Time:** September 20, 1995/13:40PM, 15:38PM, 17:28PM

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	09-28-95	RJI
Arsenic	206.2	<0.001 mg/l	09-22-95	RJI
Beryllium	210.1	<0.005 mg/l	09-26-95	RJI
Cadmium	213.2	<0.0001 mg/l	09-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	09-21-95	RJI
Chromium, VI	218.4	<0.01 mg/l	09-21-95	RJI
Copper	220.2	<0.001 mg/l	09-27-95	RJI
Lead	239.2	<0.001 mg/l	09-25-95	RJI
Mercury	245.1	<0.0002 mg/l	09-29-95	RJI
Nickel	249.1	<0.01 mg/l	09-21-95	RJI
Selenium	270.2	<0.002 mg/l	09-26-95	RJI
Silver	272.2	<0.0002 mg/l	09-27-95	RJI
Thallium	279.2	<0.001 mg/l	09-26-95	RJI
Zinc	289.1	<0.005 mg/l	09-21-95	RJI
Aluminum	202.1	0.31 mg/l	09-26-95	RJI
Alkalinity	310.1	79 mg/l	09-25-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	09-22-95	LT
Fecal Coliform				
Grab@15:38PM	SM-16, 909C	1,150 col/100 ml	09-21-95	LT
Hardness	130.1	186 mg/l	09-21-95	KW
Iron	236.1	0.15 mg/l	09-21-95	RJI
Manganese	243.1	0.04 mg/l	10-02-95	RJI
Nitrite Nitrogen	353.2	0.01 mg/l	09-26-95	LT
Nitrate Nitrogen	353.2	2.85 mg/l	09-26-95	LT
Chloride	325.2	34 mg/l	09-26-95	LT



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**Water Analyses Report**  
Malcolm Pirnie, Inc.

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Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Event #03W, TWELVE MILE CREEK Lab Log No: 51224  
Sample Date/Time: September 20, 1995/13:40PM, 15:38PM, 17:28PM  
Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
CBOD,	405.1	7 mg/l	09-25-95	KW
Total Suspended Solids	160.2	4 mg/l	09-21-95	KW
Phosphorus	365.4	0.01 mg/l	09-21-95	LT
COD	410.4	<10 mg/l	09-22-95	NAC

  
Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #03W. WALNUT CREEK **Lab Log No:** 51225  
**Sample Date/Time:** September 20, 1995/13:40 PM, 15:40PM, 17:45PM  
**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	09-28-95	RJI
Arsenic	206.2	<0.001 mg/l	09-22-95	RJI
Beryllium	210.1	<0.005 mg/l	09-26-95	RJI
Cadmium	213.2	<0.0001 mg/l	09-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	09-21-95	RJI
Chromium, VI	218.4	<0.01 mg/l	09-21-95	NDA
Copper	220.2	<0.001 mg/l	09-27-95	RJI
Lead	239.2	<0.001 mg/l	09-25-95	RJI
Mercury	245.1	<0.0002 mg/l	09-29-95	RJI
Nickel	249.1	<0.01 mg/l	09-21-95	RJI
Selenium	270.2	<0.002 mg/l	09-26-95	RJI
Silver	272.2	<0.0002 mg/l	09-27-95	RJI
Thallium	279.2	<0.001 mg/l	09-26-95	RJI
Zinc	289.1	<0.005 mg/l	09-21-95	RJI
Aluminum	202.1	<0.1 mg/l	09-26-95	RJI
Alkalinity	310.1	104 mg/l	08-16-95	KW
Ammonia Nitrogen	350.1	0.05 mg/l	08-18-95	LT
Fecal Coliform				
Grab@15:40 PM	SM-16, 909C	2,140 col/100 ml	09-21-95	LT
Hardness	130.1	144 mg/l	09-21-95	KW
Iron	236.1	0.13 mg/l	09-21-95	RJI
Manganese	243.1	0.03 mg/l	10-02-95	RJI
Nitrite Nitrogen	353.2	0.02 mg/l	09-26-95	LT
Nitrate Nitrogen	353.2	0.70 mg/l	09-26-95	LT
Chloride	325.2	42 mg/l	09-26-95	LT



**Water Analyses Report**  
Malcolm Pirnie, Inc.


Project: Eric County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #03W, WALNUT CREEK Lab Log No: 51225

Sample Date/Time: September 20, 1995/1340PM, 15:40PM, 17:45PM

Sampler: R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
CBOD,	405.1	5 mg/l	09-25-95	KW
Total Suspended Solids	160.2	4 mg/l	09-21-95	KW
Phosphorus	365.4	<0.014 mg/l	09-21-95	LT
COD	410.4	10 mg/l	09-22-95	NAC



Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #03W, ELK CREEK **Lab Log No:** 51226

**Sample Date/Time:** September 20, 1995/14:15PM, 16:15PM, 18:20PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	09-28-95	RJI
Arsenic	206.2	<0.001 mg/l	09-22-95	RJI
Beryllium	210.1	<0.005 mg/l	09-26-95	RJI
Cadmium	213.2	<0.0001 mg/l	09-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	09-21-95	RJI
Chromium, VI	218.4	<0.01 mg/l	09-21-95	NDA
Copper	220.2	<0.001 mg/l	09-27-95	RJI
Lead	239.2	<0.001 mg/l	09-25-95	RJI
Mercury	245.1	<0.0002 mg/l	09-29-95	RJI
Nickel	249.1	<0.01 mg/l	09-21-95	RJI
Selenium	270.2	<0.002 mg/l	09-26-95	RJI
Silver	272.2	<0.0002 mg/l	09-27-95	RJI
Thallium	279.2	<0.001 mg/l	09-26-95	RJI
Zinc	289.1	<0.005 mg/l	09-21-95	RJI
Aluminum	202.1	<0.1 mg/l	09-26-95	RJI
Alkalinity	310.1	98 mg/l	09-25-95	KW
Ammonia Nitrogen	350.1	0.07 mg/l	09-22-95	LT
Fecal Coliform				
Grab@16:15PM	SM-16, 909C	290 col/100 ml	09-21-95	LT
Hardness	130.1	222 mg/l	09-21-95	KW
Iron	236.1	0.09 mg/l	09-21-95	RJI
Manganese	243.1	0.03 mg/l	10-02-95	RJI
Nitrite Nitrogen	353.2	0.03 mg/l	09-26-95	LT
Nitrate Nitrogen	353.2	1.87 mg/l	09-26-95	LT
Chloride	325.2	46 mg/l	09-26-95	LT



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**Water Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Event #03W, ELK CREEK Lab Log No: 51226  
Sample Date/Time: September 20, 1995/14:15PM, 16:15PM, 18:20PM  
Sampler: R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
CBOD,	405.1	6 mg/l	09-16-95	KW
Total Suspended Solids	160.2	2 mg/l	09-16-95	KW
Phosphorus	365.4	0.06 mg/l	09-21-95	LT
COD	410.4	10 mg/l	09-22-95	NAC

  
Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #03W, TRIP BLANK

**Lab Log No:** 51223

**Sample Date/Time:** September 20, 1995

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Antimony	204.2	<0.003 mg/l	09-28-95	RJI
Arsenic	206.2	<0.001 mg/l	09-22-95	RJI
Beryllium	210.1	<0.005 mg/l	09-26-95	RJI
Cadmium	213.2	<0.0001 mg/l	09-27-95	RJI
Chromium, Total	218.1	<0.05 mg/l	09-21-95	RJI
Chromium, VI	218.4	<0.01 mg/l	09-21-95	NDA
Copper	220.2	<0.001 mg/l	09-27-95	RJI
Lead	239.2	<0.001 mg/l	09-25-95	RJI
Mercury	245.1	<0.0002 mg/l	09-29-95	RJI
Nickel	249.1	<0.01 mg/l	09-21-95	RJI
Selenium	270.2	<0.002 mg/l	09-26-95	RJI
Silver	272.2	<0.0002 mg/l	09-27-95	RJI
Thallium	279.2	<0.001 mg/l	09-26-95	RJI
Zinc	289.1	<0.005 mg/l	09-21-95	RJI
Aluminum	202.1	<0.1 mg/l	09-26-95	RJI
Alkalinity	310.1	<0.02 mg/l	09-25-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	09-22-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	09-21-95	LT
Hardness	130.1	2 mg/l	09-21-95	KW
Iron	236.1	<0.03 mg/l	09-21-95	RJI
Manganese	243.1	<0.01 mg/l	10-02-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	09-26-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	09-26-95	LT
Chloride	325.2	<2 mg/l	09-26-95	LT



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**Water Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #03W, TRIP BLANK  
**Sample Date/Time:** September 20, 1995  
**Sampler:** N.A. Conaway

Lab Log No: 51223

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
CBOD,	405.1	2 mg/l	09-25-95	KW
Total Suspended Solids	160.2	2 mg/l	08-21-95	KW
Phosphorus	365.4	<0.01 mg/l	08-21-95	LT
COD	410.4	<10 mg/l	08-22-95	NAC

Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995





**CHURCH** laboratory, inc.

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FAIRVIEW, PA. 15415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #03W, TWELVE MILE CREEK

**Sample Date/Time:** September 20, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
13:40 PM	pH	8.2	NAC
15:38 PM	pH	8.2	NAC
17:28 PM	pH	8.2	NAC
13:40 PM	Dissolved Oxygen	4.6 mg/l	NAC
15:38 PM	Dissolved Oxygen	4.63 mg/l	NAC
17:28 PM	Dissolved Oxygen	4.47 mg/l	NAC
13:40 PM	Temperature	15.6 °C	NAC
15:38 PM	Temperature	15.7 °C	NAC
17:28 PM	Temperature	16 °C	NAC
13:40 PM	Conductivity	417 uS/cm	NAC
15:38 PM	Conductivity	434 uS/cm	NAC
17:28 PM	Conductivity	428 uS/cm	NAC
13:40 PM	Velocity *	0.84 fps	NAC
15:38 PM	Velocity *	0.78 fps	NAC
17:28 PM	Velocity *	0.58 fps	NAC
13:40 PM	Depth	0.75 ft	NAC
15:38 PM	Depth	0.75 ft	NAC
17:28 PM	Depth	0.57 ft	NAC

\*Result is an average of three trials using stop watch and orange.

Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995  
Revised: Sept 18, 1996


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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 15415

### Field Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #03W, WALNUT CREEK

Sample Date/Time: September 20, 1995

Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
13:40 PM	pH	8.05	RWS
15:40 PM	pH	8.23	RWS
17:45 PM	pH	8.29	RWS
13:40 PM	Dissolved Oxygen	10.2 mg/l	RWS
15:40 PM	Dissolved Oxygen	10.4 mg/l	RWS
17:45 PM	Dissolved Oxygen	13.2 mg/l	RWS
13:40 PM	Temperature	15.7 °C	RWS
15:40 PM	Temperature	16.1 °C	RWS
17:45 PM	Temperature	16.3 °C	RWS
13:40 PM	Conductivity	443 uS/cm	RWS
15:40 PM	Conductivity	476 uS/cm	RWS
17:45 PM	Conductivity	5424 uS/cm	RWS
13:40 PM	Velocity *	1.72 fps	RWS
15:40 PM	Velocity *	2.24 fps	RWS
17:45 PM	Velocity *	2.46 fps	RWS

\*Result is an average of three trials using stop watch and oranges.



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FAIRVIEW, PA. 16415

**Field Analyses Report  
Malcolm Pirnie, Inc.**

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #03W, WALNUT CREEK  
**Sample Date/Time:** September 20, 1995  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
13:40 PM- St 1 - St 2 - St 3 - St 4	Distance	19.18 ft	RWS
	from bridge	19.31 ft	RWS
	to	19.56 ft	RWS
	water surface	19.53 ft	RWS
15:40 PM- St 1 - St 2 - St 3 - St 4	Distance	19.14 ft	RWS
	from bridge	19.26 ft	RWS
	to	19.51 ft	RWS
	water surface	19.50 ft	RWS
17:45 AM- St 1 - St 2 - St 3 - St 4	Distance	19.23 ft	RWS
	from bridge	19.30 ft	RWS
	to	19.59 ft	RWS
	water surface	19.53 ft	RWS

Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995  
Revised: Sept 18, 1996


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### Field Analyses Report

**Customer:** Malcolm Pirnie, Inc.  
 S. 3515 Abbott Road  
 Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
 for Lake Erie Watershed #2758-01

**Sample ID:** Event #03W, ELK CREEK  
**Sample Date/Time:** September 20, 1995  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
14:15 PM	pH	8.2	RWS
16:15 PM	pH	8.1	RWS
18:20 PM	pH	8.1	RWS
14:15 PM	Dissolved Oxygen	11.4 mg/l	RWS
16:15 PM	Dissolved Oxygen	11.2 mg/l	RWS
18:20 PM	Dissolved Oxygen	14.5 mg/l	RWS
14:15 PM	Temperature	16.9 °C	RWS
16:15 PM	Temperature	17.3 °C	RWS
18:20 PM	Temperature	17.3 °C	RWS
14:15 PM	Conductivity	544 uS/cm	RWS
16:15 PM	Conductivity	536 uS/cm	RWS
18:20 PM	Conductivity	551 uS/cm	RWS
14:15 PM	Velocity *	0.94 fps	RWS
16:15 PM	Velocity *	1.08 fps	RWS
18:20 PM	Velocity *	1.04 fps	RWS

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President

Reported: October 2, 1995  
 Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

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FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219


**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #04D, TWELVE MILE CREEK **Lab Log No:** 51449

**Sample Date/Time:** October 3, 1995/ 07:30AM, 09:30AM, 11:33AM

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJI
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJI
Chromium, Total	218.1	<0.05 mg/l	10-05-95	RJI
Copper	220.2	0.001 mg/l	10-06-95	RJI
Lead	239.2	<0.001 mg/l	10-03-95	RJI
Nickel	249.1	0.02 mg/l	10-06-95	RJI
Silver	272.2	<0.0002 mg/l	10-11-95	RJI
Zinc	289.1	<0.005 mg/l	10-06-95	RJI
Aluminum	202.1	<0.1 mg/l	10-11-95	RJI
Alkalinity	310.1	88 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	10-03-95	LT
Fecal Coliform				
Grab@09:30AM	SM-16, 909C	29 col/100 ml	10-04-95	LT
Hardness	130.1	198 mg/l	10-03-95	KW
Iron	236.1	<0.03 mg/l	10-06-95	RJI
Manganese	243.1	0.01 mg/l	10-12-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	1.95 mg/l	10-10-95	LT
Chloride	325.2	40 mg/l	10-06-95	LT
CBOD,	405.1	2 mg/l	10-09-95	KW
Total Suspended Solids	160.2	2 mg/l	10-05-95	KW
Phosphorus	365.4	<0.01 mg/l	10-04-95	LT
COD	410.4	<10 mg/l	10-11-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

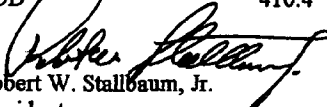
**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #04D, WALNUT CREEK **Lab Log No:** 51450

**Sample Date/Time:** October 3, 1995/ 07:45AM, 09:50AM, 11:50AM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJ
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJ
Chromium, Total	218.1	<0.05 mg/l	10-05-95	RJ
Copper	220.2	<0.001 mg/l	10-06-95	RJ
Lead	239.2	<0.001 mg/l	10-03-95	RJ
Nickel	249.1	0.01 mg/l	10-06-95	RJ
Silver	272.2	<0.0002 mg/l	10-11-95	RJ
Zinc	289.1	<0.005 mg/l	10-06-95	RJ
Aluminum	202.1	<0.1 mg/l	10-11-95	RJ
Alkalinity	310.1	122 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	0.02 mg/l	10-03-95	LT
Fecal Coliform				
Grab@09:50AM	SM-16, 909C	45 col/100 ml	10-04-95	LT
Hardness	130.1	220 mg/l	10-03-95	KW
Iron	236.1	<0.03 mg/l	10-06-95	RJ
Manganese	243.1	0.02 mg/l	10-12-95	RJ
Nitrite Nitrogen	353.2	<0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	0.10 mg/l	10-10-95	LT
Chloride	325.2	51 mg/l	10-06-95	LT
CBOD,	405.1	2 mg/l	10-09-95	KW
Total Suspended Solids	160.2	4 mg/l	10-05-95	KW
Phosphorus	365.4	<0.01 mg/l	10-04-95	LT
COD	410.4	<10 mg/l	10-11-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #04D, ELK CREEK **Lab Log No:** 51451

**Sample Date/Time:** October 3, 1995/ 08:15AM, 10:20AM, 12:20PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJ
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJ
Chromium, Total	218.1	<0.05 mg/l	10-05-95	RJ
Copper	220.2	<0.001 mg/l	10-06-95	RJ
Lead	239.2	<0.001 mg/l	10-03-95	RJ
Nickel	249.1	0.01 mg/l	10-06-95	RJ
Silver	272.2	<0.0002 mg/l	10-11-95	RJ
Zinc	289.1	<0.005 mg/l	10-06-95	RJ
Aluminum	202.1	<0.1 mg/l	10-11-95	RJ
Alkalinity	310.1	108 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	0.11 mg/l	10-03-95	LT
Fecal Coliform				
Grab@10:20AM	SM-16, 909C	12 col/100 ml	10-04-95	LT
Hardness	130.1	226 mg/l	10-03-95	KW
Iron	236.1	0.06 mg/l	10-06-95	RJ
Manganese	243.1	0.03 mg/l	10-12-95	RJ
Nitrite Nitrogen	353.2	0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	2.40 mg/l	10-10-95	LT
Chloride	325.2	51 mg/l	10-06-95	LT
CBOD,	405.1	2 mg/l	10-09-95	KW
Total Suspended Solids	160.2	2 mg/l	10-05-95	KW
Phosphorus	365.4	0.08 mg/l	10-04-95	LT
COD	410.4	<10 mg/l	10-11-95	NDA

Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #04D, TRIP BLANK

**No:** 51448

**Sample Date/Time:** October 3, 1995

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJI
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJI
Chromium, Total	218.1	<0.05 mg/l	10-05-95	RJI
Copper	220.2	0.001 mg/l	10-06-95	RJI
Lead	239.2	<0.001 mg/l	10-03-95	RJI
Nickel	249.1	< 0.01 mg/l	10-06-95	RJI
Silver	272.2	<0.0002 mg/l	10-11-95	RJI
Zinc	289.1	<0.005 mg/l	10-06-95	RJI
Aluminum	202.1	<0.1 mg/l	10-11-95	RJI
Alkalinity	310.1	<0.02 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	10-03-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	10-04-95	LT
Hardness	130.1	<2 mg/l	10-03-95	KW
Iron	236.1	<0.031 mg/l	10-06-95	RJI
Manganese	243.1	<0.014 mg/l	10-12-95	RJI
Nitrite Nitrogen	353.2	< 0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	10-10-95	LT
Chloride	325.2	<2 mg/l	10-06-95	LT
CBOD,	405.1	<2 mg/l	10-09-95	KW
Total Suspended Solids	160.2	<2 mg/l	10-05-95	KW
Phosphorus	365.4	<0.01 mg/l	10-04-95	LT
COD	410.4	<10 mg/l	10-11-95	NDA

Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995





**CHURCH** laboratory, inc.

(814) 474-2044

7387 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

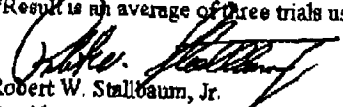
**Sample ID:** Event #04D, TWELVE MILE CREEK

**Sample Date/Time:** October 3, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
07:30 AM	pH	8.3	NAC
09:30 AM	pH	8.2	NAC
11:33 AM	pH	8.2	NAC
07:30 AM	Dissolved Oxygen	6.67 mg/l	NAC
09:30 AM	Dissolved Oxygen	6.72 mg/l	NAC
11:33 AM	Dissolved Oxygen	6.73 mg/l	NAC
07:30 AM	Temperature	13.3 °C	NAC
09:30 AM	Temperature	13.9 °C	NAC
11:33 AM	Temperature	13.9 °C	NAC
07:30 AM	Conductivity	487 uS/cm	NAC
09:30 AM	Conductivity	481 uS/cm	NAC
11:33 AM	Conductivity	489 uS/cm	NAC
07:30 AM	Velocity *	0.22 fps	NAC
09:30 AM	Velocity *	0.21 fps	NAC
11:33 AM	Velocity *	0.21 fps	NAC
07:30 AM	Depth	0.42 ft	NAC
09:30 AM	Depth	0.42 ft	NAC
11:33 AM	Depth	0.42 ft	NAC

\*Result is an average of three trials using stop watch and oranges.

  
Robert W. Stallbaum, Jr.  
President  
Reported: October 16, 1995  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7387 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pimie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #04D, WALNUT CREEK

**Sample Date/Time:** October 3, 1995

**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
07:45 AM	pH	8.3	RWS
09:50 AM	pH	8.3	RWS
11:50 AM	pH	8.4	RWS
07:45 AM	Dissolved Oxygen	10.6 mg/l	RWS
09:50 AM	Dissolved Oxygen	9.6 mg/l	RWS
11:50 AM	Dissolved Oxygen	10.1 mg/l	RWS
07:45 AM	Temperature	13.2 °C	RWS
09:50 AM	Temperature	13.3 °C	RWS
11:55 AM	Temperature	13.9 °C	RWS
07:45 AM	Conductivity	562 uS/cm	RWS
09:50 AM	Conductivity	560 uS/cm	RWS
11:50 AM	Conductivity	554 uS/cm	RWS
07:45 AM	Velocity *	1.72 fps	RWS
09:50 AM	Velocity *	1.2 fps	RWS
11:50 AM	Velocity *	1.25 fps	RWS

\*Result is an average of three trials using stop watch and oranges.



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7397 CHESTNUT STREET • P.O. BOX 63  
FAIRVIEW, PA 18415

**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #04D, WALNUT CREEK  
**Sample Date/Time:** October 3, 1995  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
07:45 AM- St 1	Distance	19.31 ft	RWS
- St 2	from bridge	19.38 ft	RWS
- St 3	to	19.49 ft	RWS
- St 4	water surface	19.56 ft	RWS
09:50 AM- St 1	Distance	19.29 ft	RWS
- St 2	from bridge	19.35 ft	RWS
- St 3	to	19.48 ft	RWS
- St 4	water surface	19.53 ft	RWS
11:50 AM- St 1	Distance	19.29 ft	RWS
- St 2	from bridge	19.37 ft	RWS
- St 3	to	19.49 ft	RWS
- St 4	water surface	19.52 ft	RWS

Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P. O. BOX 83  
FAIRVIEW, PA. 15415

**Field Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sple ID: Event #04D, ELK CREEK

Sample Date/Time: October 3, 1995

Sampler: R.W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
08:15 AM	pH	8.2	RWS
10:20 AM	pH	8.2	RWS
12:20 PM	pH	8.3	RWS
08:15 AM	Dissolved Oxygen	9.8 mg/l	RWS
10:20 AM	Dissolved Oxygen	10.2 mg/l	RWS
12:20 PM	Dissolved Oxygen	10.4 mg/l	RWS
08:15 AM	Temperature	14.2 °C	RWS
10:20 AM	Temperature	15 °C	RWS
12:20 PM	Temperature	15.3 °C	RWS
08:15 AM	Conductivity	606 uS/cm	RWS
10:20 AM	Conductivity	600 uS/cm	RWS
12:20 PM	Conductivity	587 uS/cm	RWS
08:15 AM	Velocity *	0.75 fps	RWS
10:20 AM	Velocity *	0.72 fps	RWS
12:20 PM	Velocity *	0.72 fps	RWS
*Result is an average of three trials using stop watch and oranges.			
08:15 AM	Depth	1.93 ft	RWS
10:20 AM	Depth	1.94 ft	RWS
12:20 PM	Depth	1.92 ft	RWS

Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #05W, TWELVE MILE CREEK **Lab Log No:** 51489

**Sample Date/Time:** October 5, 1995/ 16:40PM, 18:30PM, 20:30PM, 22:30PM

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJ
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJ
Chromium, Total	218.1	<0.05 mg/l	10-12-95	RJ
Copper	220.2	0.002 mg/l	10-09-95	RJ
Lead	239.2	0.001 mg/l	10-09-95	RJ
Nickel	249.1	<0.01 mg/l	10-06-95	RJ
Silver	272.2	<0.0002 mg/l	10-11-95	RJ
Zinc	289.1	<0.005 mg/l	10-06-95	RJ
Aluminum	202.1	0.59 mg/l	10-11-95	RJ
Alkalinity	310.1	53 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	0.02 mg/l	10-12-95	LT
Fecal Coliform				
Grab@18:30PM	SM-16, 909C	940 col/100 ml	10-07-95	LT
Hardness	130.1	164 mg/l	10-06-95	KW
Iron	236.1	3.14 mg/l	10-12-95	RJ
Manganese	243.1	0.49 mg/l	10-12-95	RJ
Nitrite Nitrogen	353.2	<0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	1.37 mg/l	10-10-95	LT
Chloride	325.2	37 mg/l	10-06-95	LT
CBOD,	405.1	11 mg/l	10-11-95	KW
Total Suspended Solids	160.2	198 mg/l	10-12-95	KW
Phosphorus	365.4	0.34 mg/l	10-09-95	LT
COD	410.4	30 mg/l	10-11-95	NDA

Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

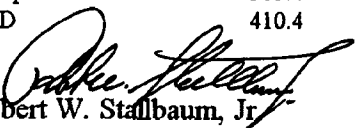
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #05W, WALNUT CREEK Lab Log No: 51490

Sample Date/Time: October 5, 1995/ 17:05PM, 19:15PM, 21:20PM, 23:10PM

Sampler: R.W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.002 mg/l	10-11-95	RJI
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJI
Chromium, Total	218.1	<0.05 mg/l	10-12-95	RJI
Copper	220.2	0.008 mg/l	10-09-95	RJI
Lead	239.2	0.014 mg/l	10-09-95	RJI
Nickel	249.1	<0.01 mg/l	10-06-95	RJI
Silver	272.2	<0.0002 mg/l	10-11-95	RJI
Zinc	289.1	<0.005 mg/l	10-06-95	RJI
Aluminum	202.1	<0.1 mg/l	10-11-95	RJI
Alkalinity	310.1	122 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	0.02 mg/l	10-12-95	LT
Fecal Coliform				
Grab@19:15PM	SM-16, 909C	2940 col/100 ml	10-07-95	LT
Hardness	130.1	144 mg/l	10-06-95	KW
Iron	236.1	14.40 mg/l	10-12-95	RJI
Manganese	243.1	0.80 mg/l	10-12-95	RJI
Nitrite Nitrogen	353.2	0.05 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	0.56 mg/l	10-10-95	LT
Chloride	325.2	37 mg/l	10-06-95	LT
CBOD <sub>5</sub>	405.1	10 mg/l	10-11-95	KW
Total Suspended Solids	160.2	892 mg/l	10-12-95	KW
Phosphorus	365.4	1.08 mg/l	10-09-95	LT
COD	410.4	50 mg/l	10-11-95	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: October 16, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #05W, ELK CREEK **Lab Log No:** 51491

**Sample Date/Time:** October 5, 1995/ 16:40PM, 18:40PM, 20:45PM, 22:40PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJI
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJI
Chromium, Total	218.1	<0.05 mg/l	10-05-95	RJI
Copper	220.2	0.001 mg/l	10-09-95	RJI
Lead	239.2	0.003 mg/l	10-09-95	RJI
Nickel	249.1	<0.01 mg/l	10-06-95	RJI
Silver	272.2	<0.0002 mg/l	10-11-95	RJI
Zinc	289.1	<0.005 mg/l	10-06-95	RJI
Aluminum	202.1	0.56 mg/l	10-11-95	RJI
Alkalinity	310.1	75 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	0.08 mg/l	10-12-95	LT
Fecal Coliform				
Grab@18:40PM	SM-16, 909C	1410 col/100 ml	10-07-95	LT
Hardness	130.1	200 mg/l	10-06-95	KW
Iron	236.1	2.23 mg/l	10-12-95	RJI
Manganese	243.1	0.26 mg/l	10-12-95	RJI
Nitrite Nitrogen	353.2	0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	0.88 mg/l	10-10-95	LT
Chloride	325.2	33 mg/l	10-06-95	LT
CBOD <sub>5</sub>	405.1	5 mg/l	10-11-95	KW
Total Suspended Solids	160.2	142 mg/l	10-12-95	KW
Phosphorus	365.4	0.17 mg/l	10-09-95	LT
COD	410.4	20 mg/l	10-11-95	NDA

*Robert W. Stallbaum, Jr.*  
Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995



**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

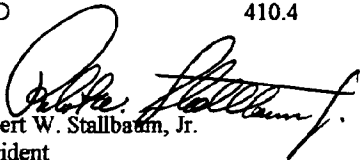
**Sample ID:** Event #05W, TRIP BLANK

**No:** 51488

**Sample Date/Time:** October 5, 1995

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	10-11-95	RJI
Cadmium	213.2	<0.0001 mg/l	10-12-95	RJI
Chromium, Total	218.1	<0.05 mg/l	10-12-95	RJI
Copper	220.2	<0.001 mg/l	10-09-95	RJI
Lead	239.2	<0.001 mg/l	10-12-95	RJI
Nickel	249.1	< 0.01 mg/l	10-06-95	RJI
Silver	272.2	<0.0002 mg/l	10-11-95	RJI
Zinc	289.1	<0.005 mg/l	10-06-95	RJI
Aluminum	202.1	<0.1 mg/l	10-11-95	RJI
Alkalinity	310.1	<0.02 mg/l	10-06-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	10-12-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	10-07-95	LT
Hardness	130.1	<2 mg/l	10-06-95	KW
Iron	236.1	<0.03 mg/l	10-12-95	RJI
Manganese	243.1	<0.01 mg/l	10-12-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	10-10-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	10-10-95	LT
Chloride	325.2	<2 mg,l	10-06-95	LT
CBOD,	405.1	<2 mg/l	10-11-95	KW
Total Suspended Solids	160.2	<2 mg/l	10-12-95	KW
Phosphorus	365.4	<0.01 mg/l	10-09-95	LT
COD	410.4	<10 mg/l	10-11-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995





**CHURCH** laboratory, inc.

(814) 474-2044

7307 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #05W, TWELVE MILE CREEK

**Sample Date/Time:** October 5, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
16:40 PM	pH	8.3	NAC
18:30 PM	pH	8.8	NAC
20:30 PM	pH	9.0	NAC
22:30 PM	Ph	8.8	NAC
16:40 PM	Dissolved Oxygen	7.52 mg/l	NAC
18:30 PM	Dissolved Oxygen	6.49 mg/l	NAC
20:30 PM	Dissolved Oxygen	7.2 mg/l	NAC
22:30 PM	Dissolved Oxygen	8.3 mg/l	NAC
16:40 PM	Temperature	15.1 °C	NAC
18:30 PM	Temperature	15.2 °C	NAC
20:30 PM	Temperature	15.1 °C	NAC
22:30 PM	Temperature	15.2 °C	NAC
16:40 PM	Conductivity	455 uS/cm	NAC
18:30 PM	Conductivity	439 uS/cm	NAC
20:30 PM	Conductivity	383 uS/cm	NAC
22:30 PM	Conductivity	410 uS/cm	NAC
16:40 PM	Velocity *	0.82 fps	NAC
18:30 PM	Velocity *	1.46 fps	NAC
20:30 PM	Velocity *	3.95 fps	NAC
22:30 PM	Velocity *	6.64 fps	NAC



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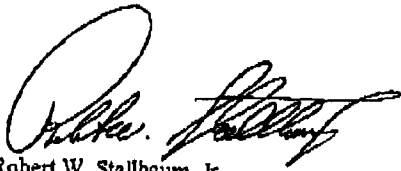
Field Analyses Report  
Malcolm Pirnie, Inc.

Page 2 of 2

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Event #05W, TWELVE MILE CREEK  
Sample Date/Time: October 5, 1995  
Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
16:40 PM	Depth	1.0 ft	NAC
18:30 PM	Depth	1.0 ft	NAC
20:30 PM	Depth	1.5 ft	NAC
22:30 PM	Depth	1.5 ft	NAC

\*Result is an average of three trials using stop watch and oranges.

  
Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995  
Revised: Sept 18, 1996



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**Field Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #05W, WALNUT CREEK

Sample Date/Time: October 5, 1995

Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
17:05 PM	pH	8.0	RWS
19:15 PM	pH	7.4	RWS
21:20 PM	pH	7.1	RWS
23:10 PM	pH	6.9	RWS
17:05 PM	Dissolved Oxygen	9.8 mg/l	RWS
19:15 PM	Dissolved Oxygen	9.7 mg/l	RWS
21:20 PM	Dissolved Oxygen	10.0 mg/l	RWS
23:10 PM	Dissolved Oxygen	9.3 mg/l	RWS
17:05 PM	Temperature	15.1 °C	RWS
19:15 PM	Temperature	15.2 °C	RWS
21:20 PM	Temperature	15.1 °C	RWS
23:10 PM	Temperature	15.4 °C	RWS
17:05 PM	Conductivity	432 uS/cm	RWS
19:15 PM	Conductivity	401 uS/cm	RWS
21:20 PM	Conductivity	428 uS/cm	RWS
23:10 PM	Conductivity	309 uS/cm	RWS
17:05 PM	Velocity *	2.62 fps	RWS
19:15 PM	Velocity *	3.13 fps	RWS
21:20 PM	Velocity *	4.53 fps	RWS
23:10 PM	Velocity *	7.5 fps	RWS



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**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #05W, WALNUT CREEK  
**Sample Date/Time:** October 5, 1995  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
17:05 PM- St 1	Distance	19.11 ft	RWS
- St 2	from bridge	19.23 ft	RWS
- St 3	to	19.42 ft	RWS
- St 4	water surface	19.37 ft	RWS
19:15 PM- St 1	Distance	18.84 ft	RWS
- St 2	from bridge	19.18 ft	RWS
- St 3	to	19.29 ft	RWS
- St 4	water surface	19.3 ft	RWS
- St 5		19.24 ft	RWS
- St 8		19.62 ft	RWS
21:20 PM- St 1	Distance	18.94 ft	RWS
- St 2	from bridge	18.55 ft	RWS
- St 3	to	18.79 ft	RWS
- St 4	water surface	18.18 ft	RWS
- St 5		18.58 ft	RWS
- St 8		18.17 ft	RWS
23:10 PM- St 1	Distance	17.44 ft	RWS
- St 2	from bridge	17.71 ft	RWS
- St 3	to	18.65 ft	RWS
- St 4	water surface	17.49 ft	RWS
- St 5		17.93 ft	RWS
- St 7		18.23 ft	RWS
- St 8		18.28 ft	RWS

Robert W. Stallbaum, Jr.

President

Reported: October 16, 1995

Resived: Sept 18, 1996



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**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #05W, ELK CREEK

**Sample Date/Time:** October 5, 1995

**Sampler:** R.W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
16:40 PM	pH	7.9	RWS
18:40 PM	pH	8.0	RWS
20:45 PM	pH	7.6	RWS
22:40 PM	pH	7.8	RWS
16:40 PM	Dissolved Oxygen	9.8 mg/l	RWS
18:40 PM	Dissolved Oxygen	10.4 mg/l	RWS
20:45 PM	Dissolved Oxygen	9.9 mg/l	RWS
22:40 PM	Dissolved Oxygen	9.8 mg/l	RWS
16:40 PM	Temperature	15.5 °C	RWS
18:40 PM	Temperature	15.3 °C	RWS
20:45 PM	Temperature	15.4 °C	RWS
22:40 PM	Temperature	15.5 °C	RWS
16:40 PM	Conductivity	540 uS/cm	RWS
18:40 PM	Conductivity	520 uS/cm	RWS
20:45 PM	Conductivity	482 uS/cm	RWS
22:40 PM	Conductivity	403 uS/cm	RWS
16:40 PM	Velocity *	1.36 fps	RWS
18:40 PM	Velocity *	2.17 fps	RWS
20:45 PM	Velocity *	3.52 fps	RWS
22:40 PM	Velocity *	4.17 fps	RWS



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**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Event #05W, ELK CREEK  
Sample Date/Time: October 5, 1995  
Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
16:40 PM	Depth	2.14 ft	RWS
18:40 PM	Depth	2.44 ft	RWS
20:45 PM	Depth	2.73 ft	RWS
22:40 PM	Depth	2.83 ft	RWS

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President

Reported: October 16, 1995  
Revised: Sept 18, 1996



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**Water Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

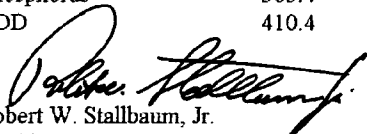
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #06W, TWELVE MILE CREEK Lab Log No: 51884

Sample Date/Time: November 7, 1995/ 10:00AM, 12:00N, 14:00PM

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.002 mg/l	11-08-95	RJI
Cadmium	213.2	<0.0001 mg/l	11-09-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-09-95	RJI
Copper	220.2	0.004 mg/l	11-09-95	RJI
Lead	239.2	0.004 mg/l	11-08-95	RJI
Nickel	249.1	<0.01 mg/l	10-09-95	RJI
Silver	272.2	<0.0002 mg/l	11-09-95	RJI
Zinc	289.1	0.008 mg/l	11-09-95	RJI
Aluminum	202.1	0.76 mg/l	11-08-95	RJI
Alkalinity	310.1	30 mg/l	11-08-95	KW
Ammonia Nitrogen	350.1	0.01 mg/l	11-09-95	LT
Fecal Coliform				
Grab@12:00N	SM-16. 909C	1200 col/100 ml	11-08-95	LT
Hardness	130.1	106 mg/l	11-08-95	KW
Iron	236.1	1.63 mg/l	11-09-95	RJI
Manganese	243.1	0.20 mg/l	11-09-95	RJI
Nitrite Nitrogen	353.2	0.01 mg/l	11-08-95	LT
Nitrate Nitrogen	353.2	0.97 mg/l	11-08-95	LT
Chloride	325.2	38 mg/l	11-08-95	LT
CBOD <sub>5</sub>	405.1	2 mg/l	11-13-95	KW
Total Suspended Solids	160.2	134 mg/l	11-10-95	KW
Phosphorus	365.4	0.28 mg/l	11-14-95	LT
COD	410.4	35 mg/l	11-10-95	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: November 15, 1995



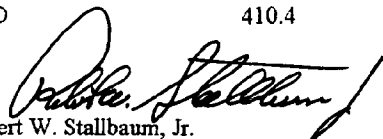
**Water Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #06W, WALNUT CREEK Lab Log No: 51885  
Sample Date/Time: November 7, 1995/ 10:00AM, 12:00 N, 14:00PM  
Sampler: R.W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.002 mg/l	11-08-95	RJI
Cadmium	213.2	<0.0001 mg/l	11-09-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-09-95	RJI
Copper	220.2	0.004 mg/l	11-09-95	RJI
Lead	239.2	0.005 mg/l	11-08-95	RJI
Nickel	249.1	<0.01 mg/l	11-09-95	RJI
Silver	272.2	<0.0002 mg/l	11-09-95	RJI
Zinc	289.1	0.022 mg/l	11-09-95	RJI
Aluminum	202.1	1.51 mg/l	11-08-95	RJI
Alkalinity	310.1	75 mg/l	11-08-95	KW
Ammonia Nitrogen	350.1	0.05 mg/l	11-09-95	LT
Fecal Coliform				
Grab@12:00N	SM-16, 909C	330 col/100 ml	11-08-95	LT
Hardness	130.1	176 mg/l	11-08-95	KW
Iron	236.1	2.54 mg/l	11-09-95	RJI
Manganese	243.1	0.21 mg/l	11-09-95	RJI
Nitrite Nitrogen	353.2	0.04 mg/l	11-08-95	LT
Nitrate Nitrogen	353.2	0.95 mg/l	11-08-95	LT
Chloride	325.2	62 mg/l	11-08-95	LT
CBOD <sub>5</sub>	405.1	3 mg/l	11-13-95	KW
Total Suspended Solids	160.2	212 mg/l	11-10-95	KW
Phosphorus	365.4	0.31 mg/l	11-14-95	LT
COD	410.4	20 mg/l	11-10-95	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: November 15, 1995





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### Water Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

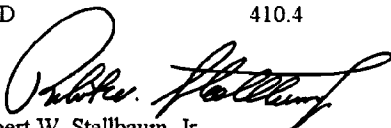
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #06W, ELK CREEK Lab Log No: 51886

Sample Date/Time: November 7, 1995/ 10:30AM, 12:30PM, 14:30PM

Sampler: R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.002 mg/l	11-08-95	RJI
Cadmium	213.2	<0.0001 mg/l	11-09-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-09-95	RJI
Copper	220.2	<0.001 mg/l	11-09-95	RJI
Lead	239.2	<0.001 mg/l	11-08-95	RJI
Nickel	249.1	<0.01 mg/l	11-09-95	RJI
Silver	272.2	<0.0002 mg/l	11-09-95	RJI
Zinc	289.1	<0.005 mg/l	11-09-95	RJI
Aluminum	202.1	0.21 mg/l	11-08-95	RJI
Alkalinity	310.1	55 mg/l	11-08-95	KW
Ammonia Nitrogen	350.1	0.02 mg/l	11-09-95	LT
Fecal Coliform				
Grab@12:30PM	SM-16, 909C	300 col/100 ml	11-08-95	LT
Hardness	130.1	156 mg/l	11-08-95	KW
Iron	236.1	0.23 mg/l	11-09-95	RJI
Manganese	243.1	0.05 mg/l	11-09-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	11-08-95	LT
Nitrate Nitrogen	353.2	1.22 mg/l	11-08-95	LT
Chloride	325.2	41 mg/l	11-08-95	LT
CBOD <sub>5</sub>	405.1	2 mg/l	11-13-95	KW
Total Suspended Solids	160.2	24 mg/l	11-10-95	KW
Phosphorus	365.4	0.10 mg/l	11-14-95	LT
COD	410.4	15 mg/l	11-10-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: November 15, 1995



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FAIRVIEW, PA. 16415

**Water Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

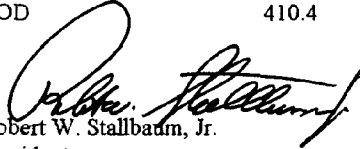
Sample ID: Event #06W, TRIP BLANK

No: 51883

Sample Date/Time: November 7, 1995

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	11-08-95	RJI
Cadmium	213.2	<0.0001 mg/l	11-09-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-09-95	RJI
Copper	220.2	<0.001 mg/l	11-09-95	RJI
Lead	239.2	<0.001 mg/l	11-08-95	RJI
Nickel	249.1	<0.01 mg/l	11-09-95	RJI
Silver	272.2	<0.0002 mg/l	11-09-95	RJI
Zinc	289.1	<0.005 mg/l	11-09-95	RJI
Aluminum	202.1	<0.1 mg/l	11-08-95	RJI
Alkalinity	310.1	<0.02 mg/l	11-08-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	11-09-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	11-08-95	LT
Hardness	130.1	<2 mg/l	11-08-95	KW
Iron	236.1	<0.03 mg/l	11-09-95	RJI
Manganese	243.1	<0.01 mg/l	11-09-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	11-08-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	11-08-95	LT
Chloride	325.2	<2 mg/l	11-08-95	LT
CBOD <sub>5</sub>	405.1	<2 mg/l	11-13-95	KW
Total Suspended Solids	160.2	<2 mg/l	11-10-95	KW
Phosphorus	365.4	<0.01 mg/l	11-14-95	LT
COD	410.4	<10 mg/l	11-10-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: November 15, 1995



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FAIRVIEW, PA. 18415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #06W, TWELVE MILE CREEK

**Sample Date/Time:** November 7, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:00 AM	pH	8.9	NAC
12:00 N	pH	8.9	NAC
14:00 PM	pH	8.9	NAC
10:00 AM	Dissolved Oxygen	10.36 mg/l	NAC
12:00 N	Dissolved Oxygen	10.83 mg/l	NAC
14:00 PM	Dissolved Oxygen	10.75 mg/l	NAC
10:40 AM	Temperature	8.4 °C	NAC
12:00 N	Temperature	6.6 °C	NAC
14:00 PM	Temperature	6.3 °C	NAC
16:40 AM	Conductivity	305 uS/cm	NAC
12:00 N	Conductivity	296 uS/cm	NAC
14:00 PM	Conductivity	272 uS/cm	NAC
10:40 AM	Velocity *	3.42 fps	NAC
12:00 N	Velocity *	6.96 fps	NAC
14:00 PM	Velocity *	5.83 fps	NAC
10:00 AM	Depth	1.25 ft	NAC
12:00 N	Depth	2.0 ft	NAC
14:00 PM	Depth	1.75 ft	NAC

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbawn, Jr.  
President  
Reported: November 15, 1995  
Revised: Sept 18, 1996



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #06W, WALNUT CREEK

Sample Date/Time: November 7, 1995

Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:00 AM	pH	7.75	RWS
12:00 N	pH	7.87	RWS
14:00 PM	pH	7.58	RWS
10:00 AM	Dissolved Oxygen	11.6 mg/l	RWS
12:00 N	Dissolved Oxygen	11.6 mg/l	RWS
14:00 PM	Dissolved Oxygen	11.1 mg/l	RWS
10:00 AM	Temperature	4.7 °C	RWS
12:00 N	Temperature	4.9 °C	RWS
14:00 PM	Temperature	5.4 °C	RWS
10:00 AM	Conductivity	512 uS/cm	RWS
12:00 N	Conductivity	547 uS/cm	RWS
14:00 PM	Conductivity	490 uS/cm	RWS
10:00 AM	Velocity *	3.13 fps	RWS
12:00 N	Velocity *	3.68 fps	RWS
14:00 PM	Velocity *	4.62 fps	RWS



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA 16415

**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #06W, WALNUT CREEK  
**Sample Date/Time:** November 7, 1995  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:00 AM- St 1 - St 2 - St 3 - St 4 - St 8	Distance	18.87 ft	RWS
	from bridge	19.05 ft	RWS
	to	19.29 ft	RWS
	water surface	19.09 ft	RWS
		19.51 ft	RWS
12:00 N - St 1 - St 2 - St 3 - St 4 - St 8	Distance	18.71 ft	RWS
	from bridge	18.85 ft	RWS
	to	19.07 ft	RWS
	water surface	19.08 ft	RWS
		19.51 ft	RWS
14:00 PM- St 1 - St 2 - St 3 - St 4 - St 5 - St 8	Distance	18.36 ft	RWS
	from bridge	18.14 ft	RWS
	to	18.32 ft	RWS
	water surface	18.44 ft	RWS
		18.32 ft	RWS
		18.84 ft	RWS

Robert W. Stallbaum, Jr.  
President

Reported: November 15, 1995  
Revised: Sept 18, 1996



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FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #06W, ELK CREEK

**Sample Date/Time:** November 7, 1995

**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
10:30 AM	pH	7.5	RWS
12:30 PM	pH	7.5	RWS
14:30 PM	pH	7.4	RWS
10:30 AM	Dissolved Oxygen	11.3 mg/l	RWS
12:30 PM	Dissolved Oxygen	11.3 mg/l	RWS
14:30 PM	Dissolved Oxygen	11.2 mg/l	RWS
10:30 AM	Temperature	4.6 °C	RWS
12:30 PM	Temperature	4.9 °C	RWS
14:30 PM	Temperature	5.2 °C	RWS
10:30 AM	Conductivity	409 uS/cm	RWS
12:30 PM	Conductivity	412 uS/cm	RWS
14:30 PM	Conductivity	419 uS/cm	RWS
10:30 AM	Velocity *	3.42 fps	RWS
12:30 PM	Velocity *	3.79 fps	RWS
14:30 PM	Velocity *	4.17 fps	RWS
10:30 AM	Depth	2.58 ft	RWS
12:30 PM	Depth	2.75 ft	RWS
14:30 PM	Depth	2.83 ft	RWS

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President  
Reported: November 15, 1995  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #07W, TWELVE MILE CREEK Lab Log No: 51951

**Sample Date/Time:** November 11, 1995/ 7:00AM, 9:00AM, 11:00AM

**Sampler:** N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.004 mg/l	11-13-95	RJI
Cadmium	213.2	0.0004 mg/l	11-14-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-14-95	RJI
Copper	220.2	0.015 mg/l	11-13-95	RJI
Lead	239.2	0.015 mg/l	11-14-95	RJI
Nickel	249.1	0.01 mg/l	11-14-95	RJI
Silver	272.2	<0.0002 mg/l	11-14-95	RJI
Zinc	289.1	0.050 mg/l	11-14-95	RJI
Aluminum	202.1	8.59 mg/l	11-13-95	RJI
Alkalinity	310.1	14 mg/l	11-20-95	KW
Ammonia Nitrogen	350.1	0.08 mg/l	11-16-95	LT
Fecal Coliform				
Grab@9:00AM	SM-16, 909C	10,400 col/100 ml	11-12-95	RWS/LT
Hardness	130.1	72 mg/l	11-12-95	KW
Iron	236.1	6.92 mg/l	11-14-95	RJI
Manganese	243.1	0.65 mg/l	11-16-95	RJI
Nitrite Nitrogen	353.2	0.07 mg/l	11-15-95	LT
Nitrate Nitrogen	353.2	1.16 mg/l	11-15-95	LT
Chloride	325.2	21 mg/l	11-20-95	LT
CBOD <sub>5</sub>	405.1	2 mg/l	11-16-95	KW
Total Suspended Solids	160.2	828 mg/l	11-15-95	KW
Phosphorus	365.4	0.84 mg/l	11-14-95	LT
COD	410.4	60 mg/l	11-14-95	NDA

Robert W. Stallbaum, Jr.  
President

Reported: November 22, 1995



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #07W, WALNUT CREEK Lab Log No: 51953

Sample Date/Time: November 11, 1995/ 7:20AM, 10:35 AM, 13:20PM

Sampler: R.W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.006 mg/l	11-13-95	RJI
Cadmium	213.2	0.0004 mg/l	11-14-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-14-95	RJI
Copper	220.2	0.016 mg/l	11-13-95	RJI
Lead	239.2	0.025 mg/l	11-14-95	RJI
Nickel	249.1	0.02 mg/l	11-14-95	RJI
Silver	272.2	<0.0002 mg/l	11-14-95	RJI
Zinc	289.1	0.089 mg/l	11-14-95	RJI
Aluminum	202.1	13.10 mg/l	11-13-95	RJI
Alkalinity	310.1	40 mg/l	11-20-95	KW
Ammonia Nitrogen	350.1	0.06 mg/l	11-16-95	LT
Fecal Coliform				
Grab@10:35AM	SM-16, 909C	5200 col/100 ml	11-12-95	RWS/LT
Hardness	130.1	104 mg/l	11-12-95	KW
Iron	236.1	10.22 mg/l	11-14-95	RJI
Manganese	243.1	0.79 mg/l	11-16-95	RJI
Nitrite Nitrogen	353.2	0.09 mg/l	11-15-95	LT
Nitrate Nitrogen	353.2	1.17 mg/l	11-15-95	LT
Chloride	325.2	37 mg/l	11-20-95	LT
CBOD <sub>5</sub>	405.1	3 mg/l	11-16-95	KW
Total Suspended Solids	160.2	892 mg/l	11-15-95	KW
Phosphorus	365.4	0.95 mg/l	11-14-95	LT
COD	410.4	60 mg/l	11-14-95	NDA

Robert W. Stallbaum, Jr.  
President

Reported: November 22, 1995





**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

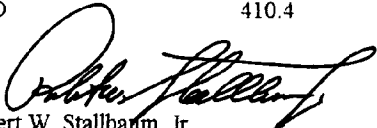
**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #07W, ELK CREEK **Lab Log No:** 51952

**Sample Date/Time:** November 11, 1995/ 7:45AM, 10:00AM, 13:00PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.004 mg/l	11-13-95	RJI
Cadmium	213.2	0.0001 mg/l	11-14-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-14-95	RJI
Copper	220.2	0.010 mg/l	11-13-95	RJI
Lead	239.2	0.013 mg/l	11-14-95	RJI
Nickel	249.1	0.02 mg/l	11-14-95	RJI
Silver	272.2	<0.0002 mg/l	11-14-95	RJI
Zinc	289.1	0.045 mg/l	11-14-95	RJI
Aluminum	202.1	8.20 mg/l	11-13-95	RJI
Alkalinity	310.1	31 mg/l	11-20-95	KW
Ammonia Nitrogen	350.1	0.06 mg/l	11-16-95	LT
Fecal Coliform				
Grab@10:00AM	SM-16, 909C	4700 col/100 ml	11-12-95	RWS/LT
Hardness	130.1	102 mg/l	11-12-95	KW
Iron	236.1	7.49 mg/l	11-14-95	RJI
Manganese	243.1	0.50 mg/l	11-16-95	RJI
Nitrite Nitrogen	353.2	0.07 mg/l	11-15-95	LT
Nitrate Nitrogen	353.2	1.36 mg/l	11-15-95	LT
Chloride	325.2	24 mg/l	11-20-95	LT
CBOD <sub>5</sub>	405.1	2 mg/l	11-16-95	KW
Total Suspended Solids	160.2	768 mg/l	11-15-95	KW
Phosphorus	365.4	0.79 mg/l	11-14-95	LT
COD	410.4	50 mg/l	11-14-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: November 22, 1995



**CHURCH** laboratory, inc.

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FAIRVIEW, PA. 16415

### Water Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

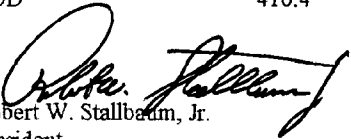
Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

Sample ID: Event #07W, TRIP BLANK No: 51950

Sample Date/Time: November 11, 1995

Sampler: N.A. Conaway

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	11-13-95	RJI
Cadmium	213.2	<0.0001 mg/l	11-14-95	RJI
Chromium, Total	218.1	<0.05 mg/l	11-14-95	RJI
Copper	220.2	<0.001 mg/l	11-13-95	RJI
Lead	239.2	<0.001 mg/l	11-14-95	RJI
Nickel	249.1	< 0.01 mg/l	11-14-95	RJI
Silver	272.2	<0.0002 mg/l	11-14-95	RJI
Zinc	289.1	<0.005 mg/l	11-14-95	RJI
Aluminum	202.1	<0.1 mg/l	11-13-95	RJI
Alkalinity	310.1	<1 mg/l	11-20-95	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	11-16-95	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	11-12-95	RWS/LT
Hardness	130.1	<2 mg/l	11-12-95	KW
Iron	236.1	<0.03 mg/l	11-14-95	RJI
Manganese	243.1	<0.01 mg/l	11-16-95	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	11-15-95	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	11-15-95	LT
Chloride	325.2	<2 mg/l	11-20-95	LT
CBOD <sub>5</sub>	405.1	<2 mg/l	11-16-95	KW
Total Suspended Solids	160.2	<2 mg/l	11-15-95	NCW
Phosphorus	365.4	<0.01 mg/l	11-14-95	LT
COD	410.4	<10 mg/l	11-14-95	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: November 22, 1995



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FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #07W, TWELVE MILE CREEK

**Sample Date/Time:** November 11, 1995

**Sampler:** N.A. Conaway

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
7:00 AM	pH	9.5	NAC
9:00 AM	pH	8.9	NAC
11:00 AM	pH	8.8	NAC
7:00 AM	Dissolved Oxygen	12.32 mg/l	NAC
9:00 AM	Dissolved Oxygen	12.75 mg/l	NAC
11:00 AM	Dissolved Oxygen	12.29 mg/l	NAC
7:00 AM	Temperature	7.2 °C	NAC
9:00 AM	Temperature	7.4 °C	NAC
11:00 AM	Temperature	8 °C	NAC
7:00 AM	Conductivity	189 uS/cm	NAC
9:00 AM	Conductivity	186 uS/cm	NAC
11:00 AM	Conductivity	170 uS/cm	NAC
7:00 AM	Velocity *	11.7 fps	NAC
9:00 AM	Velocity *	10.6 fps	NAC
11:00 AM	Velocity *	8.3 fps	NAC
7:00 AM	Depth	3.25 ft	NAC
9:00 AM	Depth	3.5 ft	NAC
11:00 AM	Depth	2.75 ft	NAC

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.  
President

Reported: November 22, 1995

Revised: Sept 18, 1996


**CHURCH** laboratory, inc.

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7387 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Field Analyses Report

**Customer:** Malcolm Pirnie, Inc.  
 S. 3515 Abbott Road  
 Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
 for Lake Erie Watershed #2758-01

**Sample ID:** Event #07W, WALNUT CREEK

**Sample Date/Time:** November 11, 1995

**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
7:20 AM	pH	7.36	RWS
10:35 AM	pH	7.09	RWS
13:20 PM	pH	7.12	RWS
7:20 AM	Dissolved Oxygen	11.2 mg/l	RWS
10:35 AM	Dissolved Oxygen	10.9 mg/l	RWS
13:20 PM	Dissolved Oxygen	11.0 mg/l	RWS
7:20 AM	Temperature	7.1 °C	RWS
10:35 AM	Temperature	7.5 °C	RWS
13:20 PM	Temperature	7.8 °C	RWS
7:20 AM	Conductivity	345 uS/cm	RWS
10:35 AM	Conductivity	303 uS/cm	RWS
13:20 PM	Conductivity	282 uS/cm	RWS
7:20 AM	Velocity *	7.1 fps	RWS
10:35 AM	Velocity *	7.5 fps	RWS
13:20 PM	Velocity *	6.6 fps	RWS



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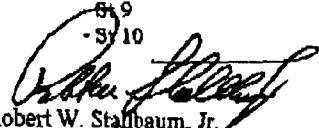
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FAIRVIEW, PA. 16415

**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
Sample ID: Event #07W, WALNUT CREEK  
Sample Date/Time: November 11, 1995  
Sampler: R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
7:20 AM- St 1	Distance	17.38 ft	RWS
- St 2	from bridge	17.61 ft	RWS
- St 3	to	17.68 ft	RWS
- St 4	water surface	17.74 ft	RWS
- St 5		18.02 ft	RWS
- St 7		18.11 ft	RWS
- St 8		18.31 ft	RWS
- St 9		18.29 ft	RWS
- St 10		18.28 ft	RWS
10:35 AM- St 1	Distance	17.07 ft	RWS
- St 2	from bridge	17.14 ft	RWS
- St 3	to	17.31 ft	RWS
- St 4	water surface	17.42 ft	RWS
- St 5		17.81 ft	RWS
- St 7		17.76 ft	RWS
- St 8		17.92 ft	RWS
- St 9		18.05 ft	RWS
- St 10		18.43 ft	RWS
13:20 PM- St 1	Distance	16.08 ft	RWS
- St 2	from bridge	16.33 ft	RWS
- St 3	to	17.22 ft	RWS
- St 4	water surface	17.3 ft	RWS
- St 5		17.73 ft	RWS
- St 7		17.68 ft	RWS
- St 8		17.87 ft	RWS
- St 9		17.96 ft	RWS
- St 10		18.07 ft	RWS

  
Robert W. Stallbaum, Jr.  
President  
Reported: November 22, 1995  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

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FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

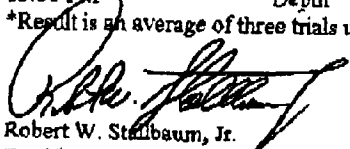
**Sample ID:** Event #07W, ELK CREEK

**Sample Date/Time:** November 11, 1995

**Sampler:** R.W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
7:45 AM	pH	7.3	RWS
10:00 AM	pH	7.2	RWS
13:00 PM	pH	6.9	RWS
7:45 AM	Dissolved Oxygen	11.1 mg/l	RWS
10:00 AM	Dissolved Oxygen	10.9 mg/l	RWS
13:00 PM	Dissolved Oxygen	10.6 mg/l	RWS
7:45 AM	Temperature	6.8 °C	RWS
10:00 AM	Temperature	7.2 °C	RWS
13:00 PM	Temperature	7.8 °C	RWS
7:45 AM	Conductivity	280 uS/cm	RWS
10:00 PM	Conductivity	256 uS/cm	RWS
13:00 PM	Conductivity	221 uS/cm	RWS
7:45 AM	Velocity *	7.9 fps	RWS
10:00 AM	Velocity *	9.4 fps	RWS
13:00 PM	Velocity *	8.2 fps	RWS
7:45 AM	Depth	5.0 ft	RWS
10:00 AM	Depth	5.67 ft	RWS
13:00 PM	Depth	6.25 ft	RWS

\*Result is an average of three trials using stop watch and oranges.

  
Robert W. Stallbaum, Jr.  
President

Reported: November 22, 1995  
Revised: Sept 18, 1996



**Water Analyses Report**

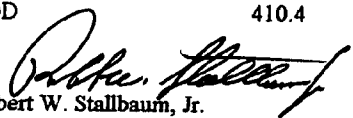
**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #08W, TWELVE MILE CREEK  
**Sample Date/Time:** April 12, 1996/ 19:40PM, 21:40 PM, 23:35PM  
**Sampler:** N. C. Whiteman

**Lab Log No:** 53864

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.001 mg/l	04-15-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01-96	RJI
Chromium, Total	218.1	<0.05 mg/l	04-16-96	RJI
Copper	220.2	0.004 mg/l	05-07-96	RJI
Lead	239.2	0.008 mg/l	04-15-96	RJI
Nickel	249.1	0.01 mg/l	04-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	0.028 mg/l	04-15-96	RJI
Aluminum	202.1	5.28 mg/l	04-16-96	RJI
Alkalinity	310.1	44 mg/l	04-16-96	KW
Ammonia Nitrogen	350.1	0.20 mg/l	04-22-96	LT
Fecal Coliform				
Grab@21:40PM	SM-16, 909C	198 col/100 ml	04-13-96	NCW
Hardness	130.1	116 mg/l	04-15-96	KW
Iron	236.1	6.95 mg/l	04-16-96	RJI
Manganese	243.1	0.15 mg/l	04-16-96	RJI
Nitrite Nitrogen	353.2	0.05 mg/l	04-19-96	LT
Nitrate Nitrogen	353.2	2.05 mg/l	04-19-96	LT
Chloride	325.2	42 mg/l	04-24-96	LT
CBOD,	405.1	3 mg/l	04-18-96	KW
Total Suspended Solids	160.2	180 mg/l	04-22-96	KW
Phosphorus	365.4	0.36 mg/l	04-16-96	LT
COD	410.4	20 mg/l	04-25-96	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: May 7, 1996



**Water Analyses Report**

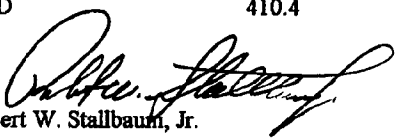
**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #08W, WALNUT CREEK  
**Sample Date/Time:** April 12, 1996/ 20:30PM, 22:30PM, 00:30AM  
**Sampler:** R. W. Stallbaum

**Lab Log No:** 53864

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	04-16-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01 -96	RJI
Chromium, Total	218.1	<0.05 mg/l	04-16-96	RJI
Copper	220.2	0.003 mg/l	05-07-96	RJI
Lead	239.2	0.003 mg/l	04-15-96	RJI
Nickel	249.1	0.01 mg/l	04-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	0.032 mg/l	04-15-96	RJI
Aluminum	202.1	1.67 mg/l	04-16-96	RJI
Alkalinity	310.1	97 mg/l	04-16-96	KW
Ammonia Nitrogen	350.1	0.12 mg/l	04-22-96	LT
Fecal Coliform				
Grab@22:30PM	SM-16, 909C	143 col/100 ml	04-13-96	NCW
Hardness	130.1	158 mg/l	04-15-96	KW
Iron	236.1	2.16 mg/l	04-16-96	RJI
Manganese	243.1	0.07 mg/l	04-16-96	RJI
Nitrite Nitrogen	353.2	0.02 mg/l	04-19-96	LT
Nitrate Nitrogen	353.2	0.71 mg/l	04-19-96	LT
Chloride	325.2	65 mg/l	04-24-96	LT
CBOD,	405.1	3 mg/l	04-18-96	KW
Total Suspended Solids	160.2	68 mg/l	04-22-96	KW
Phosphorus	365.4	0.15 mg/l	04-16-96	LT
COD	410.4	10 mg/l	04-25-96	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: May 7, 1996





**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #08W, ELK CREEK

**Lab Log No:** 53865

**Sample Date/Time:** April 12, 1996/ 19:55PM, 22:00 PM, 24:00M

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	04-15-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01-96	RJI
Chromium, Total	218.1	<0.05 mg/l	04-16-96	RJI
Copper	220.2	<0.001 mg/l	05-07-96	RJI
Lead	239.2	0.002 mg/l	04-15-96	RJI
Nickel	249.1	0.01 mg/l	04-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	<0.005 mg/l	04-15-96	RJI
Aluminum	202.1	1.35 mg/l	04-16-96	RJI
Alkalinity	310.1	70 mg/l	04-16-96	KW
Ammonia Nitrogen	350.1	0.11 mg/l	04-22-96	LT
Fecal Coliform				
Grab@22:00PM	SM-16, 909C	9 col/100 ml	04-13-96	NCW
Hardness	130.1	132 mg/l	04-15-96	KW
Iron	236.1	1.95 mg/l	04-16-96	RJI
Manganese	243.1	0.05 mg/l	04-16-96	RJI
Nitrite Nitrogen	353.2	0.02 mg/l	04-19-96	LT
Nitrate Nitrogen	353.2	1.16 mg/l	04-19-96	LT
Chloride	325.2	30 mg/l	04-24-96	LT
CBOD,	405.1	4 mg/l	04-18-96	KW
Total Suspended Solids	160.2	62 mg/l	04-22-96	KW
Phosphorus	365.4	0.14 mg/l	04-16-96	LT
COD	410.4	<10 mg/l	04-25-96	NDA

Robert W. Stallbaum, Jr.  
President  
Reported: May 7, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

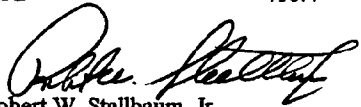
**Sample ID:** Event #08W, TRIP BLANK

**No:** 53867

**Sample Date/Time:** April 12, 1996

**Sampler:** N.C. Whiteman

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	04-15-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-03-96	RJI
Chromium, Total	218.1	<0.05 mg/l	04-16-96	RJI
Copper	220.2	<0.001 mg/l	05-03-96	RJI
Lead	239.2	<0.001 mg/l	04-15-96	RJI
Nickel	249.1	< 0.01 mg/l	04-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-03-96	RJI
Zinc	289.1	<0.005 mg/l	04-15-96	RJI
Aluminum	202.1	<0.1 mg/l	04-16-96	RJI
Alkalinity	310.1	<1 mg/l	04-16-96	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	04-22-96	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	04-13-96	NCW
Hardness	130.1	<2 mg/l	04-15-96	KW
Iron	236.1	<0.03 mg/l	04-16-96	RJI
Manganese	243.1	<0.01 mg/l	04-16-96	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	04-19-96	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	04-19-96	LT
Chloride	325.2	<2 mg/l	04-24-96	LT
CBOD <sub>5</sub>	405.1	2 mg/l	04-18-96	KW
Total Suspended Solids	160.2	<2 mg/l	04-22-96	KW
Phosphorus	365.4	<0.01 mg/l	04-16-96	LT
COD	410.4	<10 mg/l	04-25-96	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: May 7, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7997 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 15415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #08W, TWELVE MILE CREEK

**Sample Date/Time:** April 12, 1996

**Sampler:** N. C. Whiteman

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
19:40 PM	pH	8.2	NCW
21:40 PM	pH	7.6	NCW
23:35 PM	pH	7.6	NCW
19:40 PM	Dissolved Oxygen	12.55 mg/l	NCW
21:40 PM	Dissolved Oxygen	12.71 mg/l	NCW
23:35 PM	Dissolved Oxygen	13. mg/l	NCW
19:40 PM	Temperature	8.5 °C	NCW
21:40 PM	Temperature	7.6 °C	NCW
23:35 PM	Temperature	7 °C	NCW
19:40 PM	Conductivity	354 uS/cm	NCW
21:40 PM	Conductivity	333 us/cm	NCW
23:35 PM	Conductivity	306 uS/cm	NCW
19:40 PM	Velocity *	2.6 fps	NCW
21:40 PM	Velocity *	4 fps	NCW
23:35 PM	Velocity *	7 fps	NCW
19:49 PM	Depth	1.5 ft	NCW
21:40 PM	Depth	1.75 ft	NCW
23:35 PM	Depth	2.1 ft	NCW

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stallbaum, Jr.

President

Reported: April 30, 1996

Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #08W, WALNUT CREEK

**Sample Date/Time:** April 12, 1996

**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
20:30 PM	pH	7.9	RWS
22:30 PM	pH	8.2	RWS
00:30 AM	pH	8.0	RWS
20:30 PM	Dissolved Oxygen	10.68 mg/l	RWS
22:30 PM	Dissolved Oxygen	10.3 mg/l	RWS
00:30 AM	Dissolved Oxygen	10.7 mg/l	RWS
20:30 PM	Temperature	8.0 °C	RWS
22:30 PM	Temperature	8.2 °C	RWS
00:30 AM	Temperature	7.7 °C	RWS
20:30 PM	Conductivity	463 uS/cm	RWS
22:30 PM	Conductivity	526 uS/cm	RWS
00:30 AM	Conductivity	628 uS/cm	RWS
20:30 PM	Velocity *	2.7 fps	RWS
22:30 PM	Velocity *	3.6 fps	RWS
00:30 AM	Velocity *	4.1 fps	RWS



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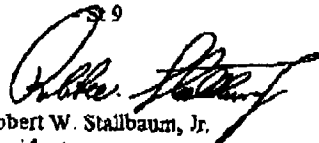
7397 CHESTNUT STREET • P.O. BOX 83  
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**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Eric County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #08W, WALNUT CREEK  
**Sample Date/Time:** April 12, 1996  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
20:30 PM- St 1	Distance	18.86 ft	RWS
- St 2	from bridge	18.97 ft	RWS
- St 3	to	19.14 ft	RWS
- St 4	water surface	19.59 ft	RWS
- St 5		19.43 ft	RWS
- St 9		19.31 ft	RWS
22:30 PM- St 1	Distance	18.92 ft	RWS
- St 2	from bridge	19.24 ft	RWS
- St 3	to	19.25 ft	RWS
- St 4	water surface	19.37 ft	RWS
- St 9		20.07 ft	RWS
- St 10		19.28 ft	RWS
00:30 AM- St 1	Distance	18.62 ft	RWS
- St 2	from bridge	18.97 ft	RWS
- St 3	to	19.23 ft	RWS
- St 4	water surface	18.94 ft	RWS
- St 5		18.61 ft	RWS
- St 9		19.12 ft	RWS

  
Robert W. Stallbaum, Jr.  
President  
Reported: April 30, 1996  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7387 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

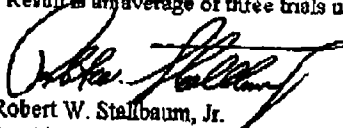
**Sample ID:** Event #08W, ELK CREEK

**Sample Date/Time:** April 12, 1996

**Sampler:** R.W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
19:55 PM	pH	7.8	RWS
22:00 PM	pH	8.0	RWS
24:00 M	pH	7.9	RWS
19:55 PM	Dissolved Oxygen	10.47 mg/l	RWS
22:00 PM	Dissolved Oxygen	10.0 mg/l	RWS
24:00 M	Dissolved Oxygen	10.0 mg/l	RWS
19:55 PM	Temperature	9.7 °C	RWS
22:00 PM	Temperature	9.2 °C	RWS
24:00 M	Temperature	8.6 °C	RWS
19:55 PM	Conductivity	329 uS/cm	RWS
22:00 PM	Conductivity	341 uS/cm	RWS
24:00 M	Conductivity	372 uS/cm	RWS
19:55 PM	Velocity *	2.6 fps	RWS
22:00 PM	Velocity *	2.6 fps	RWS
24:00 M	Velocity *	2.9 fps	RWS
19:55 PM	Depth	2.5 ft	RWS
22:00 PM	Depth	2.61 ft	RWS
24:00 M	Depth	2.65 ft	RWS

\*Result is an average of three trials using stop watch and oranges.

  
Robert W. Stallbaum, Jr.  
President  
Reported: April 30, 1996  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #09W, TWELVE MILE CREEK **Lab Log No:** 54116

**Sample Date/Time:** April 30, 1996/ 11:40AM, 13:40 PM, 15:40PM

**Sampler:** N. C. Whiteman

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.007 mg/l	05-02-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01-96	RJI
Chromium, Total	218.1	<0.05 mg/l	05-02-96	RJI
Copper	220.2	0.002 mg/l	05-07-96	RJI
Lead	239.2	<0.001 mg/l	05-01-96	RJI
Nickel	249.1	0.05 mg/l	05-03-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	0.023 mg/l	05-03-96	RJI
Aluminum	202.1	5.07 mg/l	05-02-96	RJI
Alkalinity	310.1	33 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	0.04 mg/l	05-06-96	LT
Fecal Coliform				
Grab@13:40PM	SM-16, 909C	504 col/100 ml	05-01-96	LT
Hardness	130.1	70 mg/l	05-01-96	KW
Iron	236.1	7.12 mg/l	05-03-96	RJI
Manganese	243.1	0.13 mg/l	05-06-96	RJI
Nitrite Nitrogen	353.2	0.01 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	1.02 mg/l	05-14-96	LT
Chloride	325.2	24 mg/l	05-10-96	LT
CBOD <sub>5</sub>	405.1	2 mg/l	05-06-96	KW
Total Suspended Solids	160.2	180 mg/l	05-03-96	KW
Phosphorus	365.4	0.32 mg/l	05-03-96	LT
COD	410.4	25 mg/l	05-03-96	NDA

*Robert W. Stallbaum, Jr.*  
Robert W. Stallbaum, Jr.

President

Reported: May 17, 1996



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

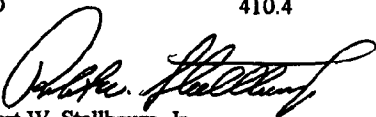
**Sample ID:** Event #09W, WALNUT CREEK

**Lab Log No:** 54117

**Sample Date/Time:** April 12, 1996/ 11:40AM, 13:40PM, 15:40PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.003 mg/l	05-02-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01-96	RJI
Chromium, Total	218.1	<0.05 mg/l	05-02-96	RJI
Copper	220.2	0.001 mg/l	05-07-96	RJI
Lead	239.2	0.002 mg/l	05-01-96	RJI
Nickel	249.1	0.07 mg/l	05-03-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	0.084 mg/l	05-03-96	RJI
Aluminum	202.1	17.48 mg/l	05-02-96	RJI
Alkalinity	310.1	62 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	0.12 mg/l	05-06-96	LT
Fecal Coliform				
Grab@13:40PM	SM-16, 909C	792 col/100 ml	05-01-96	LT
Hardness	130.1	100 mg/l	05-01-96	KW
Iron	236.1	25.87 mg/l	05-03-96	RJI
Manganese	243.1	0.45 mg/l	05-06-96	RJI
Nitrite Nitrogen	353.2	0.02 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	0.47 mg/l	05-14-96	LT
Chloride	325.2	43 mg/l	05-10-96	LT
CBOD,	405.1	2 mg/l	05-06-96	KW
Total Suspended Solids	160.2	784 mg/l	05-03-96	KW
Phosphorus	365.4	0.78 mg/l	05-03-96	LT
COD	410.4	40 mg/l	05-03-96	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: May 17, 1996





**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #09W, ELK CREEK

**Lab Log No:** 54118

**Sample Date/Time:** April 30, 1996/ 12:00N, 14:10 PM, 16:10PM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.002 mg/l	05-02-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01-96	RJI
Chromium, Total	218.1	<0.05 mg/l	05-02-96	RJI
Copper	220.2	0.003 mg/l	05-07-96	RJI
Lead	239.2	0.001 mg/l	05-01-96	RJI
Nickel	249.1	0.09 mg/l	05-03-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	0.079 mg/l	05-03-96	RJI
Aluminum	202.1	17.95 mg/l	05-02-96	RJI
Alkalinity	310.1	40 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	0.16 mg/l	05-06-96	LT
Fecal Coliform				
Grab@14:10PM	SM-16, 909C	1116 col/100 ml	05-01-96	LT
Hardness	130.1	80 mg/l	05-01-96	KW
Iron	236.1	35.64 mg/l	05-03-96	RJI
Manganese	243.1	0.42 mg/l	05-06-96	RJI
Nitrite Nitrogen	353.2	0.03 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	0.54 mg/l	05-14-96	LT
Chloride	325.2	15 mg/l	05-10-96	LT
CBOD,	405.1	2 mg/l	05-06-96	KW
Total Suspended Solids	160.2	836 mg/l	05-03-96	KW
Phosphorus	365.4	0.95 mg/l	05-03-96	LT
COD	410.4	30 mg/l	05-03-96	NDA

Robert W. Stallbaum, Jr.  
President  
Reported: May 17, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01


**Sample ID:** Event #09W, TRIP BLANK

**No:** 54116A

**Sample Date/Time:** April 30, 1996

**Sampler:** N.C. Whiteman

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	05-02-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-01-96	RJI
Chromium, Total	218.1	<0.05 mg/l	05-02-96	RJI
Copper	220.2	<0.001 mg/l	05-07-96	RJI
Lead	239.2	<0.001 mg/l	05-01-96	RJI
Nickel	249.1	< 0.01 mg/l	05-03-96	RJI
Silver	272.2	<0.0002 mg/l	05-07-96	RJI
Zinc	289.1	<0.005 mg/l	05-03-96	RJI
Aluminum	202.1	<0.1 mg/l	05-02-96	RJI
Alkalinity	310.1	<1 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	05-06-96	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	05-01-96	LT
Hardness	130.1	<2 mg/l	05-01-96	KW
Iron	236.1	<0.03 mg/l	05-03-96	RJI
Manganese	243.1	<0.01 mg/l	05-06-96	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	05-14-96	LT
Chloride	325.2	<2 mg/l	05-10-96	LT
CBOD <sub>5</sub>	405.1	2 mg/l	05-06-96	KW
Total Suspended Solids	160.2	2 mg/l	05-03-96	KW
Phosphorus	365.4	<0.01 mg/l	05-03-96	LT
COD	410.4	<10 mg/l	05-15-96	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: May 17, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 89  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #09W, TWELVE MILE CREEK

**Sample Date/Time:** April 30, 1996

**Sampler:** N. C. Whiteman

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
11:40 PM	pH	8.1	NCW
13:40 PM	pH	8.1	NCW
15:40 PM	pH	8.1	NCW
11:40 PM	Dissolved Oxygen	11.13 mg/l	NCW
13:40 PM	Dissolved Oxygen	11.34 mg/l	NCW
15:40 PM	Dissolved Oxygen	9.94 mg/l	NCW
11:40 PM	Temperature	10.4 °C	NCW
13:40 PM	Temperature	9.3 °C	NCW
15:40 PM	Temperature	9.4 °C	NCW
11:40 PM	Conductivity	249 uS/cm	NCW
13:40 PM	Conductivity	213 uS/cm	NCW
15:40 PM	Conductivity	168 uS/cm	NCW
11:40 PM	Velocity *	5.8 fps	NCW
13:40 PM	Velocity *	8.3 fps	NCW
15:40 PM	Velocity *	7.4 fps	NCW
11:40 PM	Depth	1.75 ft	NCW
13:40 PM	Depth	2.75 ft	NCW
15:40 PM	Depth	3 ft	NCW

\*Result is an average of three trials using stop watch and oranges.

*Robert W. Stallbaum, Jr.*  
Robert W. Stallbaum, Jr.  
President

Reported: May 17, 1996  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #09W, WALNUT CREEK

**Sample Date/Time:** April 30, 1996

**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
11:40 AM	pH	7.4	RWS
13:30 PM	pH	7.6	RWS
15:40 PM	pH	7.6	RWS
11:40 AM	Dissolved Oxygen	9.2 mg/l	RWS
13:40 PM	Dissolved Oxygen	9.2 mg/l	RWS
15:40 PM	Dissolved Oxygen	9.0 mg/l	RWS
11:40 AM	Temperature	9.6 °C	RWS
13:40 PM	Temperature	9.3 °C	RWS
15:40 PM	Temperature	9.3 °C	RWS
11:40 AM	Conductivity	410 uS/cm	RWS
13:40 PM	Conductivity	343 uS/cm	RWS
15:40 PM	Conductivity	261 uS/cm	RWS
11:40 AM	Velocity *	4.9 fps	RWS
13:40 PM	Velocity *	6.5 fps	RWS
15:40 PM	Velocity *	6.9 fps	RWS



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #09W, WALNUT CREEK  
**Sample Date/Time:** April 30, 1996  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
11:40 AM- St 1	Distance	17.76 ft	RWS
- St 2	from bridge	18.72 ft	RWS
- St 3	to	18.14 ft	RWS
- St 4	water surface	18.45 ft	RWS
- St 5		18.58 ft	RWS
- St 7		18.54 ft	RWS
- St 8		18.56 ft	RWS
- St 9		18.69 ft	RWS
13:40 PM- St 1	Distance	16.71 ft	RWS
- St 2	from bridge	17.28 ft	RWS
- St 3	to	17.96 ft	RWS
- St 4	water surface	17.76 ft	RWS
- St 5		17.96 ft	RWS
- St 6		18.22 ft	RWS
- St 7		18.11 ft	RWS
- St 8		17.74 ft	RWS
- St 9		18.13 ft	RWS
- St 10		18.29 ft	RWS
15:40 PM- St 1	Distance	16.72 ft	RWS
- St 2	from bridge	16.48 ft	RWS
- St 3	to	17.11 ft	RWS
- St 4	water surface	17.56 ft	RWS
- St 5		17.6 ft	RWS
- St 6		17.14 ft	RWS
- St 7		17.26 ft	RWS
- St 8		17.48 ft	RWS
- St 9		17.35 ft	RWS
- St 10		17.84 ft	RWS

Robert W. Stallbaum, Jr.  
President  
Reported: May 17, 1996  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pimmie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #09W, ELK CREEK

**Sample Date/Time:** April 30, 1996

**Sampler:** R.W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
12:00 N	pH	7.5	RWS
14:10 PM	pH	7.5	RWS
16:10 PM	pH	7.3	RWS
12:00 N	Dissolved Oxygen	8.9 mg/l	RWS
14:10 PM	Dissolved Oxygen	8.9 mg/l	RWS
16:10 PM	Dissolved Oxygen	8.9 mg/l	RWS
12:00 N	Temperature	9.7 °C	RWS
14:10 PM	Temperature	9.6 °C	RWS
16:10 PM	Temperature	9.5 °C	RWS
12:00 N	Conductivity	227 uS/cm	RWS
14:10 PM	Conductivity	195 uS/cm	RWS
16:10 PM	Conductivity	161 uS/cm	RWS
12:00 N	Velocity *	5.3 fps	RWS
14:10 PM	Velocity *	7.4 fps	RWS
16:10 PM	Velocity *	6.8 fps	RWS
12:00 N	Depth at east wall	4.75 ft	RWS
14:10 PM	Depth "	6.25 ft	RWS
16:10 PM	Depth "	7.5 ft	RWS

\*Result is an average of three trials using stop watch and oranges.

*Robert W. Stallbaum, Jr.*  
Robert W. Stallbaum, Jr.  
President

Reported: May 17, 1996  
Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

(814) 474-2044

7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #10W, TWELVE MILE CREEK **Lab Log No:** 54293

**Sample Date/Time:** May 9-10, 1996/ 21:30PM, 23:30 PM, 01:30AM

**Sampler:** N. C. Whiteman

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.001 mg/l	05-14-96	RJI
Cadmium	213.2	0.0001 mg/l	05-10-96	RJI
Chromium, Total	218.1	<0.05 mg/l	05-16-96	RJI
Copper	220.2	<0.001 mg/l	05-10-96	RJI
Lead	239.2	0.002 mg/l	05-14-96	RJI
Nickel	249.1	<0.01 mg/l	05-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-14-96	RJI
Zinc	289.1	0.006 mg/l	05-16-96	RJI
Aluminum	202.1	1.09 mg/l	05-17-96	RJI
Alkalinity	310.1	43 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	0.42 mg/l	05-13-96	LT
Fecal Coliform				
Grab@23:30PM	SM-16, 909C	700 col/100 ml	05-11-96	LT
Hardness	130.1	90 mg/l	05-10-96	KW
Iron	236.1	1.29 mg/l	05-16-96	RJI
Manganese	243.1	0.05 mg/l	05-10-96	RJI
Nitrite Nitrogen	353.2	0.02 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	2.98 mg/l	05-14-96	LT
Chloride	325.2	31 mg/l	05-10-96	LT
CBOD <sub>5</sub>	405.1	2 mg/l	05-15-96	KW
Total Suspended Solids	160.2	50 mg/l	05-17-96	KW
Phosphorus	365.4	0.01 mg/l	05-16-96	LT
COD	410.4	20 mg/l	05-15-96	NDA

  
Robert W. Stallbaum, Jr.

President

Reported: May 17, 1996



**CHURCH** laboratory, inc.

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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219.

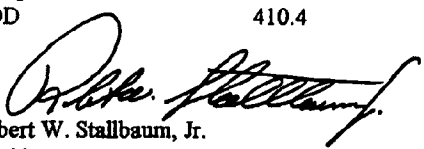
**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #10W, WALNUT CREEK **Lab Log No:** 54294

**Sample Date/Time:** May 9-10, 1996/ 23:30PM, 01:30AM, 03:30AM

**Sampler:** R.W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.002 mg/l	05-14-96	RJI
Cadmium	213.2	0.0002 mg/l	05-10-96	RJI
Chromium, Total	218.1	0.05 mg/l	05-16-96	RJI
Copper	220.2	0.007 mg/l	05-10-96	RJI
Lead	239.2	0.014 mg/l	05-14-96	RJI
Nickel	249.1	0.02 mg/l	05-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-14-96	RJI
Zinc	289.1	0.076 mg/l	05-16-96	RJI
Aluminum	202.1	19.03 mg/l	05-17-96	RJI
Alkalinity	310.1	45 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	0.09 mg/l	05-13-96	LT
Fecal Coliform				
Grab@01:30AM	SM-16, 909C	10100 col/100 ml	05-11-96	LT
Hardness	130.1	74 mg/l	05-10-96	KW
Iron	236.1	20.22 mg/l	05-16-96	RJI
Manganese	243.1	0.30 mg/l	05-16-96	RJI
Nitrite Nitrogen	353.2	0.14 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	0.44 mg/l	05-14-96	LT
Chloride	325.2	22 mg/l	05-10-96	LT
CBOD,	405.1	8 mg/l	05-15-96	KW
Total Suspended Solids	160.2	2504 mg/l	05-17-96	KW
Phosphorus	365.4	2.08 mg/l	05-16-96	LT
COD	410.4	20 mg/l	05-15-96	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: May 17, 1996





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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Water Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

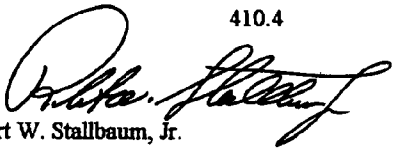
**Sample ID:** Event #10W, ELK CREEK

**Lab Log No:** 54295

**Sample Date/Time:** May 9-10, 1996/ 23:00PM, 01:00AM, 03:00AM

**Sampler:** R. W. Stallbaum

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	0.003 mg/l	05-14-96	RJ
Cadmium	213.2	<0.0001 mg/l	05-10-96	RJ
Chromium, Total	218.1	0.06 mg/l	05-11-96	RJ
Copper	220.2	0.003 mg/l	05-10-96	RJ
Lead	239.2	0.009 mg/l	05-14-96	RJ
Nickel	249.1	0.02 mg/l	05-16-96	RJ
Silver	272.2	<0.0002 mg/l	05-14-96	RJ
Zinc	289.1	0.079 mg/l	05-16-96	RJ
Aluminum	202.1	18.18 mg/l	05-17-96	RJ
Alkalinity	310.1	30 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	0.07 mg/l	05-13-96	LT
Fecal Coliform				
Grab@01:00AM	SM-16, 909C	6400 col/100 ml	05-11-96	LT
Hardness	130.1	55 mg/l	05-10-96	KW
Iron	236.1	19.87 mg/l	05-16-96	RJ
Manganese	243.1	0.25 mg/l	05-16-96	RJ
Nitrite Nitrogen	353.2	0.20 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	0.47 mg/l	05-14-96	LT
Chloride	325.2	8.4 mg/l	05-10-96	LT
CBOD <sub>5</sub>	405.1	6 mg/l	05-15-96	KW
Total Suspended Solids	160.2	3428 mg/l	05-17-96	KW
Phosphorus	365.4	2.30 mg/l	05-16-96	LT
COD	410.4	30 mg/l	05-15-96	NDA

  
Robert W. Stallbaum, Jr.  
President  
Reported: May 17, 1996



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

### Water Analyses Report

Customer: Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

Project: Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

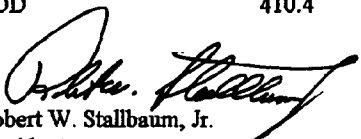
Sample ID: Event #10W, TRIP BLANK

No: 54298A

Sample Date/Time: May 9-10, 1996

Sampler: N.C. Whiteman

PARAMETER	EPA METHOD	RESULTS/ UNITS	ANALYSIS DATE	ANALYST
Arsenic	206.2	<0.001 mg/l	05-14-96	RJI
Cadmium	213.2	<0.0001 mg/l	05-10-96	RJI
Chromium, Total	218.1	<0.05 mg/l	05-16-96	RJI
Copper	220.2	<0.001 mg/l	05-10-96	RJI
Lead	239.2	<0.001 mg/l	05-14-96	RJI
Nickel	249.1	< 0.01 mg/l	05-16-96	RJI
Silver	272.2	<0.0002 mg/l	05-14-96	RJI
Zinc	289.1	<0.005 mg/l	05-16-96	RJI
Aluminum	202.1	<0.1 mg/l	05-17-96	RJI
Alkalinity	310.1	<1 mg/l	05-10-96	KW
Ammonia Nitrogen	350.1	<0.01 mg/l	05-13-96	LT
Fecal Coliform	SM-16, 909C	0 col/100 ml	05-11-96	LT
Hardness	130.1	<2 mg/l	05-10-96	KW
Iron	236.1	<0.03 mg/l	05-16-96	RJI
Manganese	243.1	<0.01 mg/l	05-16-96	RJI
Nitrite Nitrogen	353.2	<0.01 mg/l	05-14-96	LT
Nitrate Nitrogen	353.2	<0.01 mg/l	05-14-96	LT
Chloride	325.2	<2 mg/l	05-10-96	LT
CBOD,	405.1	2 mg/l	05-15-96	KW
Total Suspended Solids	160.2	2 mg/l	05-17-96	KW
Phosphorus	365.4	<0.01 mg/l	05-16-96	LT
COD	410.4	<10 mg/l	05-15-96	NDA

  
Robert W. Stallbaum, Jr.  
President

Reported: May 17, 1996



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #10W, TWELVE MILE CREEK

**Sample Date/Time:** May 9-10, 1996

**Sampler:** N. C. Whiteman

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
21:30 PM	pH	8.9	NCW
23:30 PM	pH	8.5	NCW
01:30 AM	pH	8.1	NCW
21:30 PM	Dissolved Oxygen	7.57 mg/l	NCW
23:30 PM	Dissolved Oxygen	7.58 mg/l	NCW
01:30 AM	Dissolved Oxygen	7.54 mg/l	NCW
21:30 PM	Temperature	14.9 °C	NCW
23:30 PM	Temperature	14.3 °C	NCW
01:30 AM	Temperature	14.8 °C	NCW
21:30 PM	Conductivity	273 uS/cm	NCW
23:30 PM	Conductivity	271 uS/cm	NCW
01:30 PM	Conductivity	253 uS/cm	NCW
21:30 PM	Velocity *	2.8 fps	NCW
23:30 PM	Velocity *	6.2 fps	NCW
01:30 AM	Velocity *	7.5 fps	NCW
21:30 PM	Depth	1.5 ft	NCW
23:30 PM	Depth	2 ft	NCW
01:30 AM	Depth	2.5 ft	NCW

\*Result is an average of three trials using stop watch and oranges.

Robert W. Stalbaum, Jr.  
President  
Reported: May 17, 1996  
Revised: Sept 18, 1996



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA 16415

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #10W, WALNUT CREEK

**Sample Date/Time:** May 9-10, 1996

**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
23:30 PM	pH	7.2	RWS
01:30 AM	pH	7.6	RWS
03:30 AM	pH	7.5	RWS
23:30 PM	Dissolved Oxygen	7.8 mg/l	RWS
01:30 AM	Dissolved Oxygen	8.3 mg/l	RWS
03:30 AM	Dissolved Oxygen	8.4 mg/l	RWS
23:30 PM	Temperature	14.9 °C	RWS
01:30 AM	Temperature	14.6 °C	RWS
03:30 AM	Temperature	14.4 °C	RWS
23:30 PM	Conductivity	228 uS/cm	RWS
01:30 AM	Conductivity	199 uS/cm	RWS
03:30 AM	Conductivity	180 uS/cm	RWS
23:30 PM	Velocity *	8.7 fps	RWS
01:30 AM	Velocity *	7.4 fps	RWS
03:30 AM	Velocity *	8.6 fps	RWS



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7397 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA. 16415

**Field Analyses Report**  
Malcolm Pirnie, Inc.

Page 2 of 2

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01  
**Sample ID:** Event #10W, WALNUT CREEK  
**Sample Date/Time:** May 9-10, 1996  
**Sampler:** R. W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
23:30 PM- St 1	Distance	16.7 ft	RWS
- St 2	from bridge	16.64 ft	RWS
- St 3	to	16.91 ft	RWS
- St 4	water surface	17.03 ft	RWS
- St 5		17.35 ft	RWS
- St 6		16.6 ft	RWS
- St 7		16.7 ft	RWS
- St 8		17.25 ft	RWS
- St 9		17.41 ft	RWS
- St 10		18.21 ft	RWS
01:30 AM- St 1	Distance	16.74 ft	RWS
- St 2	from bridge	16.65 ft	RWS
- St 3	to	17.17 ft	RWS
- St 4	water surface	17.48 ft	RWS
- St 5		17.42 ft	RWS
- St 6		16.79 ft	RWS
- St 7		16.86 ft	RWS
- St 8		17.01 ft	RWS
- St 9		17.27 ft	RWS
- St 10		17.58 ft	RWS
03:30 AM- St 1	Distance	17.18 ft	RWS
- St 2	from bridge	16.74 ft	RWS
- St 3	to	16.92 ft	RWS
- St 4	water surface	16.88 ft	RWS
- St 5		17.43 ft	RWS
- St 6		16.63 ft	RWS
- St 7		16.87 ft	RWS
- St 8		17.07 ft	RWS
- St 9		17.2 ft	RWS
- St 10		17.83 ft	RWS

*Robert W. Stallbaum, Jr.*  
Robert W. Stallbaum, Jr.  
President

Reported: May 17, 1996

Revised: Sept 18, 1996



**CHURCH** laboratory, inc.

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7387 CHESTNUT STREET • P.O. BOX 83  
FAIRVIEW, PA 15416

**Field Analyses Report**

**Customer:** Malcolm Pirnie, Inc.  
S. 3515 Abbott Road  
Buffalo, NY 14219

**Project:** Erie County Water Quality Monitoring Study  
for Lake Erie Watershed #2758-01

**Sample ID:** Event #10W, ELK CREEK

**Sample Date/Time:** May 9-10, 1996

**Sampler:** R.W. Stallbaum

TIME	PARAMETER	RESULTS/ UNITS	ANALYST
23:00 PM	pH	6.5	RWS
01:30 AM	pH	7.0	RWS
03:00 AM	pH	7.3	RWS
23:00 PM	Dissolved Oxygen	8.5 mg/l	RWS
01:00 AM	Dissolved Oxygen	8.6 mg/l	RWS
03:00 AM	Dissolved Oxygen	8.7 mg/l	RWS
23:00 PM	Temperature	14.6 °C	RWS
01:00 AM	Temperature	14.9 °C	RWS
03:00 AM	Temperature	14.3 °C	RWS
23:00 PM	Conductivity	127 uS/cm	RWS
01:00 AM	Conductivity	127 uS/cm	RWS
03:00 AM	Conductivity	120 uS/cm	RWS
23:00 PM	Velocity *	6.6 fps	RWS
01:00 AM	Velocity *	5.2 fps	RWS
03:00 AM	Velocity *	5.7 fps	RWS
23:00 PM	Depth at east wall	8. ft	RWS
01:00 AM	Depth "	8.25 ft	RWS
03:00 AM	Depth "	7.75 ft	RWS

\*Result is an average of three trials using stop watch and oranges.

*Robert W. Stallbaum, Jr.*

Robert W. Stallbaum, Jr.  
President

Reported: May 17, 1996  
Revised: Sept 18, 1996

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