N60478.AR.000498
NWS EARLE
5090.3a

Groundwater Monitoring Study

Sampling Results

Round 1

Waste Oil Storage Tank
Building C-14
Naval Weapons Station Earle
Colts Neck, New Jersey

Contract Number N62472-86-C-1487

Project No. 5

November 1988

Gannett Fleming Environmental Engineers

Harrisburg, PA

Ground Water Monitoring Study

Naval Weapons Station Earle

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Sampling Results

The first round of sampling for the Building C-14 waste oil storage tank area has been completed. A summary of the sampling results is presented in Table 1. The laboratory analysis report from QC, Inc., a New Jersey Certified Laboratory, can be found in Attachment A. The Chain of Custody and Sample Submission Forms are included in Attachment B. The Ground Water Analysis Forms (Nos. VWX-015 A and B) are presented in Attachment C. The location of the monitorings wells is shown in Figure 1.

For this sampling round, the following parameters were measured: petroleum hydrocarbons, total dissolved solids (TDS), total organic carbon (TOC) and pH. The limitations set for these parameters (as found in Table 1 of contract number N62472-86-C-1487, Amendment 7) are:

Parameter	Limitation
petroleum hydrocarbons	10 ppm
TDS	500 ppm
TOC	---
pH	5-9

Petroleum hydrocarbons were undetected in samples from all four wells. The TDS and TOC concentrations in all samples were below the limitation levels. The pH of the samples from wells C-14A and C-29A was measured to be slightly less than the lower limit of 5. The pH was measured in the field. In future sampling rounds, pH values determined in the laboratory will also be reported.

Table 1

Groundwater Monitoring Study
Naval Weapons Station Earle
Summary of Results

Parameter	Well No. C-14A	C-14B	C-14C	C-29A	Blank A	Blank B
Elevation of top of monitor well casing above ground level	0	1 ft. 10 in.	2 ft. 2 in.	3 ft. 6 in.	-	-
Depth to Water Table from top of casing	10 ft.	15 ft. 10 in.	14 ft. 2 in.	12 ft. 2 in.	-	-
Depth to Water Table from ground level	10 ft.	14 ft.	12 ft.	8 ft. 8 in.	-	-
Base/Neutral Compounds by GC/MS plus 10	-	-	-	-	-	-
Lead and Compounds	-	-	-	-	-	-
Petroleum Hydrocarbons	<0.5mg/L	<0.5mg/L	<0.5mg/L	<0.5mg/L	-	<0.5mg/L
pH	4.85	5.22	5.08	4.44	-	-
Total Dissolved Solids (TDS)	150mg/L	130mg/L	130mg/L	170mg/L	-	-
Total Organic Carbon (TOC)	2.0mg/L	4.5mg/L	10mg/L	2.3mg/L	<1.0mg/L	-
Total Volatile Organics by GC/MS plus 10	-	-	-	-	-	-

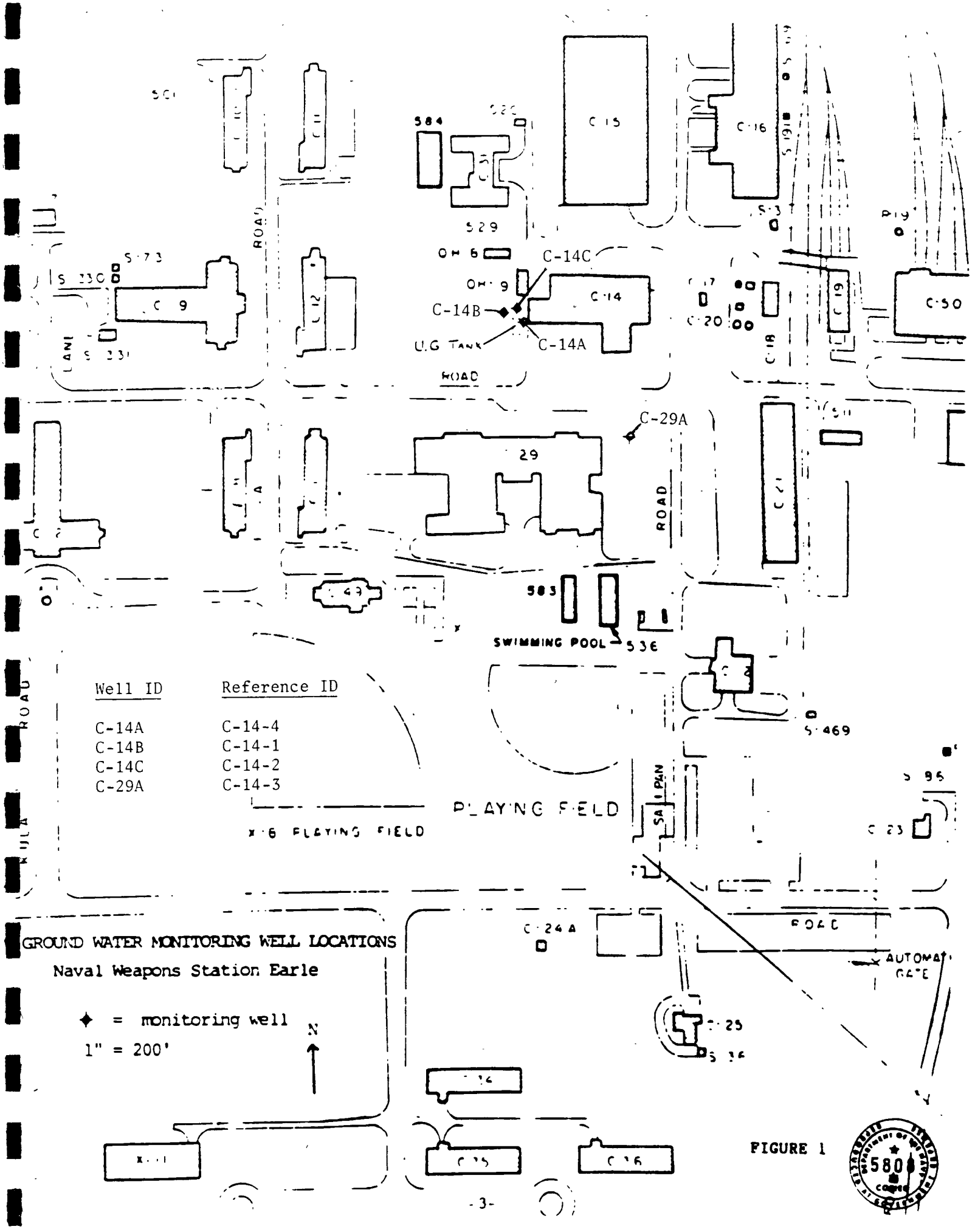
C-14C
C-14B
C-14A
U.G TANK
C-29A
ROAD
SWIMMING POOL
PLAYING FIELD
Well ID
Reference ID
C-14A C-14-4
C-14B C-14-1
C-14C C-14-2
C-29A C-14-3
GROUND WATER MONITORING WELL LOCATIONS
Naval Weapons Station Earle
✦ = monitoring well
1" = 200'
N

FIGURE 1

ATTACHMENT A

Laboratory Analysis

QC Inc

ANALYTICAL DATA REPORT PACKAGE
FOR
GANNETT FLEMING ENVIRONMENTAL ENGINEERS INC.

Case Name	Field Sample #	Laboratory Sample #	Sample Location	Date of Collection
USN-Earl Depot	C-29-A GW	723464		10/21/88
	C-14-B GW	723466		"
	C-14-A GW	723475		"
	C-14-C GW	724684		"
	Blank A	724685		"
	Blank B	724686		"

Laboratory Name QC Inc.

Certification No. PADER No. 09-131
NJDEP No. 77166/77648

Supervisor/Manager Signature Thomas J. Hines

Printed Name Thomas J. Hines

Form QC G-1

RECEIVED

QC Inc
1205 INDUSTRIAL HIGHWAY • P O BOX 514 • SOUTHAMPTON PA 18966-0514 • (215) 355-3900

TABLE OF CONTENTS

FORM NO.	FORM NAME/CONTENT	PAGE
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QC GEN-1	General Analysis Data Reports:	
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	(Total Organic Carbon)	18
	(Total Dissolved Soilds)	24

QC Inc

1265 INDUSTRIAL HIGHWAY • P.O. BOX 514 • SOUTHAMPTON, PA 18966-0514 • (215) 355-3900

LABORATORY CHRONICLE

Lab Sample ID No.: 723464; 723466; 723475; 724684; 724685; 724686

	I	DATE	II
Receipt/Refrigeration	10/21/88		
Organics Extraction			
1. Base/Neutral Extractables			
2. Acid Extractables			
3. Pesticides/PCB's			
4. Dioxin			
Analyses			
1. Volatiles			
2. Base/Neutral Extractables			
3. Acid Extractables			
4. Pesticides/PCB's			
5. Dioxin			
Inorganics			
1. Metals			
2. Cyanides			
3. Phenols			
Other Analytes			
1. Petroleum Hydrocarbons	10/26/88		
2. Total Organic Carbon	10/26/88		
3. Total Dissolved Soilds	10/26/88		

SECTION SUPERVISOR REVIEW & APPROVAL
(Signature) [signature]
(Printed Name) Thomas J. Hines
(Date) 10/28/88

QC SUPERVISOR REVIEW & APPROVAL
(Signature) Robert R. Hirst
(Printed Name) Robert R. Hirst
(Date) 10/28/88

Form QC G-5

QC Inc
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METHODOLOGY SUMMARY

Petroleum Hydrocarbons:	USEPA Methods for Chemical Analysis of Water and Wastes, 1979 Method 418.1
Total Organic Carbon:	40 CFR Part 136, USEPA Methods for Analysis of Water and Wastes, 1979 Method 415.1
Total Dissolved Solids:	40 CFR Part 136, USEPA Methods for Analysis of Water and Wastes, 1979 Method 160.1

QC Inc

000003

CHAIN OF CUSTODY WITHOUT SHUTTLE

I.D. # _____

NAME OF UNIT AND ADDRESS. Garnett Fleming

SAMPLE NUMBER	Number of Containers	DESCRIPTION OF SAMPLES
723475	3	C-14-A
723464	3	C-29-A
723466	3	C-14B
723684	3	C-14C
724685	1	Blank A
724686	1	Blank B

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE: CR Cathy Riccabone

TIME	DATE
8:00am	10/24

SAMPLE NUMBER	RELINQUISHED BY:	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
	CR C. Riccabone	J E Matacky	10:00	10/24	Transfer / Log IN
	J E Matacky	[illegible]	10:00	10/24	wet chem Tests

QC Inc

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GENERAL ANALYSIS DATA REPORT

SAMPLE NO.

C-29-A G.W.

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. Gannett Fleming

Matrix (Soil/Water): Water

Lab Sample ID: 723464

Sample Wt/Vol: _____(g/ml)_____

Date Received: 10/21/88

% Moisture: not dec.__X___ dec._____

Date Analyzed: 10/26/88

Dilution Factor:

RESULTS

Parameter	Sample Concentration Units	Method Blank Units
Petroleum Hydrocarbons	<0.5 mg/l	<0.5 mg/l
Total Organic Carbon	2.3 mg/l	<1.0 mg/l
Total Dissolved Solids	170 mg/l	<2 mg/l

Form QC GEN-1

QC Inc

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GENERAL ANALYSIS DATA REPORT

SAMPLE NO.

C-14-B G.W.

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. Gannett Fleming

Matrix (Soil/Water): Water

Lab Sample ID: 723466

Sample Wt/Vol: _____(g/ml)_____

Date Received: 10/21/88

% Moisture: not dec.__X___ dec.____

Date Analyzed: 10/26/88

Dilution Factor:

RESULTS

Parameter	Sample Concentration Units	Method Blank Units
Petroleum Hydrocarbons	<0.5 mg/l	<0.5 mg/l
Total Organic Carbon	4.5 mg/l	<1.0 mg/l
Total Dissolved Solids	130 mg/l	<2 mg/l

Form QC GEN-1

QC Inc

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GENERAL ANALYSIS DATA REPORT

SAMPLE NO.

C-14-A G.W.

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. Gannett Fleming

Matrix (Soil/Water): Water

Lab Sample ID: 723475

Sample Wt/Vol: _____(g/ml)_____

Date Received: 10/21/88

% Moisture: not dec.__X___ dec.____

Date Analyzed: 10/26/88

Dilution Factor:

RESULTS

Parameter	Sample Concentration Units	Method Blank Units
Petroleum Hydrocarbons	<0.5 mg/l	<0.5 mg/l
Total Organic Carbon	2.0 mg/l	<1.0 mg/l
Total Dissolved Solids	150 mg/l	<2 mg/l

Form QC GEN-1

QC Inc

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GENERAL ANALYSIS DATA REPORT

SAMPLE NO.

C-14-C G.W.

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. Gannett Fleming

Matrix (Soil/Water): Water

Lab Sample ID: 724684

Sample Wt/Vol: _____(g/ml)_____

Date Received: 10/21/88

% Moisture: not dec.__X___ dec.____

Date Analyzed: 10/26/88

Dilution Factor:

RESULTS

Parameter	Sample Concentration Units	Method Blank Units
Petroleum Hydrocarbons	<0.5 mg/l	<0.5 mg/l
Total Organic Carbon	10 mg/l	<1.0 mg/l
Total Dissolved Solids	130 mg/l	<2 mg/l

Form QC GEN-1

QC Inc

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GENERAL ANALYSIS DATA REPORT

SAMPLE NO.

Blank A

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. Gannett Fleming

Matrix (Soil/Water): Water

Lab Sample ID: 724685

Sample Wt/Vol: _____(g/ml)_____

Date Received: 10/21/88

% Moisture: not dec.__X___ dec.____

Date Analyzed: 10/26/88

Dilution Factor:

RESULTS

Parameter	Sample Concentration Units	Method Blank Units
Total Organic Carbon	<1.0 mg/l	<1.0 mg/l

Form QC GEN-1

QC Inc

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GENERAL ANALYSIS DATA REPORT

SAMPLE NO.

Blank B

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. Gannett Fleming

Matrix (Soil/Water): Water

Lab Sample ID: 724686

Sample Wt/Vol: _____(g/ml)_____

Date Received: 10/21/88

% Moisture: not dec.__X___ dec.____

Date Analyzed: 10/26/88

Dilution Factor:

RESULTS

Parameter	Sample Concentration Units	Method Blank Units
Petroleum Hydrocarbons	<0.5 mg/l	<0.5 mg/l

Form QC GEN-1

QC Inc

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GENERAL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: QC Inc.

Lab Code: 77166 Contract/P.O. No.: Gannett Fleming

Matrix Spike Sample #: PHC: 724686 , TOC: 723475 , TDS: 723475

Lab Sample ID #: 723475,723464,723466,724684,724685,724686

COMPOUND	AMT ADDED (mg/l)	SAMPLE RESULT (mg/l)	CONC. MS (mg/l)	MS % REC #	QC LIMITS % REC	CONC. MSD (mg/l)	MS/MSD RPD #
Petr hydrocarbons	30 mg/l	<0.5	25	83.0	80-120	27	8.0%
TOC	30	2.0	31	97.0	80-120	33	6.0%
T. Diss. Solids	283	150	408	91.0	80-120	328	* 21.7%

COLUMN TO BE USED TO FLAG RECOVERY AND RPD VALUES

* VALUES OUTSIDE OF QC LIMITS

RPD: _1___ out of _3___ outside limits

Spike Recovery: ___ out of ___ outside limits

COMMENTS: _____

_____

_____

Form QC GEN-2

Gannet Fleming

Q.C. Inc.

Tier 1 Report Form

Date: 10/25/88 Analyst: O.M. Analysis: PHC

Standardizations: Titrants or Standard Curve Data

Ran two knowns and compared to standard curve.
See graph and curve attached.

Example Calculation:

$$\underset{\text{per graph}}{mg/l} \times \frac{\text{final volume}}{\text{original volume}} = ppm$$

Spike Solution and Spike Procedure:

$$\frac{3\ ml\ of\ 5000\ ppm}{500\ ml\ of\ sample} = 30\ ppm\ spike\ conc.$$

Runs: Blank

See Attached

Sample #1

Sample #2

Sample #3

Sample #4

Sample #5

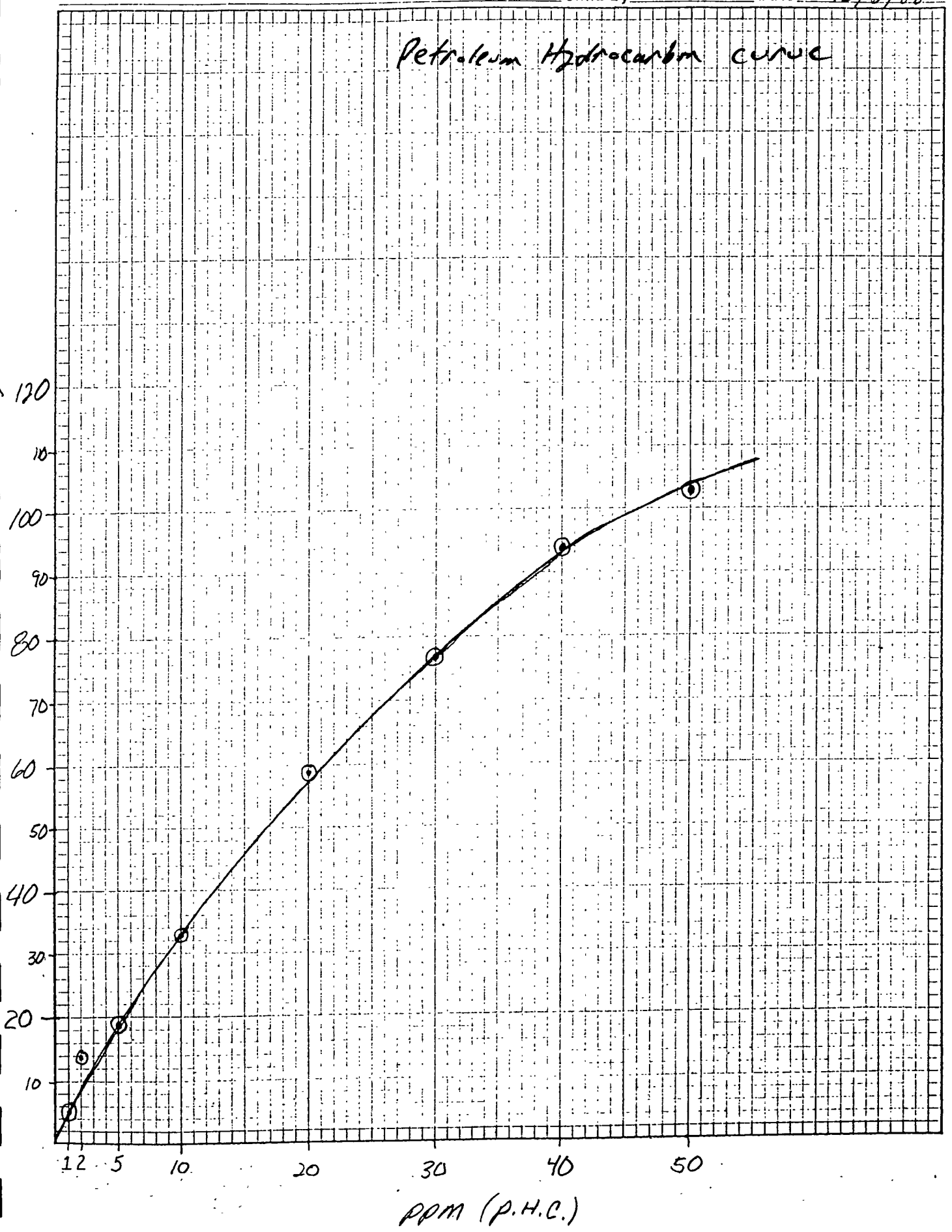
Matrix Spike

Matrix Spike Duplicate

% Recovery Matrix Spike:

Matrix Spike / Matrix Spike Duplicate RPD (relative percent difference)

Project _____ W.O. No. _____ Sheet ____ of ____
Subject _____ By _____ Date CURVE MADE:
Chkd by _____ Date 10/6/88



QC Inc

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PETROLEUM HYDROCARBONS

DATE	I.D. #	amt.spl.	Final Vol.	Dil.	Peak Ht.	ppm FHC	Odor	Client
10-25-88	BLANK	100 ml	100 ml	—	4 mm	—	—	Gannett Flemming
	8719	500 ml	100 ml	x .2	after blank 2.8 mm	1.5 ppm		"
	8720	500 ml	100 ml	x .2	4 mm	1.5 ppm		"
	8721	500 ml	100 ml	x .2	1 mm	1.5 ppm		"
	8722	500 ml	100 ml	x .2	1.8 mm	1.5 ppm		"
	8724	500 ml	100 ml	x .2	2 mm	1.5 ppm		"
	MS 8724	500 ml	100 ml	10 → 50 ml x .2	66.8 mm	25 ppm		"
	MSD 8724	500 ml	100 ml	10 → 50 ml x .2	70.2 mm	27 ppm		"

PHC RAW DATA
Reviewed 10/28/88
RCF
LAB Director

000014

Chart No WGPE-007-1493

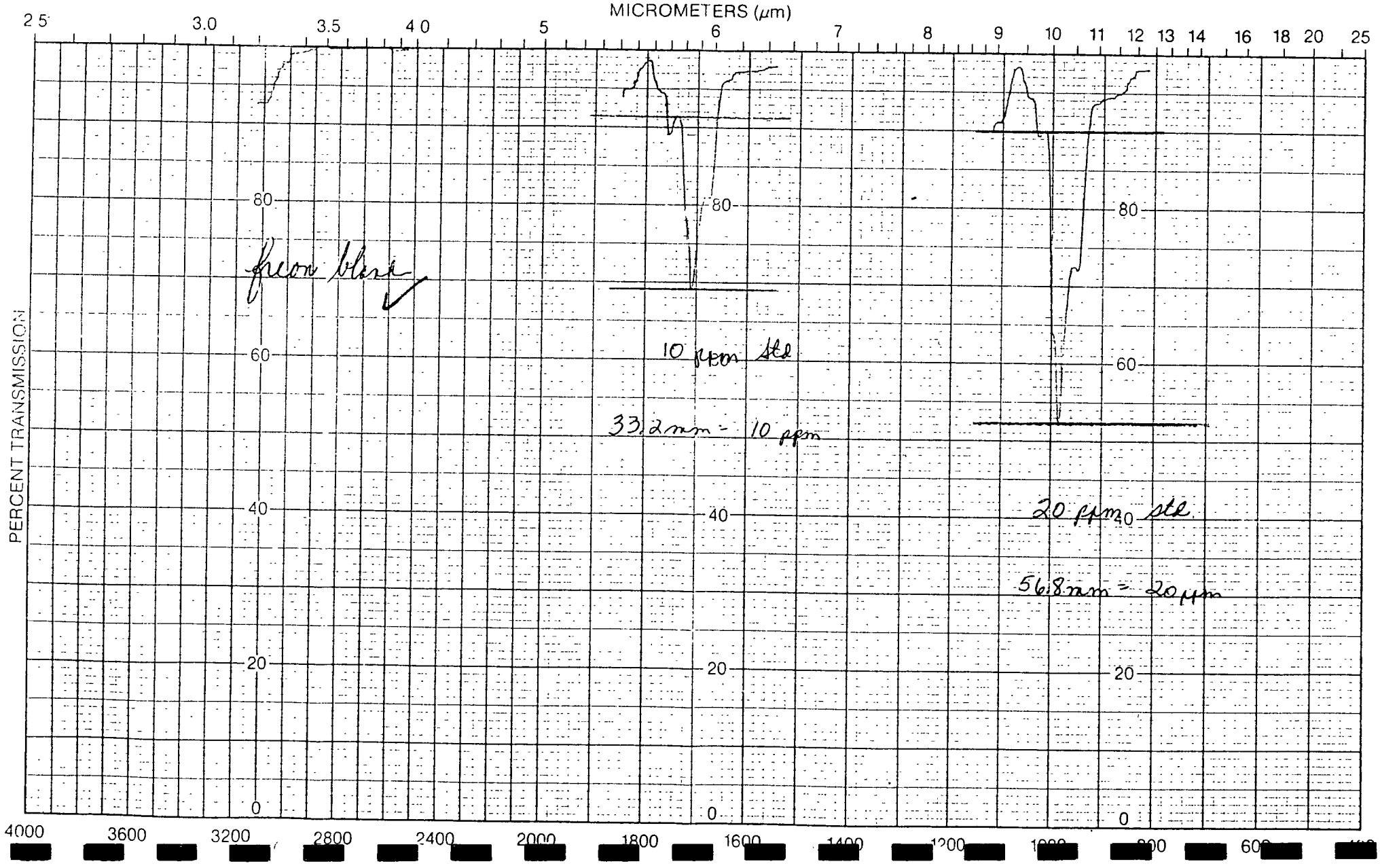
WILMAD GLASS CO. INC
U S Route 40 and Oak Road
BUENA, N J 08310 U S A
Printed in U S A

CONCENTRATION
THICKNESS
PHASE
REMARKS

SCAN MODE: ACCY. ☐ SURVEY ☐ HI ENERGY ☐ CAL. ☐ RESOLUTION ☐

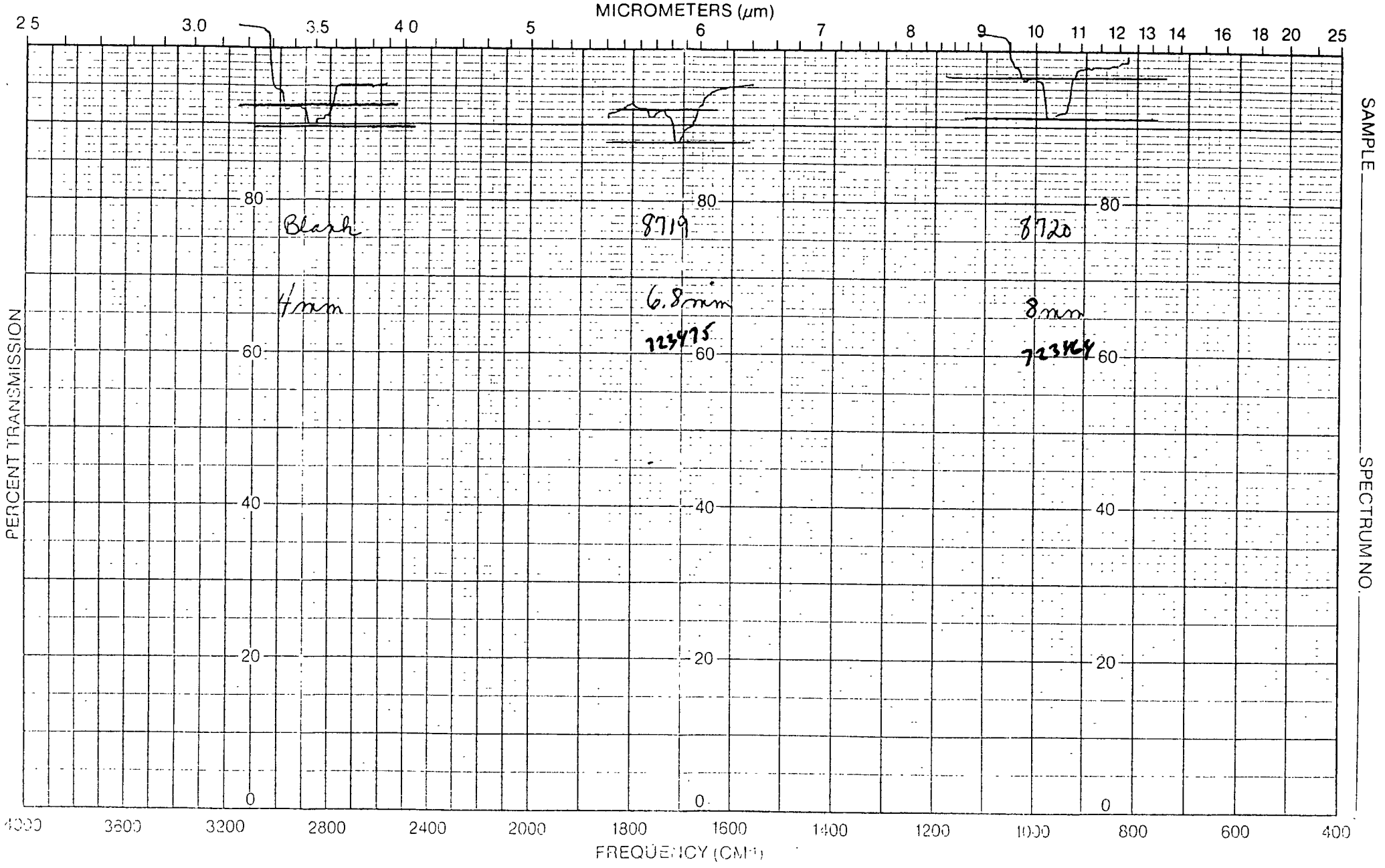
OPERATOR: DCM DATE: 10-25-88

SPECTRUM NO.
SAMPLE
ORIGIN



000015

CONCENTRATION	SCAN MODE ACCY. ☐ SURVEY ☐	SPECTRUM NO.
THICKNESS	HI ENERGY ☐ CAL ☐	SAMPLE
PHASE	RESOLUTION ☐	
REMARKS	OPERATOR DATE	ORIGIN



000016

WILMAD BUENA, N J 08310 U S A Printed in U S A

WP-5/87-150

CONCENTRATION _____

THICKNESS _____

PHASE _____

REMARKS _____

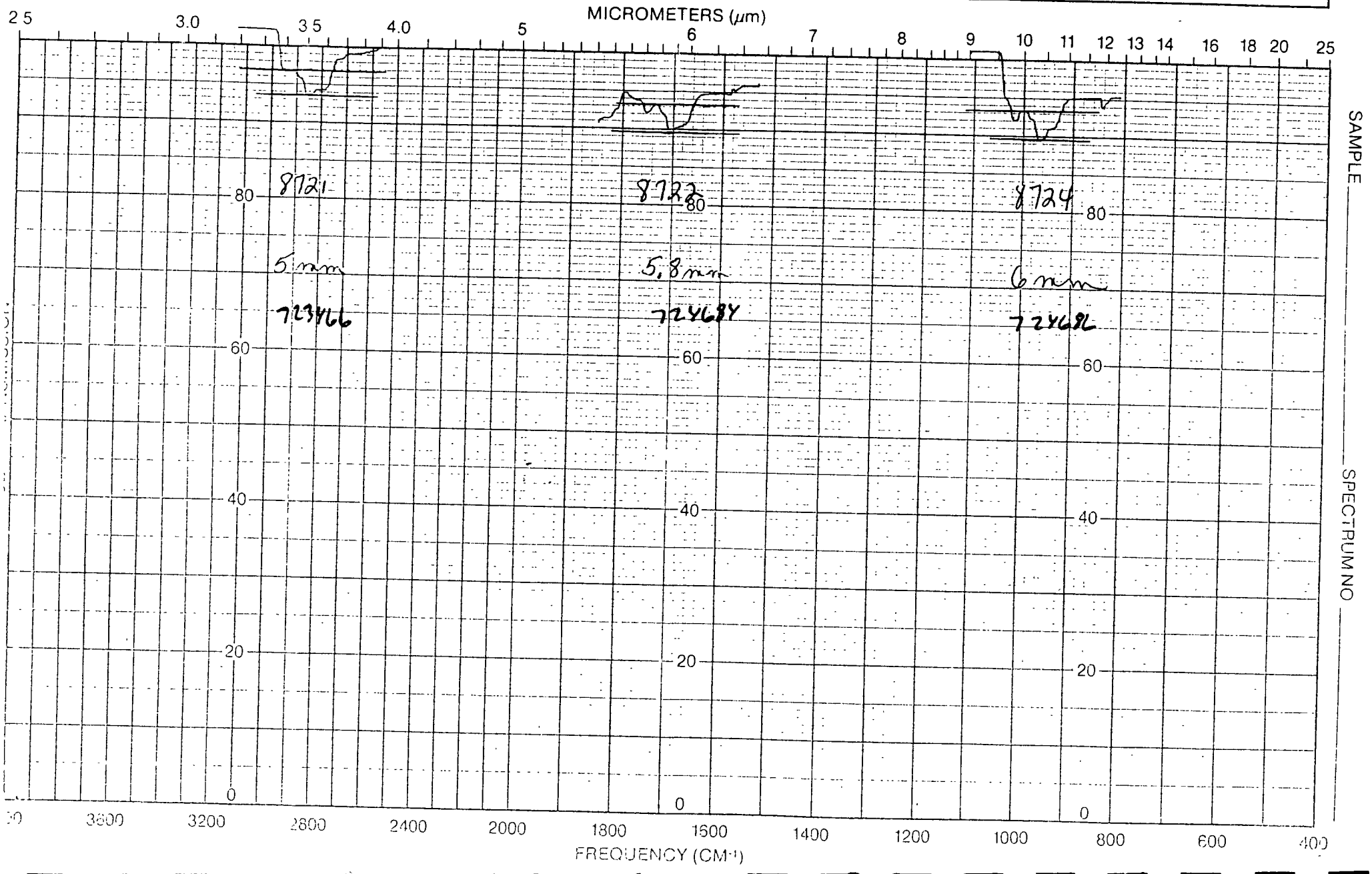
SCAN MODE ACCY. ☐ SURVEY ☐ HI ENERGY ☐ CAL. ☐ RESOLUTION ☐

OPERATOR dcm DATE 10-25-88

SPECTRUM NO. _____

SAMPLE _____

ORIGIN _____

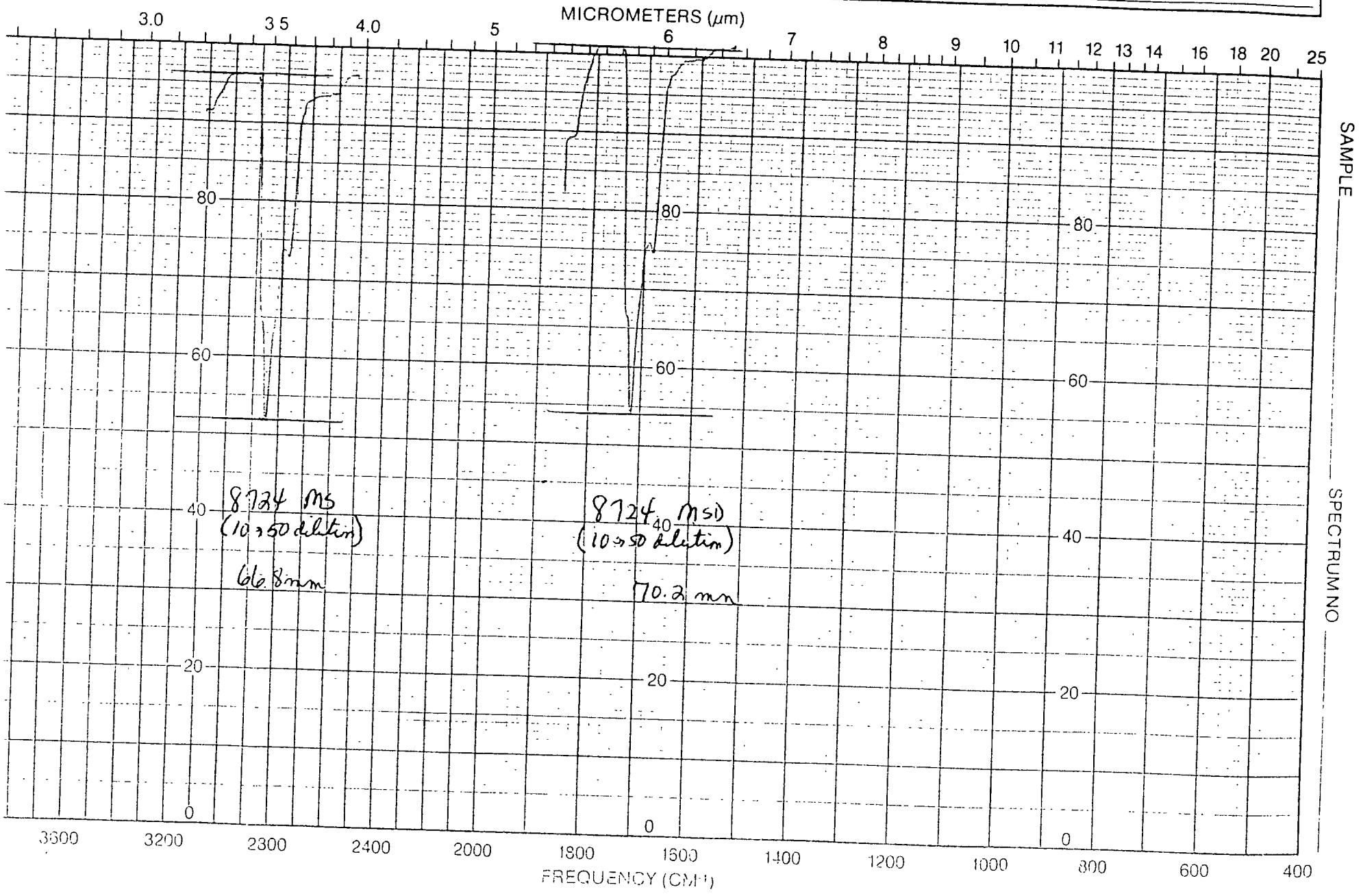


WILMAD BUENA, N J 08310 U S A Printed in U S.A WP-5/87-150

CONCENTRATION
THICKNESS
HOSE
REMARKS

SCAN MODE ACCY. ☐ SURVEY ☐
HI ENERGY ☐ CAL. ☐
RESOLUTION ☐
OPERATOR dcm DATE 10-25-88

SPECTRUM NO.
SAMPLE
ORIGIN



Gannet Fleming

Q.C. Inc.

Tier 1 Report Form

Date: 10/25/88 Analyst: D.M. Analysis: TOC

Standardizations: Titrants or Standard Curve Data

See Copy of TOC DAILY CALIBRATION Logbook

Example Calculation:

$$mV \times \frac{\mu g\ C}{mV}$$ where: $\frac{\mu g\ C}{mV}$ = scaling factor = 0.05402

Spike Solution and Spike Procedure:

$$\frac{3\ ml\ of\ 1000\ ppm\ stock\ solution}{100\ ml\ of\ sample} = 30\ \mu m\ spike\ concentration$$

Runs: Blank

see attached

Sample #1

Sample #2

Sample #3

Sample #4

Sample #5

Matrix Spike

Matrix Spike Duplicate

% Recovery Matrix Spike:

Matrix Spike / Matrix Spike Duplicate RPD (relative percent difference)

TOC Daily Calibration

Date	Standard I.D.	High Level Acc. Range	High Level measured value	Low Level Acc. Range	Low Level measured value	Scaling factor	Analyst
10-25-88	30 ppm	28.2 25 - 31	28.5	7.05 6.3 - 7.8	6.8	0.05402	[illegible]

TOC Print-out

10-25-88

Diane Maher

DI H_2O

SPL# 00001	01:28:[illegible]	TIC = -0.34647 mV	-0.01696 ug C	-0.05963 ppm
SPL# 00001	01:33:11	TOC = -1.13623 mV	-0.06219 ug C	-0.19558 ppm
SPL# 00001	01:37:47	TIC = 1.16849 mV	0.06396 ug C	0.20113 ppm
SPL# 00001	01:42:17	TOC = 2.41644 mV	0.13227 ug C	0.41594 ppm
SPL# 00001	01:45:52	TIC = 0.57875 mV	0.03167 ug C	0.08962 ppm
SPL# 00001	01:50:52	TOC = -0.35269 mV	-0.08688 ug C	-0.28379 ppm

30 ppm Std

SPL# 00002	02:12:11	TIC = 1.42145 mV	0.07780 ug C	0.24467 ppm
SPL# 00002	02:17:11	TOC = 175.089 mV	9.58397 ug C	30.1383 ppm
SPL# 00002	02:20:16	TIC = 3.20062 mV	0.17957 ug C	0.56469 ppm
SPL# 00002	02:25:16	TOC = 175.738 mV	9.61947 ug C	30.2499 ppm

[illegible]	[illegible]	[illegible]	[illegible] mV	[illegible] ug C	[illegible] ppm
[illegible]	[illegible]	[illegible]	1.843[illegible] mV	0.10090 ug C	0.31729 ppm
[illegible]	[illegible]	[illegible]	[illegible] mV	9.70942 ug C	30.5328 ppm
[illegible]	[illegible]	[illegible]	1.95597 mV	0.10706 ug C	0.33667 ppm
[illegible]	[illegible]	[illegible]	[illegible] mV	9.31224 ug C	30.0070 ppm

DI H_2O

[illegible]	[illegible]	TIC =	0.32624 mV	0.01762 ug C	0.05542 ppm
[illegible]	[illegible]	TOC =	0.7[illegible]75 mV	0.04131 ug C	0.12992 ppm
[illegible]	[illegible]	TIC =	0.41040 mV	0.02217 ug C	0.06972 ppm
[illegible]	[illegible]	TOC =	-1.16475 mV	-0.06291 ug C	-0.19785 ppm

[illegible]	[illegible]	TIC =	15.5714 mV	0.84106 ug C	2.64549 ppm
[illegible]	[illegible]	TOC =	96.1627 mV	5.19531 ug C	16.3374 ppm
[illegible]	[illegible]	TIC =	18.2415 mV	0.98551 ug C	3.09911 ppm
[illegible]	[illegible]	TOC =	102.018 mV	5.51149 ug C	17.3317 ppm

28.2 ppm

[illegible]	[illegible]	TIC =	1.5[illegible] mV	1.08207 ug C	0.16060 ppm
[illegible]	[illegible]	TOC =	162.611 mV	2.78541 ug C	27.6271 ppm
[illegible]	[illegible]	TIC =	2.91[illegible] mV	0.15894 ug C	0.49902 ppm
[illegible]	[illegible]	TOC =	171.71[illegible] mV	9.30929 ug C	29.2745 ppm

DI H_2O

[illegible]	[illegible]	TIC =	7.[illegible] mV	0.41620 ug C	1.30883 ppm
[illegible]	[illegible]	TOC =	5.[illegible] mV	0.45150 ug C	1.41984 ppm
[illegible]	[illegible]	TIC =	[illegible] mV	0.06312 ug C	0.19851 ppm
[illegible]	[illegible]	TOC =	0.77331 mV	0.01828 ug C	0.05751 ppm

7.05 ppm

[illegible]	[illegible]	TIC =	[illegible] mV	0.02368 ug C	0.07449 ppm
[illegible]	[illegible]	TOC =	[illegible] mV	0.27496 ug C	7.15[illegible] ppm
[illegible]	[illegible]	[illegible]	[illegible] mV	0.10572 ug C	0.89651 ppm
[illegible]	[illegible]	[illegible] =	[illegible] mV	1.07581 ug C	[illegible] ppm

DI H_2O

[illegible]	[illegible]	[illegible]	[illegible] mV	[illegible] ug C	0.17465 ppm
[illegible]	[illegible]	[illegible]	[illegible] mV	[illegible] ug C	[illegible] ppm

723475

[illegible]	06:01:40	TIC = 166.145 mV	8.97616 ug C	28.2270 ppm
[illegible]	06:06:12	TOC = 11.7173 mV	0.63707 ug C	1.99080 ppm

723475 MS

[illegible]	06:16:22	TIC = 177.387 mV	7.10696 ug C	23.2895 ppm
[illegible]	06:21:22	TOC = 162.064 mV	9.83670 ug C	30.9315 ppm

723475 MSD

[illegible]	06:25:02	TIC = 151.138 mV	7.11730 ug C	22.3814 ppm
[illegible]	06:30:02	TOC = 193.177 mV	10.4140 ug C	32.8365 ppm

[illegible]	[illegible]	TOC =	17.4777 mV	0.94425 ug C	2.96935 ppm

723464

[illegible]	[illegible]	TIC =	85.1669 mV	4.60124 ug C	14.4693 ppm
[illegible]	[illegible]	TOC =	13.2610 mV	0.71644 ug C	2.25296 ppm

DI H_2O

[illegible]	[illegible]	TIC =	2.77285 mV	0.14982 ug C	0.47109 ppm
[illegible]	07:00:42	TOC =	-0.56955 mV	-0.03077 ug C	-0.09676 ppm

723466

[illegible]	[illegible]	TIC =	130.532 mV	7.05217 ug C	22.1766 ppm
[illegible]	07:14:47	TOC =	26.7654 mV	1.44604 ug C	4.54728 ppm

DI H_2O

[illegible]	[illegible]	TIC =	4.09901 mV	0.22119 ug C	0.69653 ppm
[illegible]	[illegible]	TOC =	0.65460 mV	-0.03536 ug C	-0.11131 ppm

8727 (724684)

[illegible]	[illegible]	TIC =	99.2910 mV	5.36431 ug C	16.8689 ppm
[illegible]	[illegible]	TOC =	57.2304 mV	3.20540 ug C	10.0797 ppm

DI

[illegible]	[illegible]	TIC =	3.98674 mV	0.21538 ug C	0.67732 ppm
[illegible]	[illegible]	TOC =	-1.64567 mV	-0.08890 ug C	-0.27959 ppm

8723 (724685)

[illegible]	[illegible]	TIC =	[illegible] mV	[illegible] ug C	[illegible] ppm
[illegible]	[illegible]	TOC =	[illegible] mV	[illegible] ug C	0.17024 ppm

Garnet Fleming

Q.C. Inc.

Tier 1 Report Form

Date: 10/25/88 Analyst: K.F. Analysis: TDS

Standardizations: Titrants or Standard Curve Data

Example Calculation:

$$\frac{A-B}{C} \times 1{,}000{,}000$$

A = Pan wt. + sample wt. after drying
B = Pan wt.
C = sample wt.

Spike Solution and Spike Procedure:
25 mls of Solution to
25 mls of Sample

WP 1185
TV - 283
Range 245 - 329

$$\frac{204 - (1/2)(150)}{(1/2)(283)} \times 100 = 91.2\%$$

Runs: Blank

See attached for results.

Sample #1

Sample #2

Sample #3

Sample #4

Sample #5

Matrix Spike

Matrix Spike Duplicate

% Recovery Matrix Spike:

Matrix Spike / Matrix Spike Duplicate RPD (relative percent difference)

T.D.S.

LABORATORY REPORT

Plant Hatboro Date October 25, 1988

			62.8%	[illegible]	[illegible]	91.1%
TEST No. 1185 TV-283 R-(245-321)	KNOWN 1	8719 2	8719 (Dup) 3	8719 (SP) 4	8719 (Sp) 5	8720 6
DISH + FAT	1.6182	1.6521	1.6192	43.7790	1.6843	1.6505
DISH	1.5986	1.6445	1.6118	43.7708	1.6741	1.6421
FAT	0.0196	0.0076	0.0074	0082	0.0102	0.0084
PIPETTES + SAMPLE						
PIPETTES						
SAMPLE	50 ml	50 ml	50 ml	50 ml	50 ml	50 ml
% FAT	392	152	148	164	204	170

	8721 6	8722 7	BLANK 8			
DISH + SOLIDS	1.6660	1.6783	43.7790			
DISH	1.6597	1.6720	43.7708			
SOLIDS	0.0063	0.0063	0082			
DISH or PIPETTE + SAMPLE						
DISH or PIPETTE						
SAMPLE	50 ml	50 ml	50 ml			
% SOLIDS	130	130	4			

Katie [illegible]
Operator

FORM NO. 06-0001

Order New Pads from FMC Beverage Equipment Division (Mojonnier)

ATTACHMENT B

Chain of Custody Forms

Sample Submission Forms

QC Inc
1205 INDUSTRIAL HIGHWAY
PO BOX 511
SOUTHAMPTON PA 18966

REQUEST FOR ANALYSIS - AQUEOUS SAMPLES

CLIENT: Gamma Fleming (Navy Earle) SAMPLE ID: C-14A

SAMPLE MATRIX: X Groundwater ___ Surface Water ___ Drinking Water ___ Other ___

SAMPLE DATE: 10/20/88 DATE SUBMITTED TO LAB: 10/21/88

CONTACT NAME: John Latsha PHONE: (717) 763-7211

REPORT FORMAT: ___ STANDARD X TIER I ___ TIER II ___ OTHER: ___

CHAIN-OF-CUSTODY: X YES ___ NO RESULTS DUE: ___/___/___

GENERAL ANALYSIS

___ Acidity
___ Alkalinity
___ BOD - 5 day
___ BOD - soluble
___ Bromide
___ Carbon, Total
___ Carbon, Inorganic
X Carbon, Organic
___ Carbon Dioxide
___ Chloride
___ Chlorine Demand
___ Chlorine, Residual
___ Chloramines
___ Color
___ Conductivity
___ Cyanide, Amenable
___ Cyanide, Total
___ Fluoride
___ Hardness, Total
___ Hardness, Calcium
___ Nitrogen, Ammonia
___ Nitrogen, NO2+NO3
___ Nitrogen, Nitrate
___ Nitrogen, Nitrite
___ Nitrogen, Kjeldahl
___ Odor, TON
___ Oil and Grease
X Petroleum Hydrocarbons
___ pH
___ Phenols, Total
___ Phosphate, Total
___ Phosphate, Total Soluble
___ Phosphate, Ortho
___ Phosphorus, Total
___ Silica
___ Solids, Total
X Solids, Dissolved
___ Solids, Suspended
___ Solids, Settleable
___ Sulfate
___ Sulfide
___ Sulfite
___ Surfactants (ABS/LAS)
___ Total Organic Halides (TOX)
___ Turbidity

METALS ANALYSIS

___ Atomic Absorption
___ ICP

___ TOTAL
___ DISSOLVED

___ Priority Pollutant List (13)
___ Hazardous Substance List (24)
___ RCRA (8)

___ Silver
___ Aluminum
___ Arsenic
___ Boron
___ Barium
___ Beryllium
___ Bismuth
___ Calcium
___ Cadmium
___ Cobalt
___ Chromium, Total
___ Chromium, Hexavalent
___ Copper
___ Iron
___ Mercury
___ Potassium
___ Magnesium
___ Manganese
___ Molybdenum
___ Sodium
___ Nickel
___ Lead
___ Antimony
___ Selenium
___ Tin
___ Titanium
___ Thallium
___ Vanadium
___ Zinc

ORGANICS ANALYSIS

Gas Chromatography/ Mass Spectrometry

___ Priority Pollutants (VOC,BN/A,Pest/PCB)

___ Hazardous Substances (VOC,BN/A,Pest/PCB)

___ PPL Volatiles
___ HSL Volatiles
___ VO Library Search
___ PPL Base/Neutrals
___ HSL Base/Neutrals
___ BN Library Search
___ PPL Acids
___ HSL Acids
___ AE Library Search

Gas Chromatography

___ Priority Pollutants (VOC,Pest/PCB)

___ PPL Volatiles

___ PPL Pest/PCB

___ Benzene,Toluene, Xylenes (BTX)

___ FID Analysis of Pet Hydrocarbon Extract

___ NJDEP A-280 (inc VO/Pest/PCB)

___ USEPA Regulated VOs

___ USEPA Nonregulated VOs

ADDITIONAL ANALYSIS/INSTRUCTIONS:

QC Inc

CHAIN OF CUSTODY RECORD

Customer Gannett Fleming # _____

Address P.O. Box 1963

Harrisburg State PA Zip 17105

PSID # _____

LAB ID#	# OF CONTAINERS	DESCRIPTION OF SAMPLES
	3	½ gal plastic – TDS ½ gal. clear glass – pet. hydrocarbon 1 qt. amber – TCC

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE

TIME	DATE

SAMPLE NUMBER	RELINQUISHED BY	RECEIVED BY	TIME	DATE	REASON FOR CHANGE OF CUSTODY
C-14A	Yasmin Smoroberg	[illegible]	16:00	10-21-88	lab analysis

QC Inc
1205 INDO TRIAL HIGHWAY
PO BOX 314
SOUTHAMPTON PA 18966

REQUEST FOR ANALYSIS - AQUEOUS SAMPLES

CLIENT: Gannett Fleming (Navy Earle) SAMPLE ID: C-14B

SAMPLE MATRIX: X Groundwater ___ Surface Water ___ Drinking Water ___ Other ___

SAMPLE DATE: 10/20/88 DATE SUBMITTED TO LAB: 10/21/88

CONTACT NAME: JOHN LATSHA PHONE: (717) 763-7211

REPORT FORMAT: ___ STANDARD X TIER I ___ TIER II ___ OTHER: ___

CHAIN-OF-CUSTODY: X YES ___ NO RESULTS DUE: ___/___/___

GENERAL ANALYSIS

- ___ Acidity
- ___ Alkalinity
- ___ BOD - 5 day
- ___ BOD - soluble
- ___ Bromide
- ___ Carbon, Total
- ___ Carbon, Inorganic
- X Carbon, Organic
- ___ Carbon Dioxide
- ___ Chloride
- ___ Chlorine Demand
- ___ Chlorine, Residual
- ___ Chloramines
- ___ Color
- ___ Conductivity
- ___ Cyanide, Amenable
- ___ Cyanide, Total
- ___ Fluoride
- ___ Hardness, Total
- ___ Hardness, Calcium
- ___ Nitrogen, Ammonia
- ___ Nitrogen, NO2+NO3
- ___ Nitrogen, Nitrate
- ___ Nitrogen, Nitrite
- ___ Nitrogen, Kjeldahl
- ___ Odor, TON
- ___ Oil and Grease
- X Petroleum Hydrocarbons
- ___ pH
- ___ Phenols, Total
- ___ Phosphate, Total
- ___ Phosphate, Total Soluble
- ___ Phosphate, Ortho
- ___ Phosphorus, Total
- ___ Silica
- ___ Solids, Total
- X Solids, Dissolved
- ___ Solids, Suspended
- ___ Solids, Settleable
- ___ Sulfate
- ___ Sulfide
- ___ Sulfite
- ___ Surfactants (ABS/LAS)
- ___ Total Organic Halides (TOX)
- ___ Turbidity

METALS ANALYSIS

- ___ Atomic Absorption
- ___ ICP
- ___ TOTAL
- ___ DISSOLVED
- ___ Priority Pollutant List (13)
- ___ Hazardous Substance List (24)
- ___ RCRA (8)
- ___ Silver
- ___ Aluminum
- ___ Arsenic
- ___ Boron
- ___ Barium
- ___ Beryllium
- ___ Bismuth
- ___ Calcium
- ___ Cadmium
- ___ Cobalt
- ___ Chromium, Total
- ___ Chromium, Hexavalent
- ___ Copper
- ___ Iron
- ___ Mercury
- ___ Potassium
- ___ Magnesium
- ___ Manganese
- ___ Molybdenum
- ___ Sodium
- ___ Nickel
- ___ Lead
- ___ Antimony
- ___ Selenium
- ___ Tin
- ___ Titanium
- ___ Thallium
- ___ Vanadium
- ___ Zinc

ORGANICS ANALYSIS

Gas Chromatography/ Mass Spectrometry

- ___ Priority Pollutants (VOC,BN/A,Pest/PCB)
- ___ Hazardous Substances (VOC,BN/A,Pest/PCB)
- ___ PPL Volatiles
- ___ HSL Volatiles
- ___ VO Library Search
- ___ PPL Base/Neutrals
- ___ HSL Base/Neutrals
- ___ BN Library Search
- ___ PPL Acids
- ___ HSL Acids
- ___ AL Library Search

Gas Chromatography

- ___ Priority Pollutants (VOC,Pest/PCB)
- ___ PPL Volatiles
- ___ PPL Pest/PCB
- ___ Benzene,Toluene, Xylenes (BTX)
- ___ FID Analysis of Pet Hydrocarbon Extract
- ___ NJDEP A-280 (inc VO/Pest/PCB)
- ___ USEPA Regulated VOs
- ___ USEPA Nonregulated VOs

ADDITIONAL ANALYSIS/INSTRUCTIONS:

QC Inc

CHAIN OF CUSTODY RECORD

Customer Gannett Fleming #

Address P O Box 1963

Harrisburg State PA Zip 17105

PSID #

LAB ID#	# OF CONTAINERS	DESCRIPTION OF SAMPLES
	3	½ gal plastic - TDS ½ gal clear glass - pet. hydrocarb. 1 qt. amber - TOC

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE

TIME	DATE

SAMPLE NUMBER	RELINQUISHED BY:	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
C-14B	Yasmin Snowberger	[illegible]	12 00	10-21-88	lab analysis

QC Inc
1205 INDUSTRIAL HIGHWAY
PO BOX 311
SOUTHAMPTON PA 18966

REQUEST FOR ANALYSIS - AQUEOUS SAMPLES

CLIENT: Gannett Fleming (Navy Erie) SAMPLE ID: C 146

SAMPLE MATRIX: X Groundwater __ Surface Water __ Drinking Water __ Other ____

SAMPLE DATE: 10 / 20 / 88 DATE SUBMITTED TO LAB: 10 / 21 / 88

CONTACT NAME JOHN CATANIA PHONE (717) 763-7211

REPORT FORMAT __ STANDARD X TIER I __ TIER II __ OTHER: ____

CHAIN-OF-CUSTODY: X YES __ NO RESULTS DUE: __/__/__

GENERAL ANALYSIS

- __ Acidity
- __ Alkalinity
- __ BOD - 5 day
- __ BOD - soluble
- __ Bromide
- __ Carbon, Total
- __ Carbon, Inorganic
- X Carbon, Organic
- __ Carbon Dioxide
- __ Chloride
- __ Chlorine Demand
- __ Chlorine, Residual
- __ Chloramines
- __ Color
- __ Conductivity
- __ Cyanide, Amenable
- __ Cyanide, Total
- __ Fluoride
- __ Hardness, Total
- __ Hardness, Calcium
- __ Nitrogen, Ammonia
- __ Nitrogen, NO2+NO3
- __ Nitrogen, Nitrate
- __ Nitrogen, Nitrite
- __ Nitrogen, Kjeldahl
- __ Odor, TON
- __ Oil and Grease
- X Petroleum Hydrocarbons
- __ pH
- __ Phenols, Total
- __ Phosphate, Total
- __ Phosphate, Total Soluble
- __ Phosphate, Ortho
- __ Phosphorus, Total
- __ Silica
- __ Solids, Total
- X Solids, Dissolved
- __ Solids, Suspended
- __ Solids, Settleable
- __ Sulfate
- __ Sulfide
- __ Sulfite
- __ Surfactants (ABS/LAS)
- __ Total Organic Halides (TOX)
- __ Turbidity

Also Field Blank

Also Field Blank

METALS ANALYSIS

- __ Atomic Absorption
- __ ICP

- __ Total
- __ DISSOLVED

- __ Priority Pollutant List (13)
- __ Hazardous Substance List (24)
- __ RCRA (8)

- __ Silver
- __ Aluminum
- __ Arsenic
- __ Boron
- __ Barium
- __ Beryllium
- __ Bismuth
- __ Calcium
- __ Cadmium
- __ Cobalt
- __ Chromium, Total
- __ Chromium, Hexavalent
- __ Copper
- __ Iron
- __ Mercury
- __ Potassium
- __ Magnesium
- __ Manganese
- __ Molybdenum
- __ Sodium
- __ Nickel
- __ Lead
- __ Antimony
- __ Selenium
- __ Tin
- __ Titanium
- __ Thallium
- __ Vanadium
- __ Zinc

ORGANICS ANALYSIS

Gas Chromatography/ Mass Spectrometry

- __ Priority Pollutants (VOC,BN/A,Pest/PCB)
- __ Hazardous Substances (VOC,BN/A,Pest/PCB)
- __ PPL Volatiles
- __ HSL Volatiles
- __ VO Library Search
- __ PPL Base/Neutrals
- __ HSL Base/Neutrals
- __ BN Library Search
- __ PPL Acids
- __ HSL Acids
- __ AE Library Search

Gas Chromatography

- __ Priority Pollutants (VOC,Pest/PCB)
- __ PPL Volatiles
- __ PPL Pest/PCB
- __ Benzene,Toluene, Xylenes (BTX)
- __ FID Analysis of Pet Hydrocarbon Extract
- __ NJDEP A-280 (inc VO/Pest/PCB)
- __ USEPA Regulated VOs
- __ USEPA Nonregulated VOs

ADDITIONAL ANALYSIS/INSTRUCTIONS:

QC Inc

CHAIN OF CUSTODY RECORD

Customer Cunnett Fleming #

Address [illegible]

[illegible] State PA Zip 17105

PSID #

LAB ID#	# OF CONTAINERS	DESCRIPTION OF SAMPLES
	3 Total 5 2 FB (Field Blanks)	½ gal plastic - TDS ½ gal clear glass - pet. hydrocarbon 1 qt. amber - TOC

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE

TIME	DATE

SAMPLE NUMBER	RELINQUISHED BY.	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
[illegible]	[illegible]	[illegible]	12:00	10-21-88	Lab analyses
Field Blank A	-TOC				
Field Blank B	-Pet Hyd				

QC Inc

[illegible] HIGHWAY
[illegible]
SOUTHAMPTON, PA [illegible]

REQUEST FOR ANALYSIS - AQUEOUS SAMPLES

CLIENT: Gannett Fleming (New York) SAMPLE ID: C-24A

SAMPLE MATRIX: X Groundwater ___ Surface Water ___ Drinking Water ___ Other ___

SAMPLE DATE: 10/21/88 DATE SUBMITTED TO LAB: 10/21/88

CONTACT NAME: JOHN LATSHA PHONE: (717) 763-1211

REPORT FORMAT: ___ STANDARD X TIER I ___ TIER II ___ OTHER: ___

CHAIN-OF-CUSTODY: X YES ___ NO RESULTS DUE: ___/___/___

GENERAL ANALYSIS

___ Acidity
___ Alkalinity
___ BOD - 5 day
___ BOD - soluble
___ Bromide
___ Carbon, Total
___ Carbon, Inorganic
X Carbon, Organic
___ Carbon Dioxide
___ Chloride
___ Chlorine Demand
___ Chlorine, Residual
___ Chloramines
___ Color
___ Conductivity
___ Cyanide, Amenable
___ Cyanide, Total
___ Fluoride
___ Hardness, Total
___ Hardness, Calcium
___ Nitrogen, Ammonia
___ Nitrogen, NO2+NO3
___ Nitrogen, Nitrate
___ Nitrogen, Nitrite
___ Nitrogen, Kjeldahl
___ Odor, TON
___ Oil and Grease
X Petroleum Hydrocarbons
___ pH
___ Phenols, Total
___ Phosphate, Total
___ Phosphate, Total Soluble
___ Phosphate, Ortho
___ Phosphorus, Total
___ Silica
___ Solids, Total
X Solids, Dissolved
___ Solids, Suspended
___ Solids, Settleable
___ Sulfate
___ Sulfide
___ Sulfite
___ Surfactants (AES/LAS)
___ Total Organic Halides (TOX)
___ Turbidity

METALS ANALYSIS

___ Atomic Absorption
___ ICP

___ TOTAL
___ DISSOLVED

___ Priority Pollutant List (13)
___ Hazardous Substance List (24)
___ RCRA (8)

___ Silver
___ Aluminum
___ Arsenic
___ Boron
___ Barium
___ Beryllium
___ Bismuth
___ Calcium
___ Cadmium
___ Cobalt
___ Chromium, Total
___ Chromium, Hexavalent
___ Copper
___ Iron
___ Mercury
___ Potassium
___ Magnesium
___ Manganese
___ Molybdenum
___ Sodium
___ Nickel
___ Lead
___ Antimony
___ Selenium
___ Tin
___ Titanium
___ Thallium
___ Vanadium
___ Zinc

ORGANICS ANALYSIS

Gas Chromatography/ Mass Spectrometry

___ Priority Pollutants (VOC,BN/A,Pest/PCB)

___ Hazardous Substances (VOC,BN/A,Pest/PCB)

___ PPL Volatiles
___ HSL Volatiles
___ VO Library Search
___ PPL Base/Neutrals
___ HSL Base/Neutrals
___ BN Library Search
___ PPL Acids
___ HSL Acids
___ AE Library Search

Gas Chromatography

___ Priority Pollutants (VOC,Pest/PCB)

___ PPL Volatiles

___ PPL Pest/PCB

___ Benzene,Toluene, Xylenes (BTX)

___ FID Analysis of Pet Hydrocarbon Extract

___ NJDEP A-286 (inc VO/Pest/PCB)

___ USEPA Regulated VOs

___ USEPA Nonregulated VOs

ADDITIONAL ANALYSIS/INSTRUCTIONS:

QC Inc

CHAIN OF CUSTODY RECORD

Customer Gannett Fleming #

Address P.O. Box 1963

Harrisburg State PA Zip 17105

PSID #

LAB ID#	# OF CONTAINERS	DESCRIPTION OF SAMPLES
	3	½ gal plastic - TDS ½ gal clear glass - pet hydrocarbon 1 qt. amber - TOC

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE

TIME	DATE

SAMPLE NUMBER	RELINQUISHED BY:	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
C-29A	Jasmin Snoeberger	HSHeng	12:00	10-21-88	Lab analyses

GANNETT FLEMING

ATTACHMENT C

Ground Water Analysis Forms

Forms VWX-015 (A,B)

26029.000
YMSPS003.000

4/83

DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SW ID NO.:

LAB NAME: QC Inc.

R (1) NJPDES NO. NJ 0023540 (2–8)

WELL PERMIT NO. 29-20668-5 (9–16)

SAMPLE DATE YR. MO. DAY: 881020 (17–22)

NJ LAB CERT. NO. 77648 (23–27)

WQM USE (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 1108 18 (MO. YR.) TO 1108 19 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

Owners Well No. C-14-A (C-14-4)

SAMPLING MONTHS

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
	x			x			x			x		Elevation of top of well casing with cap off (as specified in well completion report)	feet MSL: to nearest .01		104.41	
	x			x			x			x		Elevation of original ground level (as specified in well completion report)	feet MSL: to nearest .01		104.41	
	x			x			x			x		Depth to water table from top of casing prior to sampling with cap off	feet: to nearest .01	82546	10.00	
	x			x			x			x		Depth to water table from original ground level prior to sampling	feet: to nearest .01	72019	10.00	
												Arsenic, Dissolved	UG/L as As	01000		
												Barium, Dissolved	UG/L as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	MG/L	00310		
												Cadmium, Dissolved	UG/L as Cd	01025		
												Chloride, Dissolved	UG/L as Cl	82295		
												Chromium, Dissolved	UG/L as Cr	01030		
												Chromium, Dissolved, Hexavalent	UG/L as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	MG/L	00341		
												Coliform Group	N/100 ML	74056		
												Color	Pt - Co	00080		
												Copper, Dissolved	UG/L as Cu	01040		
												Cyanide, Total	MG/L as CN	00720		
												Endrin, Total	UG/L	39390		
												Fluoride, Dissolved	MG/L as F	00950		
												Gross Alpha, Dissolved	Pc/L	01503		
												Gross Beta, Dissolved	Pc/L	03503		
												Hardness, Total as $CaCO_3$	MG/L	00900		
												Iron, Dissolved	UG/L as Fe	01046		
	x						x					Lead, Dissolved	UG/L as Pb	01049		
												Lindane, Total	UG/L	39782		
												Manganese, Dissolved	UG/L	01056		
												Mercury, Dissolved	UG/L	71890		

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 42 55 68 — 33 34 46 47 59 60 72 73 — 40 41 53 54 66 67 79 80

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SWID NO:

LAB NAME: QC Inc.

S | NJPDES NO. NJ 0023540 | WELL PERMIT NO. 29-20668-5 | SAMPLE DATE YR. MO. DAY 881929 | NJ LAB CERT. NO. 77166 | WQM USE

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 1088 (MO. YR.) TO 1089 (MO. YR.)

77648

Owner's Well No. C-14-A

(C-14-4)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS (Jan, Feb, Mar, Apr, May, June, July, Aug, Sept, Oct, Nov, Dec)	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
	Methoxychlor, Total	UG/L	39480		
	Methylene Blue Active Substances	MG/L	38260		
	Nitrogen, Ammonia, Dissolved $NH_3 + NH_4$ as N	MG/L as N	00608		
	Nitrogen, Nitrate, Dissolved	MG/L as N	00618		
	Odor	T.O.N.	00085		
x x x x	pH	Standard Units	00400	4.58	
	Phenols, Total Recoverable	UG/L	32730		
	Radium 226, Dissolved	Pc/L	09503		
	Radium 228, Dissolved	Pc/L	81366		
	Selenium, Dissolved	UG/L	01145		
	Silver, Dissolved	UG/L	01075		
	Sodium, Dissolved	MG/L	00930		
	Sulfate, Dissolved (as SO_4)	MG/L	00946		
x x x x	Total Dissolved Solids (TDS)	PPM	70300	150.	
x x x x	Total Organic Carbon (TOC)	PPM	00680	2.0	
	Total Organic Halogen (TOX)	UG/L	70353		
	Toxaphene	UG/L	39400		
	Turbidity	NTU	00076		
	Zinc, Dissolved	UG/L	01090		
	2, 4–D, Total	UG/L	39370		
	2, 4, 5–TP, Total	UG/L	39045		
x x x x	Petroleum Hydrocarbons	PPM	45501	<0.5K	

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 42 55 68 | 33 34 46 47 59 60 72 73 | 40 41 53 54 66 67 79 80

4-82

DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SW ID NO.:

LAB NAME: QC Inc.

R (1) NJPDES NO. NJ 0 0 2 3 5 4 0 (2–8) WELL PERMIT NO. 2 9 - 2 0 6 6 6 - 9 (9–16) SAMPLE DATE YR. MO. DAY 8 8 1 0 2 0 (17–22) NJ LAB CERT. NO. 7 7 1 6 6 (23–27) WQM USE (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 1 0 8 8 (MO. YR.) TO 1 0 8 9 (MO. YR.)

77648

SUBMIT WITH SIGNED T-VWX-014

Owners Well No. C-14-B

(C-14-1)

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
	x			x			x			x		Elevation of top of well casing with cap off (as specified in well completion report)	feet MSL: to nearest .01		110.71	
	x			x			x			x		Elevation of original ground level (as specified in well completion report)	feet MSL: to nearest .01		108.88	
	x			x			x			x		Depth to water table from top of casing prior to sampling with cap off	feet: to nearest .01	82546	15.83	
	x			x			x			x		Depth to water table from original ground level prior to sampling	feet: to nearest .01	72019	14.00	
												Arsenic, Dissolved	UG/L as As	01000		
												Barium, Dissolved	UG/L as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	MG/L	00310		
												Cadmium, Dissolved	UG/L as Cd	01025		
												Chloride, Dissolved	UG/L as Cl	82295		
												Chromium, Dissolved	UG/L as Cr	01030		
												Chromium, Dissolved, Hexavalent	UG/L as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	MG/L	00341		
												Coliform Group	N/100 ML	74056		
												Color	Pt - Co	00080		
												Copper, Dissolved	UG/L as Cu	01040		
												Cyanide, Total	MG/L as CN	00720		
												Endrin, Total	UG/L	39390		
												Fluoride, Dissolved	MG/L as F	00950		
												Gross Alpha, Dissolved	Pc/L	01503		
												Gross Beta, Dissolved	Pc/L	03503		
												Hardness, Total as $CaCO_3$	MG/L	00900		
												Iron, Dissolved	UG/L as Fe	01046		
	x					x						Lead, Dissolved	UG/L as Pb	01049		
												Lindane, Total	UG/L	39782		
												Manganese, Dissolved	UG/L	01056		
												Mercury, Dissolved	UG/L	71890		

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 33 34 40 41
42 46 47 53 54
55 59 60 66 67
68 72 73 79 80

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SW ID NO.:

LAB NAME: QC Inc.

	NJPDES NO	WELL PERMIT NO	SAMPLE DATE YR. MO DAY	NJ LAB CERT. NO.	WQM USE
S	NJ 0023540	29-20666-9	881020	77166	

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 88 (MO. YR.) TO 03 89 (MO. YR.)

Owner's Well No. C-14-B

(C-14-1)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
												Methoxychlor, Total	UG/L	39480		
												Methylene Blue Active Substances	MG/L	38260		
												Nitrogen, Ammonia, Dissolved $NH_3 + NH_4$ as N	MG/L as N	00608		
												Nitrogen, Nitrate, Dissolved	MG/L as N	00618		
												Odor	T.O.N.	00085		
x			x				x				x	pH	Standard Units	00400	5.22	
												Phenols, Total Recoverable	UG/L	32730		
												Radium 226, Dissolved	Pc/L	09503		
												Radium 228, Dissolved	Pc/L	81366		
												Selenium, Dissolved	UG/L	01145		
												Silver, Dissolved	UG/L	01075		
												Sodium, Dissolved	MG/L	00930		
												Sulfate, Dissolved (as SO_4)	MG/L	00946		
x			x				x				x	Total Dissolved Solids (TDS)	PPM	70300	130.	
x			x				x				x	Total Organic Carbon (TOC)	PPM	00680	4.5	
												Total Organic Halogen (TOX)	UG/L	70353		
												Toxaphene	UG/L	39400		
												Turbidity	NTU	00076		
												Zinc, Dissolved	UG/L	01090		
												2, 4–D, Total	UG/L	39370		
												2, 4, 5–TP, Total	UG/L	39045		
x			x				x				x	Petroleum Hydrocarbons	PPM	45501	<0.5K	

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 42 55 68 | 33 34 46 47 59 60 72 73 | 40 41 53 54 66 67 79 80

DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SW ID NO.:

LAB NAME: QC Inc.

R (1)

NJPDES NO.: NJ 0 0 2 3 5 4 0 (2–8)

WELL PERMIT NO.: 2 9 - 2 0 6 6 9 - 3 (9–16)

SAMPLE DATE: YR. 8 8 | MO. 1 0 | DAY 2 0 (17–22)

NJ LAB CERT. NO.: 7 7 1 6 6 (23–27)

WQM USE (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 88 (MO. YR.) TO 10 89 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

Owners Well No. C-14-C (C-14-2)

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
	x			x			x			x		Elevation of top of well casing with cap off (as specified in well completion report)	feet MSL: to nearest .01		108.30	
	x			x			x			x		Elevation of original ground level (as specified in well completion report)	feet MSL: to nearest .01		106.13	
	x			x			x			x		Depth to water table from top of casing prior to sampling with cap off	feet: to nearest .01	82546	14.17	
	x			x			x			x		Depth to water table from original ground level prior to sampling	feet: to nearest .01	72019	12.00	
												Arsenic, Dissolved	UG/L as As	01000		
												Barium, Dissolved	UG/L as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	MG/L	00310		
												Cadmium, Dissolved	UG/L as Cd	01026		
												Chloride, Dissolved	UG/L as Cl	82295		
												Chromium, Dissolved	UG/L as Cr	01030		
												Chromium, Dissolved, Hexavalent	UG/L as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	MG/L	00341		
												Coliform Group	N/100 ML	74056		
												Color	Pt - Co	00080		
												Copper, Dissolved	UG/L as Cu	01040		
												Cyanide, Total	MG/L as CN	00720		
												Endrin, Total	UG/L	39390		
												Fluoride, Dissolved	MG/L as F	00950		
												Gross Alpha, Dissolved	Pc/L	01503		
												Gross Beta, Dissolved	Pc/L	03503		
												Hardness, Total as $CaCO_3$	MG/L	00900		
												Iron, Dissolved	UG/L as Fe	01046		
	x					x						Lead, Dissolved	UG/L as Pb	01049		
												Lindane, Total	UG/L	39782		
												Manganese, Dissolved	UG/L	01056		
												Mercury, Dissolved	UG/L	71890		

VALUE CODING RULES AND REMARK CODES ON REVERSE

39 42 55 68 | 33 34 46 47 59 60 72 73 | 40 41 53 54 66 67 79 80

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SW ID NO.:

LAB NAME: QC Inc.

S

NJPDES NO.: NJ 0023540

WELL PERMIT NO.: 29-20669-3

SAMPLE DATE YR. MO. DAY: 88 10 20

NJ LAB CERT. NO.: 77166

WQM USE

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 88 (MO. YR.) TO 013 89 (MO. YR.)

Owner's Well No. C-14-C

SUBMIT WITH SIGNED T-VWX-014

(C-14-2)

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
												Methoxychlor, Total	UG/L	39480		
												Methylene Blue Active Substances	MG/L	38260		
												Nitrogen, Ammonia, Dissolved $NH_3 + NH_4$ as N	MG/L as N	00608		
												Nitrogen, Nitrate Dissolved	MG/L as N	00618		
												Odor	T.O.N.	00085		
x			x			x				x		pH	Standard Units	00400	5.08	
												Phenols, Total Recoverable	UG/L	32730		
												Radium 226, Dissolved	Pc/L	09503		
												Radium 228, Dissolved	Pc/L	81366		
												Selenium, Dissolved	UG/L	01145		
												Silver, Dissolved	UG/L	01075		
												Sodium, Dissolved	MG/L	00930		
												Sulfate, Dissolved (as SO_4)	MG/L	00946		
x			x			x				x		Total Dissolved Solids (TDS)	PPM	70300	130.	
x			x			x				x		Total Organic Carbon (TOC)	PPM	00680	10.	
												Total Organic Halogen (TOX)	UG/L	70353		
												Toxaphene	UG/L	39400		
												Turbidity	NTU	00076		
												Zinc, Dissolved	UG/L	01090		
												2, 4–D, Total	UG/L	39370		
												2, 4, 5–TP, Total	UG/L	39045		
x			x			x				x		Petroleum Hydrocarbons	PPM	45501	<0.5K	

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 32 33 34 40 41 46 47 53 54 59 60 66 67 72 73 79 80

DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

LAB NAME:

SW ID NO.:

R (1) NJPDES NO. NJ 0023540 (2–8)

WELL PERMIT NO. 29-20667-7 (9–16)

SAMPLE DATE YR. MO. DAY: 881021 (17–22)

NJ LAB CERT. NO.: 77166 (23–27)

WQM USE (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 1088 (MO. YR.) TO 1089 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

Owners Well N . C-29-A (C-14-3)

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
	x			x			x			x		Elevation of top of well casing with cap off (as specified in well completion report)	feet MSL: to nearest .01		108.23	
	x			x			x			x		Elevation of original ground level (as specified in well completion report)	feet MSL: to nearest .01		104.90	
	x			x			x			x		Depth to water table from top of casing prior to sampling with cap off	feet: to nearest .01	82546	12.17	
	x			x			x			x		Depth to water table from original ground level prior to sampling	feet: to nearest .01	72019	8.84	
												Arsenic, Dissolved	UG/L as As	01000		
												Barium, Dissolved	UG/L as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	MG/L	00310		
												Cadmium, Dissolved	UG/L as Cd	01025		
												Chloride, Dissolved	UG/L as Cl	82285		
												Chromium, Dissolved	UG/L as Cr	01030		
												Chromium, Dissolved, Hexavalent	UG/L as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	MG/L	00341		
												Coliform Group	N/100 ML	74056		
												Color	Pt - Co	00080		
												Copper, Dissolved	UG/L as Cu	01040		
												Cyanide, Total	MG/L as CN	00720		
												Endrin, Total	UG/L	39390		
												Fluoride, Dissolved	MG/L as F	00950		
												Gross Alpha, Dissolved	Pc/L	01503		
												Gross Beta, Dissolved	Pc/L	03503		
												Hardness, Total as $CaCO_3$	MG/L	00900		
												Iron, Dissolved	UG/L as Fe	01046		
	x					x						Lead, Dissolved	UG/L as Pb	01049		
												Lindane, Total	UG/L	39782		
												Manganese, Dissolved	UG/L	01056		
												Mercury, Dissolved	UG/L	71890		

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 42 55 68 | 33 34 46 47 50 60 73 73 | 40 41 53 54 66 67 79 80

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS – MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

FACILITY NAME: Naval Weapons Station Earle

SW ID NO:

LAB NAME: QC Inc.

S | NJPDES NO. NJ 0023540 | WELL PERMIT NO. 29-20667-7 | SAMPLE DATE YR. MO. DAY 881021 | NJ LAB CERT. NO. 77166 | WQM USE

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 1088 (MO. YR.) TO 0389 (MO. YR.)

Owner's Well No. C-29-A (C-14-3)

SUBMIT WITH SIGNED T-VWX-014

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
												Methoxychlor, Total	UG/L	39480		
												Methylene Blue Active Substances	MG/L	38260		
												Nitrogen, Ammonia, Dissolved $NH_3 + NH_4$ as N	MG/L as N	00608		
												Nitrogen, Nitrate Dissolved	MG/L as N	00618		
												Odor	T.O.N.	00085		
x			x				x				x	pH	Standard Units	00400	4.44	
												Phenols, Total Recoverable	UG/L	32730		
												Radium 226, Dissolved	Pc/L	09503		
												Radium 228, Dissolved	Pc/L	81366		
												Selenium, Dissolved	UG/L	01145		
												Silver, Dissolved	UG/L	01075		
												Sodium, Dissolved	MG/L	00930		
												Sulfate, Dissolved (as SO_4)	MG/L	00946		
x			x				x				x	Total Dissolved Solids (TDS)	PPM	70300	170.	
x			x				x				x	Total Organic Carbon (TOC)	PPM	00680	2.3	
												Total Organic Halogen (TOX)	UG/L	70353		
												Toxaphene	UG/L	39400		
												Turbidity	NTU	00076		
												Zinc, Dissolved	UG/L	01090		
												2, 4–D, Total	UG/L	39370		
												2, 4, 5–TP, Total	UG/L	39045		
x			x				x				x	Petroleum Hydrocarbons	PPM	45501	<0.5K	

VALUE CODING RULES AND REMARK CODES ON REVERSE

29 42 55 68 | 33 34 46 47 59 60 72 73 | 40 41 53 54 66 67 79 80