

**RESULTS OF MONITORING WELL INSTALLATION  
and  
GROUNDWATER SAMPLING  
MASPETH SUBSTATION  
QUEENS, NEW YORK**

Prepared for

Consolidated Edison of New York  
New York, New York

Prepared by

CASWELL, EICHLER & HILL, INC.  
Parsippany, New Jersey

March 1997

**RESULTS OF MONITORING WELL INSTALLATION  
and  
GROUNDWATER SAMPLING  
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## 1.0 INTRODUCTION

The former Maspeth substation is located at 57-77 Rust Street in Queens, N.Y. The site is currently occupied by Encore Tire, an automotive tire recapping company. Structures on-site include a brick building which is the current manufacturing facility and a fenced and gated parking lot consisting of concrete pads and bluestone. Figure 1 shows the site location. The pads underlie the former locations of transformers that were on-site during the period of time that the facility was a substation. Over the lifetime of the substation, there were discharges of PCB containing oils. As part of the remediation process, Con Ed excavated soil on-site in those areas determined to have been impacted by PCBs to depths ranging from several feet in the area near Rust Street to greater than ten feet in the area of the 58<sup>th</sup> Street entrance. The areas of excavated soil were then backfilled with clean fill. The purpose of this study was to address concerns of the New York State Department of Environmental Conservation (NYSDEC) of possible residual PCB impact to groundwater. Three monitoring wells were to be drilled to a depth of twenty feet below land surface (bls) taking continuous two foot split spoon samples from 10 feet to 20 feet bls to characterize subsurface soil characteristics. The wells would be developed by a slow-purge method, and then sampled for PCBs in groundwater (detection limit of 0.065 ug/L) utilizing a low-flow sampling method. Finally, groundwater flow direction would be determined based upon water levels measured in the completed wells.

## 2.0 WORK PERFORMED

### Monitoring Well Installation

The work was performed under Purchase Order No. 615464. On December 3, 1996, CEH-JW met on-site with representatives of Aquifer Drilling and Testing (ADT), the drilling company contracted to do the monitoring well drilling and installation. Drilling began utilizing 4 ¼ inch hollow stem augers (HSAs). The result of this was:

- Borings were augered to refusal at ten feet bls twice at the MW-101 location (see Figure 2). Teeth were broken off the lead auger requiring bit replacement,
- An attempt was made to collect a split spoon from the 10 foot-12 foot interval bls resulting in a 0.25 foot advance for 100 blows,
- Borings were augered to refusal twice at ten feet bls at the MW-102 location.

At this point, it was apparent that the proposed drilling method (HSA) would not be suitable at the Maspeth site. In conversation between CEH-JW and Con Ed, it was determined that the drilling method would be changed to an air hammer method. No split spoon samples would be possible with this method but it was determined that monitoring well installation and groundwater sampling were more important than subsurface soil characterization. Work was halted for the day.

On December 5, 1996, CEH-JW and ADT returned to the site. Drilling began at MW-101 utilizing air hammer technique. The drill bit was advanced to 20 feet bls as was specified in the Project Scope of Work (SOW). The drill cuttings in the boring were cleared as much as possible with the air hammer and a 2 inch PVC well was installed. It was noted that these drill cuttings were relatively dry, suggesting that the water table may not have been encountered. The process was repeated at MW-102 with similar results although there was water in the returns at MW-102. Water levels were measured in MW-101 and MW-102 approximately 1 hour after completion of MW-102. Water level at MW-101 was measured at approximately 19.2 feet below the top of the pvc riser pipe (TOPVC). MW-102 was dry.

After discussion between CEH-JW and Con Ed, it was decided to pull the wells and redrill the borings to a depth of 28 feet to 30 feet bls and then install the wells. During this process, it became evident that there was a transition zone at approximately 25 feet to 26 feet bls from the dense bouldery till, encountered below the newly placed fill to a saturated sand. Exact depths and soil characteristics were impossible to determine due to the drilling technique. MW-101 and MW-102 were each drilled to 32 feet bls. This was due to the nature of the saturated sandy material in the bottom of the borings. When the drill head was removed, sand flowed upward into the borings. The bottom of the well screens in MW-101 and MW-102 were installed at 26 feet bls. Well construction logs are included as Appendix A. Upon completion of MW-101 and MW-102 work was halted for the day. CEH-JW and ADT returned to the site on December 12, 1996 to drill MW-103. Drilling was completed in a manner similar to the drilling of MW-101 and MW-102. The drill bit was advanced to 32 feet bls and then quickly pulled from the boring to allow installation of the well materials. After several attempts, the deepest that the well screen could be set was 18 feet bls. The well construction log is included in Appendix A. Road box installations were completed at all three monitoring wells and locking plugs were installed. Drill cuttings were left on-site in appropriately labeled 55 gallon drums.

### Well Development

Well development was performed over a period of a period of six mobilizations. This number of mobilizations was necessary because two of the three monitoring wells, MW-102 and MW-103, could not be properly developed.

Well development was begun on MW-101 using a Grundfos brand Redi-Flo pump, a type of pump specified in the SOW. Well development at MW-101 was relatively successful. Initial turbidity (as measured with a turbidity meter calibrated to a 0.02 NTU factory prepared standard) was greater than 200 NTUs (full scale). Final turbidity was 2.59 NTUs. At MW-102 and MW-103, development was not as successful. At both locations, particulate matter drawn into the pump intake caused repeated pump failure requiring frequent disassembly and wear plate replacement. Little water could be removed from the wells due to constant down-time. After discussion with Con-Ed, it was decided to develop the wells using Isco brand peristaltic pumps. These pumps pump at a

rate of one half gallon per minute (gpm) or less and are unaffected by particulates. Initial turbidity in MW-102 and MW-103 were greater than 200 NTUs. The lowest turbidity achieved at MW-102 during the development process was 88 NTUs. The value could not be duplicated on mobilizations subsequent to the one during which this reading was obtained. The water in MW-103 was never developed to a turbidity value below 200 NTUs. There is only approximately 2.5 feet of water in MW-103. This may be a contributing factor in the inability to develop MW-103. In addition, both MW-102 and MW-103 appear to have low hydraulic conductivities. The evidence is strictly empirical. No slug tests were performed on the wells on-site. However, it was observed during well development that MW-101 could pump one half gpm with only about two feet of drawdown. MW-102 and MW-103 went dry at the same pumping rate. This inability for water to move through the formation may have affected the effectiveness of well development. Purge water was left on-site in appropriately labeled 55 gallon drums.

### Water Quality Sampling

The groundwater samples were analyzed for PCBs only. As per the SOW, both filtered and unfiltered samples were submitted for laboratory analysis. The field blank and duplicate sample were not filtered prior to laboratory analysis. The samples collected from MW-101 and MW-102 were submitted to laboratory as filtered and unfiltered samples. A 0.45-micron filter was used to filter the samples in the field. Laboratory results of the groundwater samples and the field equipment blank are presented in Table 1.

As noted above, Only wells MW-101 and MW-102 were sampled as part of the SOW. The reason for this is that oil was found in MW-103 when it was measured for water level. Upon discovery of the oil, Con Ed was notified. Con Ed representatives Mr. Bharat Mukhi and Mr. Dean Scari came to the site. An attempt was made to measure the oil/water level in the well but was unsuccessful due to "blinding" of the probe by the oil. A sample of the oil/water mixture was collected using a Waterra brand inertial pump. Mr. Scari submitted this sample for analysis under separate chain of custody (COC).

Decon water was left on-site in 55 gallon drums. The containers were appropriately labeled and stored on-site. CEH delivered the samples to the laboratory on the day of sampling.

### **3.0 RESULTS**

The results of the laboratory analyses are presented in Table 1. PCBs were not detected in any of the groundwater samples. All results were reported as ND less than 0.05 ppb. Note that this reporting limit is below the Con Ed required detection limit of 0.065 ppb.

For QA/QC purposes, a field equipment blank and a duplicate sample were collected and analyzed. Both samples were analyzed for PCBs and the results were below the MDLs. The ND results for the field equipment blank indicate that the field decon procedure was

adequate for this sampling event. The ND results for the duplicate sample indicate that laboratory precision in the analysis of PCBs was adequate in this sampling event.

In summary, no regulatory limit was met or exceeded in either of the groundwater samples .

**TABLE 1**

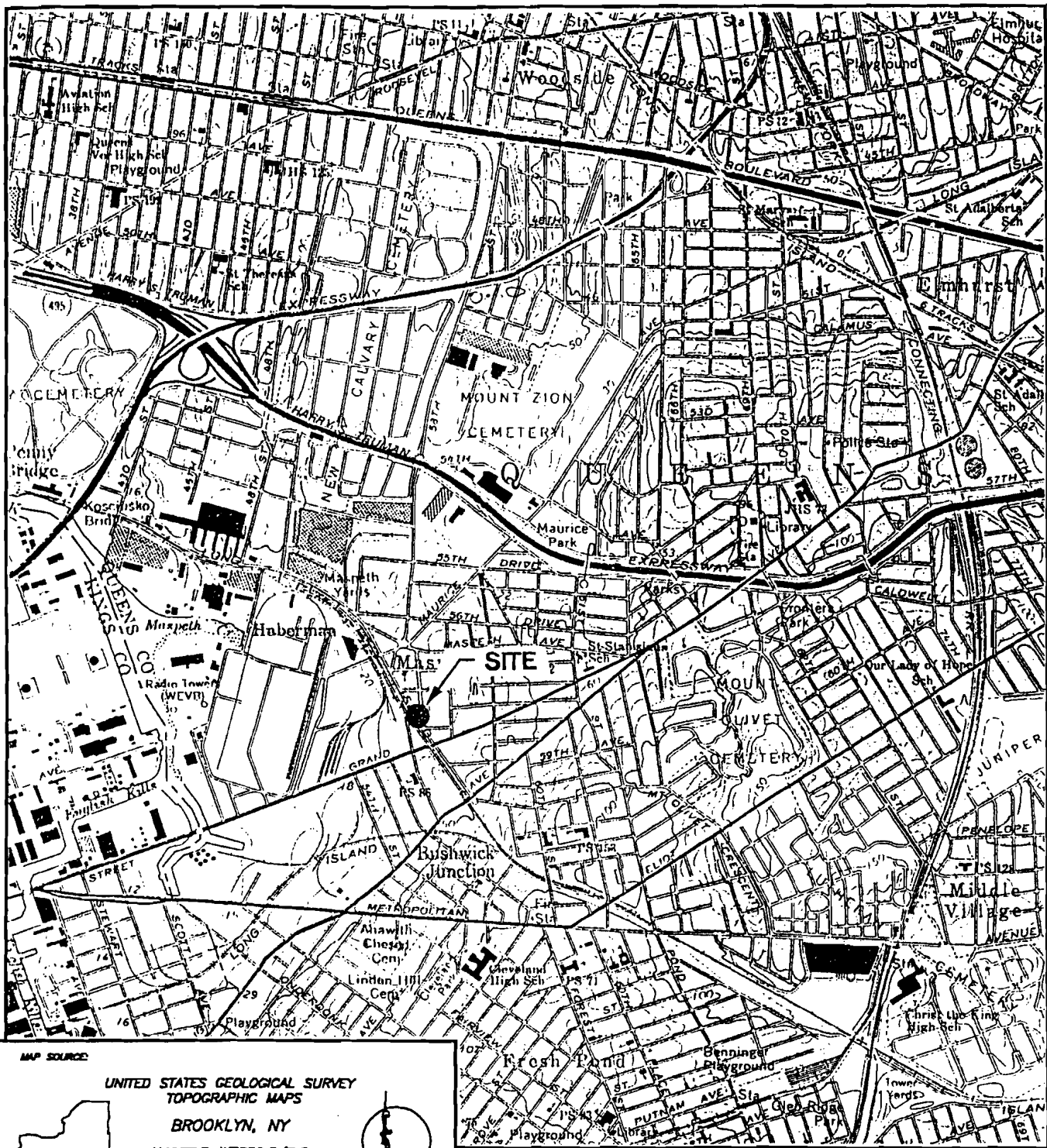
**Groundwater Samples Laboratory Analyses  
Consolidated Edison: Maspeth  
Sample Collection Date: 12-March-97**

Sample Location	PCBs (ug/L)
NYSDEC Discharge Standard	0.065
MW-101	<0.05
MW-101F	<0.05
MW-102	<0.05
MW-102F	<0.05
Dupe	<0.05
Field Equipment Blank	<0.05

NA: No analysis performed

NYSDEC discharge standards were obtained from Brian Mitchell NYSDEC Region II via telephone conversation on 1/13/97.

Field Equipment Blank, MW-101, MW-102, and Dupe are total (unfiltered) samples. MW-101F and MW-102F were filtered in the field with 0.45 micron filter.



MAP SOURCE

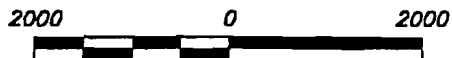
UNITED STATES GEOLOGICAL SURVEY  
TOPOGRAPHIC MAPS

BROOKLYN, NY

N4037.5-W7352.5/7.5

1967

PHOTOREVISED 1979



Scale in feet

## Caswell, Eichler & Hill, Inc.

a Jacques Whitford Company

DRAWING TITLE

SITE LOCATION MAP

CONED MASPETH SUBSTATION

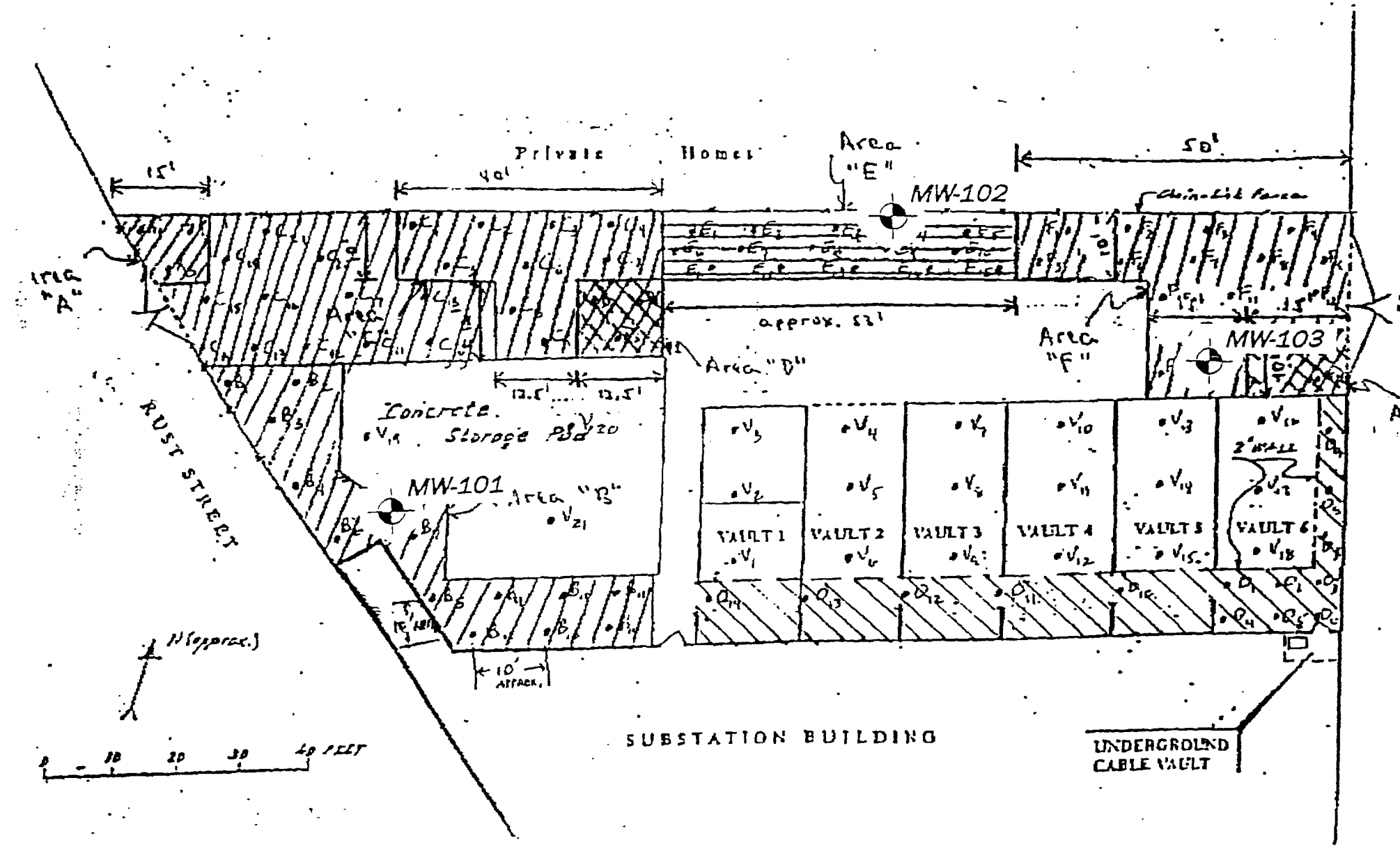
DATE PREPARED:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
3-25-97	BPB	BSB	BPB	DBH
REVISION DATE:	REVISION NO.:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
PROJECT NAME/FILE NAME:		PROJECT NUMBER/PHASE:	SCALE:	PREPARED FOR:
MASPETH/ALOCUS1		6096280/1200	1:24000	CON EDISON OF NY

FIGURE NO.

1




# MASPETH SUBSTATION



Legend

 MW-101 MONITORING WELL LOCATION

					<b>Caswell, Eichler &amp; Hill, Inc.</b>								
					a Jacques Whitford Company					DRAWING TITLE:			
DATE PREPARED: 3-25-97		DESIGNED BY: BFB		DRAWN BY: BSB		CHECKED BY: BFB		REVIEWED BY: DBH			SITE PLAN		
REVISION DATE:		REVISION NO:		DRAWN BY:		CHECKED BY:		REVIEWED BY:			CONED MASPETH SUBSTATION		
PROJECT NAME/TITLE NAME: MASPETH/BSITEPLAN				PROJECT NUMBER/PHASE: 6096280/1200				SCALE: AS SHOWN		PREPARED FOR: CON EDISON OF NY			FIGURE NO.

APPENDIX A

APPENDIX A

Project CON ED MASPETH

Boring # MW-101

Client Consolidated Edison of N.Y.

Sheet 1 of 2

Contractor ADT

Date Begun 12/5/96

Overburden Drilled 32'

Method AIR HAMMER

Casing Size

Completed 12/5/96

Rock Drilled

Ground Elevation

PID

Protection Level D

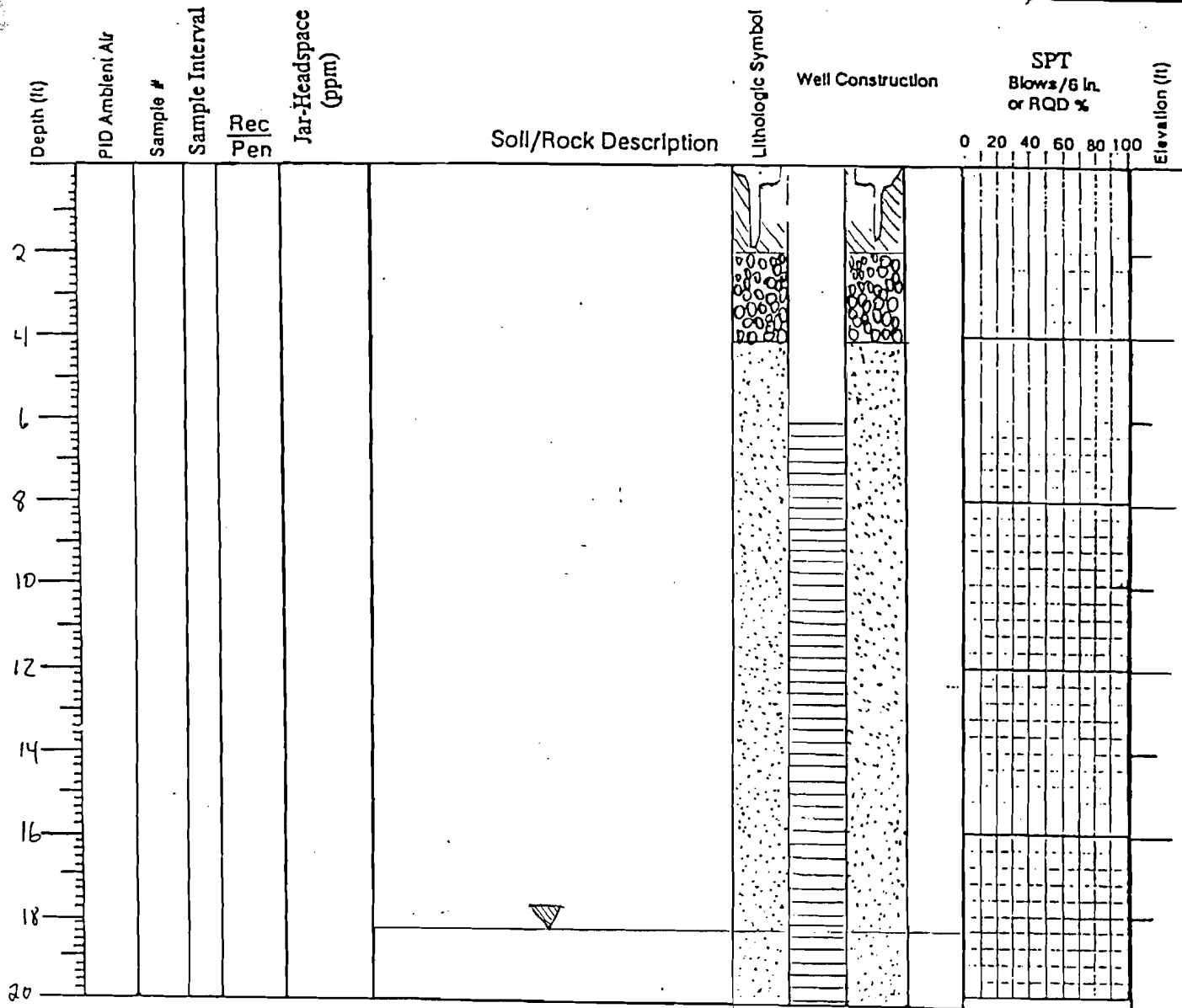
Below Ground

Logged By B. BLINE

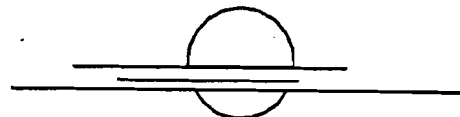
Checked By

Date

Site MASPETH, QUEENS



NOTES:  
 WELL CONSTRUCTED WITH 20' LONG 2" DIAMETER  
 10 SLOT PVC WELL SCREEN AND SOLID 2" PVC  
 RISER  
 FILTER SAND 26.0' BLS TO 4.0' BLS  
 BENTONITE SEAL 4.0' BLS TO 2.0' BLS  
 CEMENT GROUT 2.0' BLS TO SURFACE  
 FLUSH MOUNT ROAD BOX CEMENT  
 GROUTED IN PLACE AT SURFACE



CEH

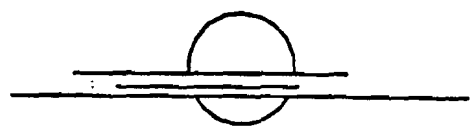
CASWELL, EICHLER & HILL, INC.  
 GEOLOGY HYDROGEOLOGY GEOPHYSICS ENGINEERING

CEH SOIL BORING/WELL CONSTRUCTION LOG

Project CONED MASPETH			Boring # MW-101	
Client CONSOLIDATED EDISON OF NY			Sheet 2 of 2	
Contractor ATD		Date Begun 12/5/96	Overburden Drilled 32'	
Method AIR HAMMER	Casing Size	Completed 12/5/96	Rock Drilled	
Ground Elevation	PID	Protection Level D	Below Ground	
Logged By B. Blaine	Checked By	Date	Site MASPETH, QUEENS	

Depth (ft)	PID Ambient Air	Sample #	Sample Interval	Rec Pen	Jar-Headspace (ppm)	Soil/Rock Description	Lithologic Symbol	Well Construction	SPT Blows/6 in. or RQD %					Elevation (ft)	
									0	20	40	60	80		100
20															
22															
24															
26						BOTTOM OF WELL									
28															
30															
32						BOTTOM OF BORING									
34															
36															
38															

NOTES:



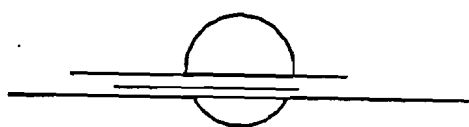
CEH

CASWELL, EICHLER & HILL, INC.  
 GEOLOGY HYDROGEOLOGY GEOPHYSICS ENGINEERING

Project CON ED MASPETH			Boring # MW-102
Client Consolidated Edison of N.Y.			Sheet 1 of 2
Contractor ADT	Date Begun 12/5/96	Overburden Drilled 32'	
Method AIR HAMMER	Casing Size	Completed 12/5/96	Rock Drilled
Ground Elevation	PID	Protection Level D	∇ Below Ground
Logged By B. BLINE	Checked By	Date	Site MASPETH, QUEENS

Depth (ft)	PID Ambient Air	Sample #	Sample Interval	Rec Pen	Jar-Headspace (ppm)	Soil/Rock Description	Lithologic Symbol	Well Construction	SPT					Elevation (ft)	
									Blows/6 In.	or RQD %					
0									0	20	40	60	80	100	
2															
4															
6															
8															
10															
12															
14															
16															
18															
20															

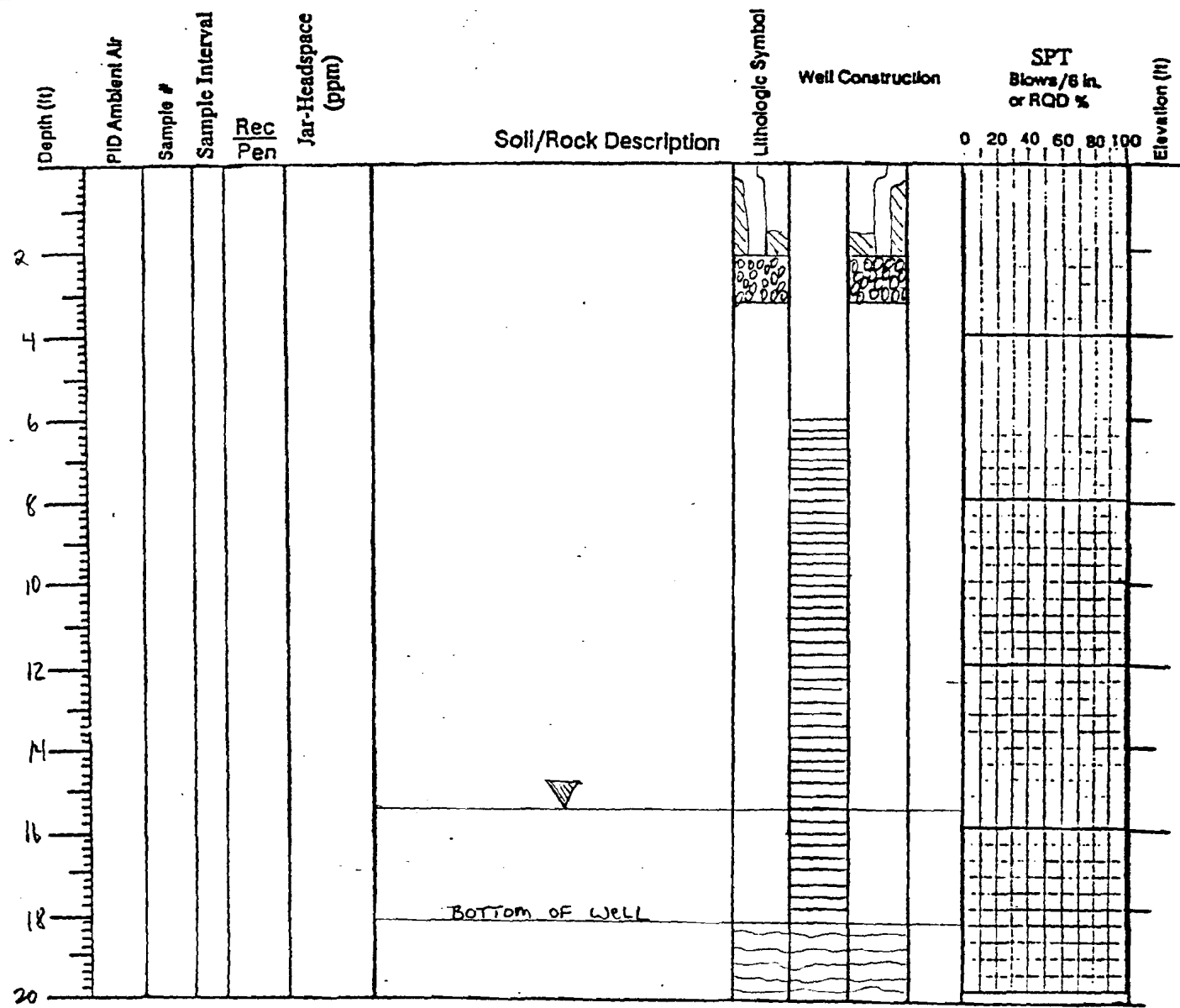
NOTES:  
WELL CONSTRUCTED WITH 20' LONG 2" DIAMETER  
10 SLOT PVC WELL SCREEN AND SOLID 2" PVC  
RISER  
FILTER SAND 26.0' BLS TO 4.0' BLS  
BENTONITE SEAL 4.0' BLS TO 3.0' BLS  
CEMENT GROUT 3.0' BLS TO SURFACE  
FLUSH MOUNT ROAD BOX CEMENT  
GROUTED IN PLACE AT SURFACE



CEH

CASWELL, EICHLER & HILL, INC.  
GEOLOGY HYDROGEOLOGY GEOPHYSICS ENGINEERING

Project <b>CON ED MASPETH</b>			Boring # <b>MW-103</b>
Client <b>CONSOLIDATED EDISON OF NY</b>			Sheet <b>1</b> of <b>2</b>
Contractor <b>ADT</b>		Date Begun <b>12/6/96</b>	Overburden Drilled
Method <b>AIR HAMMER</b>	Casing Size	Completed <b>12/6/96</b>	Rock Drilled
Ground Elevation	PID	Protection Level <b>D</b>	$\Sigma$ Below Ground
Logged By <b>B. BLINE</b>	Checked By	Date	Site



NOTES:  
 WELL CONSTRUCTED WITH 12' LONG 2" DIAMETER  
 10 SLOT PVC WELL SCREEN WITH SOLID 2" PVC RISER  
 FILTER SAND 18.0' BLS TO 3.0' BLS  
 BENTONITE SEAL 3.0' BLS TO 2.0' BLS  
 CEMENT GROUT 2.0' BLS TO SURFACE  
 FLUSH MOUNT ROAD BOX CEMENT  
 GROUTED IN PLACE AT SURFACE



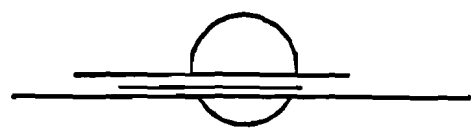
**CEH**

**CASWELL, EICHLER & HILL, INC.**  
**GEOLOGY HYDROGEOLOGY GEOPHYSICS ENGINEERING**

Project <b>CON ED MASPETH</b>			Boring # <b>MW-103</b>	
Client <b>CONSOLIDATED EDISON OF NY</b>			Sheet <b>2 of 2</b>	
Contractor <b>ADT</b>		Date Begun <b>12/6/96</b>	Overburden Drilled <b>32'</b>	
Method <b>AIR HAMMER</b>	Casing Size	Completed <b>12/6/96</b>	Rock Drilled	
Ground Elevation	PID	Protection Level <b>D</b>	$\Sigma$ Below Ground	
Logged By <b>B. BLINE</b>	Checked By	Date	Site	

Depth (ft)	PID Ambient Air	Sample #	Sample Interval	Rec Pen	Jar-Headspace (ppm)	Soil/Rock Description	Lithologic Symbol	Well Construction	SPT Blows/6 in. or RQD %					Elevation (ft)	
									0	20	40	60	80		100
20															
22															
24															
26															
28															
30															
32						<b>BOTTOM OF BORING</b>									
34															
36															
38															
40															

NOTES:



**CEH**

**CASWELL, EICHLER & HILL, INC.**  
**GEOLOGY HYDROGEOLOGY GEOPHYSICS ENGINEERING**





MARCH 20, 1997

CEH  
27 CONGRESS STREET  
PORTSMOUTH, NH 03802  
Attn: DAVID HILL

Analytical Report: 97-03-0224

Project: CON ED MASPETH

This technical report contains the analytical results of six (6) samples submitted to Analab on March 13, 1997. The following analyses were requested:

PCB (6)

Respectfully submitted,



Robert Hulit  
Manager of Laboratory Services

Elizabeth A. Panico  
VP of Laboratory Operations

RH/mv


**LABORATORY DELIVERABLES CHECKLIST**

97-03-224

**THIS FORM HAS BEEN COMPLETED BY THE LABORATORY AND IS AVAILABLE TO THE ENVIRONMENTAL CONSULTANT TO ACCOMPANY ALL DATA SUBMISSIONS**

The following laboratory deliverables are included in this Analytical Report. Any deviations from the accepted methodology and procedures, or performance values outside acceptable ranges are summarized in the Non-Conformance Summary.

- I. Report Cover Page, Laboratory Certification and Field Sample to Lab Sample ID Cross Reference ✓
- II. Table of Contents ✓
- III. Chain of Custody Documents ✓
- IV. Methodology Summaries ✓
- V. Laboratory Chronicle and Hold Time Checks ✓
- VI. Non-Conformance Summary ✓
- VII. Tabulated Analytical Results ✓
- VIII. Initial and Continuing Calibration Information N/A
- IX. Tune and Internal Standard Area Summaries (GC/MS) N/A
- X. Quality Control Summary Reports ✓
- XI. Surrogate Recovery Summary ✓
- XII. Raw Data Chromatograms, Blank, QCs and Samples N/A
- XIII. Subsidiary Information (Subcontract if applicable) N/A

  
Laboratory Manager or QA/QC Coordinator

3/20/97  
Date

# ANALab inc.

205 Campus Plaza 1, Raritan Center, Edison, NJ 08837. Tel: (908) 225-4111. Fax: (908) 225-4110

## ANALYTICAL DATA REPORT PACKAGE

CEH

27 CONGRESS STREET  
PORTSMOUTH, NH 03802

CLIENT PROJECT: CON ED MASPETH

SAMPLE(S) RECEIVED DATE: 03/13/97

PROJECT: N/A

<u>SAMPLE ID</u>	<u>SAMPLE DESCRIPTION/LOCATION</u>	<u>SAMPLE DATE/TIME</u>
97-03-0224-001	FIELD EQUIPMENT BLANK	3/12/97 ; 09:30
97-03-0224-002	MW-101	3/12/97 ; 13:50
97-03-0224-003	MW-101F	3/12/97 ; 13:50
97-03-0224-004	MW-102	3/12/97 ; 1800
97-03-0224-005	MW-102F	3/12/97 ; 18:00
97-03-0224-006	DUPE	3/12/97 ; N/A

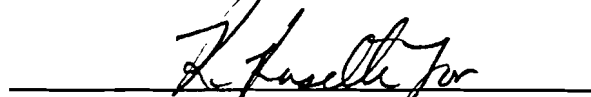
### LABORATORY CERTIFICATION NUMBERS

NJDEP ID:12531 MADEQE ID:NJ302 VADGS ID:00007 NYDOH:11104

NHDES ID:250492-A,B CTDHS ID:PH-0649 MDDHMH ID:186

RIDHHL ID:NJ12531 PADER ID:68-368

  
F. JABLONSKI, F. KHALIL, K. KENSELLA  
QUALITY CONTROL COORDINATOR

  
ROBERT HULIT  
MANAGER OF LABORATORY SERVICES

ELIZABETH A. PANICO  
VP OF LABORATORY OPERATIONS

### COMMENTS:

NA = NOT AVAILABLE FROM CHAIN OF CUSTODY / NOT APPLICABLE

**TABLE OF CONTENTS**

**PROJECT NUMBER: 97-03-0224**

**CHAIN OF CUSTODY RECORDS**

**METHOD SUMMARIES**

**LABORATORY CHRONICLE**

**BASE NARRATIVE/NONCONFORMANCE SUMMARY**

**ABULATED ANALYTICAL RESULTS**

C Extractable Organics

**QUALITY CONTROL SUMMARY REPORTS**

C Extractable Organics QC Summary

**APPENDIX C**

**CHAIN OF CUSTODY**

CHAIN-OF-CUSTODY RECORD  
 and  
 Work Authorization

LAB SDG NO.: (FOR LAB USE ONLY)

97-03-224

Company CEH  
 Address BOX 4696  
 City PORTS MOUTH  
 State NH ZIP 03802 Phone 603 431 4879  
 Project Manager DAVID HILL Fax \_\_\_\_\_  
 Project name CON ED MASPETH Purchase Order No. \_\_\_\_\_

ANALYSIS REQUESTED

PRINT ANALYSIS: REQUESTS CLEARLY, LEGIBLY AND COMPLETELY.  
 Page 1 of 1  
 REMARKS

SAMPLE DESCRIPTION	TYPE		MATRIX TYPE	DATE SAMPLED	TIME	PRES	NO. CONT	ANALYSIS REQUESTED										REMARKS				
	GRB	COMP																				
1 FIELD EQUIPMENT BLANK	✓		Water	3/12/97	930		4	✓														2-11
2 MW-101	✓		Water	3/12/97	1350		4	✓														"
3 MW-101 F	✓		Water	3/12/97	1350		4	✓														"
4 MW-102	✓		Water	3/12/97	1800		4	✓														"
5 MW-102 F	✓		Water	3/12/97	1800		4	✓														"
6 DUPE	✓		Water	3/12/97			4	✓														"

FAILURE TO PRINT CLEARLY, LEGIBLY AND COMPLETELY MAY RESULT IN DELAYS. ANY ANALYSIS REQUEST NOT ENTERED COMPLETELY, CLEARLY AND LEGIBLY OR WHICH IS CONFUSING OR AMBIGUOUS MAY RESULT IN DELAYS. SAMPLES CAN NOT BE LOGGED IN AND THE TURNAROUND TIME CLOCK WILL NOT START UNTIL ANY AMBIGUITIES ARE RESOLVED. TO AVOID THIS, PRINT CLEARLY, LEGIBLY AND COMPLETELY.

SAMPLER/SUBMITTER'S STATEMENT: I attest that the proper field sampling procedures were used during the collection. Name (print) BRUCE P BLINNE/CEH Signature: [Signature]  
 of these samples and that the information on this Chain of Custody and the analysis(es) requested are true and correct.

RELINQUISHED BY:	RECEIVED BY:	DATE:	TIME:	RELINQUISHED TO LABORATORY BY:	ACCEPTED FOR LAB BY:	DATE	TIME
				<u>[Signature]</u>	<u>[Signature]</u>	3/13/97	7:50

Turnaround Time (Faxables) If other than 14 day contact your project manager for authorization number.  
 24 Hour \_\_\_\_\_ 5 Day \_\_\_\_\_  
 48 Hour \_\_\_\_\_ 10 Day \_\_\_\_\_  
 72 Hour X 14 Day \_\_\_\_\_ Auth No: \_\_\_\_\_

Laboratory Comments:

All Samples Received  
 Temp 3.5 °C Cool  Yes  No  
 Samples Intact  Yes  No  
 Properly Preserved  Yes  No

Data Deliverables (Standard T.A.T. Hard Copy)

Results only \_\_\_\_\_  
 Results with QC X  
 RTD-4 \_\_\_\_\_  
 FTD-2 \_\_\_\_\_  
 If other than standard turnaround time for hard copy, please indicate in client remarks.

Client Remarks: PLB's - 0.065 ppb detection limit  
Field BLANK, MW-101, MW-102 and Dupe are total (unfiltered) samples  
MW-101 F and MW-102 F ARE Field filtered (0.45µ)

002

**TABLE OF CONTENTS****PROJECT NUMBER: 97-03-0224****CHAIN OF CUSTODY RECORDS****METHOD SUMMARIES****LABORATORY CHRONICLE****CASE NARRATIVE/NONCONFORMANCE SUMMARY****TABULATED ANALYTICAL RESULTS****GC Extractable Organics****QUALITY CONTROL SUMMARY REPORTS****GC Extractable Organics QC Summary**

**CHAIN OF CUSTODY**



# ANALab inc.

205 Campus Plaza 1, Raritan Center, Edison, New Jersey 08837 (908) 225-4111  
 ENVIRONMENTAL ANALYTICAL LABORATORY SERVICES FAX (908) 225-4110

## CHAIN-OF-CUSTODY RECORD and Work Authorization

LAB SDG NO.: (FOR LAB USE ONLY) **9703-224**

Company <b>CEH</b>	<b>ANALYSIS REQUESTED</b>	
Address <b>BOX 4696</b>		
City <b>PORTSMOUTH</b>		
State <b>NH</b> ZIP <b>03802</b> Phone <b>603 431 4819</b>		
Project Manager <b>DAVID HILL</b> Fax		
Project name <b>CON ED MASPETH</b> Purchase Order No.		

PRINT ANALYSIS REQUESTS CLEARLY, LEGIBLY AND COMPLETELY.  
 Page 1 of 1  
 REMARKS

SAMPLE DESCRIPTION	TYPE		MATRIX TYPE	DATE SAMPLED	TIME	PRES	NO. CONT	ANALYSIS REQUESTED										REMARKS					
	GRB	COMP																					
1 Field EQUIPMENT BLANK	✓		Water	3/12/97	930		4	✓															2-1it
2 MW-101	✓		Water	3/12/97	1350		4	✓															"
3 MW-101 F	✓		Water	3/12/97	1350		4	✓															"
4 MW-102	✓		Water	3/12/97	1800		4	✓															"
5 MW-102 F	✓		Water	3/12/97	1800		4	✓															"
6 DUPE	✓		Water	3/12/97			4	✓															"

FAILURE TO PRINT CLEARLY, LEGIBLY AND COMPLETELY MAY RESULT IN DELAYS. ANY ANALYSIS REQUEST NOT ENTERED COMPLETELY, CLEARLY AND LEGIBLY OR WHICH IS CONFUSING OR AMBIGUOUS MAY RESULT IN DELAYS. SAMPLES CAN NOT BE LOGGED IN AND THE TURNAROUND TIME CLOCK WILL NOT START UNTIL ANY AMBIGUITIES ARE RESOLVED. TO AVOID THIS, PRINT CLEARLY, LEGIBLY AND COMPLETELY.

SAMPLER/SUBMITTER'S STATEMENT: I attest that the proper field sampling procedures were used during the collection: Name (print): **BRUCE P BLINVE/CEH** Signature: *[Signature]*  
 of these samples and that the information on this Chain of Custody and the analysis(es) requested are true and correct.

RELINQUISHED BY:	RECEIVED BY:	DATE:	TIME:	RELINQUISHED TO LABORATORY BY:	ACCEPTED FOR LAB BY:	DATE:	TIME:
				<i>[Signature]</i>	<i>[Signature]</i>	3/13/97	7:50

**Turnaround Time (Faxables)**

24 Hour \_\_\_\_\_ 5 Day \_\_\_\_\_  
 48 Hour \_\_\_\_\_ 10 Day \_\_\_\_\_  
 72 Hour X 14 Day \_\_\_\_\_

If other than 14 day contact your project manager for authorization number.  
 Auth No: \_\_\_\_\_

**Laboratory Comments:**

All Samples Received	Yes	No
Temp <u>30.5</u> °C Cool	<input checked="" type="radio"/>	<input type="radio"/>
Samples Intact	<input checked="" type="radio"/>	<input type="radio"/>
Properly Preserved	<input checked="" type="radio"/>	<input type="radio"/>

**Data Deliverables (Standard T.A.T. Hard Copy)**

Results only \_\_\_\_\_  
 Results with QC X  
 RTD-4 \_\_\_\_\_  
 FTD-2 \_\_\_\_\_

If other than standard turnaround time for hard copy, please indicate in client remarks.

**Client Remarks:** PCB's - 0.065 ppb detection limit  
 Field BLANK, MW-101, MW-102 and Dupe are total (unfiltered) samples  
 MW-101 F and MW-102 F ARE Field filtered (0.45µ)

002

TECHNICAL REQUIREMENTS MEMORANDUM

PROJECT: 97-03-224

CLIENT: CEH ENVIRONMENTAL  
Client Project: CON EDISON  
Parameter: PCB (AQUEOUS) EPA 608 MDL (Low Level)

The following "Special Technical Requirements" for the analysis of PCBs by EPA 608 must be met for this project.

- o Sampling Containers: 4 x 1L Amber Glass per sample. (4°C)
- o PCB (Aqueous) samples are to be batched independently of other samples.
- o Extract @ 1.0 L (1000 mL). Final Extract Volume 2.5 mL
- o Surrogate Spike at 1/2 Normal Amount. (To yield 50 ug/l instrumental)
- o QC Blank Spike and MS/D Spike @ 1/2 Normal Amount (200 ug/l instrumental concentration) Equalivent to 0.5 ug/L sample concentration.
- o MDL all Arochlors 0.05 ug/L

Calculations:  $\text{ug/L} = (\text{Inst Conc ug/L}) \times (\text{DF}) \times 0.0025 \text{ L} / 1.000 \text{ L}$

ig.  $20.0 \text{ ug/l} \times (\text{DF}=1) \times 0.0025\text{L} / 1.000\text{L} = 0.05 \text{ ug/L}$

Note: Notify Project Management on Receipt of Project.

Attach copy of Tech Memo to COC prior to Distribution.

See VP Operations or QA Manager to characterize Samples on receipt.

cehtrm.doc

# RUSH ANALYSIS

FAX T.A.T: 72hr H.C. T.A.T.: 8 Day PROJECT# 9703-224

CLIENT NAME: CEH PHONE # \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_ APPROVAL # 73

CLIENT PROJECT: \_\_\_\_\_ FAX DUE DATE: 3/18/97

ARRIVAL DATE: 3/13/97 HARD COPY DUE DATE: ~~3/18/97~~ 3/20/97

SAMPLE #	MATRIX	TEST REQUESTED	APPROVED	NO APPRO
1-6	W	<u>EXTRACTION:</u> PCB (0.065 PPb)		
		<u>WET CHEMISTRY:</u>		
		<u>METALS:</u>		
		<u>GC VOA:</u>		
1-6	W	<u>GC EXTRACT:</u> PCB (0.065 PPb)		
		<u>GC/MS VOA:</u>		
		<u>GC/MS EXTRACT:</u>		004

**METHOD SUMMARIES**

METHODS SUMMARY

*Extractable Organics by GC: Gas Chromatography*

—	Priority Pollutant Pesticides (Aqueous)	EPA 608 Ext. ECD		Ref. 1
—	Organo-Chlorine Pesticide Compounds (Aqueous)	EPA 608 Ext. ECD		Ref. 1
—	Priority Pollutant PCB's (Aqueous)	EPA 608 Ext. ECD		Ref. 1
—	Priority Pollutant Pesticides & PCBs (Aqueous)	EPA 608 Ext. ECD		Ref. 1
—	EPA TCL List Pesticides (Aqueous)	SW846 8081 Ext. ECD	Rev 0, 9/94	Ref. 2
—	EPA TCL List Pesticides (Non-Aqueous)	SW846 8081 Ext. ECD	Rev 0, 9/94	Ref. 2
✓	Pesticides Organochlorine (Non-Aqueous)	SW846 8081 Ext. ECD	Rev 0, 9/94	Ref. 2
—	PCBs (Non-Aqueous, Soils, Wipes)	SW846 8081 Ext. ECD	Rev 0, 9/94	Ref. 2
—	TCLP Pesticides (TCLP Organic Extraction)	SW846 8081 Ext. ECD	Rev 0, 9/94	Ref. 2
—	PAH (Polynuclear Aromatic Hydrocarbons) (Aqueous)	SW846 8100 Ext FID	Rev 0, 9/86	Ref. 2
—	PAH (Polynuclear Aromatic Hydrocarbons) (Non-Aqueous)	SW846 8100 Ext FID	Rev 0, 9/86	Ref. 2
—	Herbicides (Dicamba 2.4-D 2.4.5-T Silvex (WW)	SM 6640B Ext. "BTF" ECD		Ref 3
—	Herbicides (Dicamba 2.4-D 2.4.5-T Silvex (AQ)	SW846 8150B Ext. ECD	Rev 2, 9/94	Ref. 2
—	Herbicides (Dicamba 2.4-D 2.4.5-T Silvex (Soil)	SW846 8150B Ext. ECD	Rev 2, 9/94	Ref. 2
—	TCLP Herbicides (2.4-D 2.4.5-TP{Silvex})	SW846 8150B Ext. ECD	Rev 2, 9/94	Ref. 2
—	Total Petroleum Hydrocarbons (C8-C40) AQ	SW846 8015A Ext FID	Rev 1, 7/92	Ref. 4
—	DRO Diesel Range Organics (C8-C22) AQ	SW846 8015A Ext FID	Rev 1, 7/92	Ref. 4
—	Fuel Type Quantitative (Fuel# 2.4.6,Diesel) AQ	SW846 8015A Ext FID	Rev 1, 7/92	Ref. 4
—	Total Petroleum Hydrocarbons (C8-C40) (Soil)	SW846 8015A Ext FID	Rev 1, 7/92	Ref. 4
—	DRO Diesel Range Organics (C8-C22) (Soil)	SW846 8015A Ext FID	Rev 1, 7/92	Ref. 4
—	Fuel Type Quantitative (Fuel# 2.4.6,Diesel) (Soil)	SW846 8015A Ext FID	Rev 1, 7/92	Ref. 4
—	TPH (Total Petroleum Hydrocarbons)	SW846 8100 Ext FID	Rev 0, 9/86	Ref. 2
—	Mass. VPH & EPH Method	Mass. DEP Published	Draft 8/95	
—	Fuel Type Qualitative Identification Finger Print	SW846 8015A Mod Ext FID	Rev 1, 7/92	Ref. 4

*Sample Preparation for Extractable Organics by GC:*

—	Aqueous Matrix	"Separatory Funnel Extraction"	SW846 3510B	Rev 2, 9/94	Ref. 2
—	Soil.Solid.Sludge	"Soxlet Extraction"	SW846 3540B	Rev 2, 9/94	Ref. 2
—	Soil.Solid.Sludge,Wipe	"Ultrasonic Extraction"	SW846 3550	Rev 1, 9/94	Ref. 2
—	Organics	"Waste Dilution"	SW846 3580A	Rev 1, 7/92	Ref. 2
—	TCLP Toxicity Characteristic Leaching Procedure		SW846 1311	Rev 0, 7/92	Ref. 2
—	SPLP Synthetic Precipitation Leaching Procedure		SW846 1312	Rev 0, 9/94	Ref. 2

*Sample "Cleanup" Procedures for Extractable Organics by GC:*

—	Semi-Volatiles	Alumina	SW846 3610A	Rev 2, 9/94	Ref. 2
—	Semi-Volatiles	Florisil Cleanup	SW846 3620A	Rev 1, 7/92	Ref. 2
—	Semi-Volatiles	Silica Gel Cleanup	SW846 3630B	Rev 2, 9/94	Ref. 2
—	Semi-Volatiles	Gel Permeation (GPC) Cleanup	SW846 3640A	Rev 1, 9/94	Ref. 2
—	Acid Cleanup	Acid with KMnO3 Cleanup	SW846 3665	Rev 0, 9/94	Ref. 2

Reference:

- USEPA. 40CFR136 List of Approved Test Procedures, 1/31/94 w/Revs 4/4/95. Federal Register Vol. 49, No. 209, Oct. 26, 1984.
- EPA SW846. Test Methods for Evaluating Solid Waste, Physical & Chemical Methods, 3rd Ed. Final Update IIB. January 1995.
- APHA. 1992. Standard Methods for the Examination of Water & Wastewater, 18th. Ed., 1992
- NJDEPE OQA. Quantitation of Semivolatile Petroleum Products in Water, Soil, Sediment. OQA QAM-025-10/91 methods.doc Q.A. 1/97. Rev 0. QC Document Control # 97-00058

**LABORATORY CHRONICLE**

END ANALYTICAL REPORT

**ANALab inc.**

205 Campus Plaza 4, Raritan Center, Edison, NJ 08837. Tel (908) 225-4111 Fax (908) 225-4110

**QUALITY CONTROL SUMMARY  
BLANK SPIKE RECOVERY REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHY**

MATRIX: AQUEOUS

BATCH NUMBER: 031397416301

<u>PCB</u>	<u>CONCENTRATION (UG/L)</u>	<u>PERCENT RECOVERY FOR BLANK SPIKE</u>
A1260	0.5	108

SPIKE RANGE: MIN = 20  
MAX = 150

301BS  
RH/dg



ANALYTICAL REPORT  
 PCB ANALYSIS BY GAS CHROMATOGRAPHY

CLIENT: CEH  
 CLIENT PROJECT: CON ED MASPETH  
 REPORT DATE : MAR. 18 1997  
 PROJECT RECEIPT DATE : 03/13/97

LAB ID:97-03-0224 -001  
 ANALYST KW  
 ANALYSIS DATE: 03/14/97  
 MATRIX : WATER

CLIENT SAMPLE DESIGNATION: FIELD EQUIPMENT BLANK

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL(UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
 RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S

GC ANALYSIS CONFORMANCE / NON-CONFORMANCE SUMMARY

PROJECT ID: 97-03-224

	<u>No</u>	<u>Yes</u>
1. <u>GC Chromatograms Labeled with Compounds Identified (including Field and Laboratory QC Samples)</u>	—	✓
2. <u>Initial and Continuing Calibration Summaries</u>	—	✓
3. <u>Calibration</u> - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis.	—	✓
4. <u>Continuing Calibration Requirements Met</u>	—	✓
5. <u>Retention Time Shift Meets Criteria (if applicable)</u>	✓	✗
6. <u>Blank Free of Contamination; If not, List Compounds and amounts present.</u>	—	✓
a. GC Voa Fraction _____		
b. GC Pesticide _____		
c. GC PCB Fraction _____		
d. GC Extractable _____		
e. GC DAI Voa _____		
7. <u>Extraction Hold Time Met. Comments:</u> _____	—	✓
8. <u>Analysis Hold Time Met. Comments:</u> _____	—	✓
9. <u>Surrogate Recoveries Meet Criteria</u> - (If not, list compounds & their recoveries outside of limits) If not met, calculations were checked, results are qualified.	—	✓
a. GC Voa Fraction _____		
b. GC Pesticide _____		
c. GC PCB Fraction _____		
d. GC Extractable _____		
e. GC DAI Voa _____		
10. <u>Matrix Spike / Matrix Spike Duplicate Recoveries and % RPD's meet Criteria.</u> If not, list compounds and recoveries outside of QC limits.	—	✓
a. GC Voa Fraction _____		
b. GC Pesticide _____		
c. GC PCB Fraction _____		
d. GC Extractable _____		
e. GC DAI Voa _____		

Additional Comments: 5) retention time out for sample  
97-03-224-1, 2, 3, 4, 5, 6 011

Lab or QC Coordinator: [Signature] Date: 3/20/97  
 Q&A A:\QCGNCS

**CASE NARRATIVE/NONCONFORMANCE SUMMARY**

APPENDIX C



Consolidated Edison Company of New York, Inc. 4 Irving Place, New York, NY 10003

PURCHASE ORDER NUMBER 615464  
PAYMENT

CURRENT DATE

10/1/67

INVOICES SHALL BE SUBMITTED MONTHLY FOR WORK COMPLETED DURING SUCH PERIOD. PAYMENT WILL BE MADE 30 DAYS AFTER RECEIPT OF AN ACCEPTABLE INVOICE BY CON EDISON.

TO EXPEDITE PAYMENT, IN ADDITIONS TO SENDING YOUR ORIGINAL INVOICES TO ACCOUNTS PAYABLE, PLEASE SEND A COPY TO MR. COHEN.

ACCEPTED AND AGREED TO BY CASWELL, SICHLER & HILL, INC.

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

KINDLY RETURN A SIGNED COPY OF THIS PURCHASE ORDER TO THE BUYER.

SHIPPING TERMS:  
NOT APPLICABLE

PAYMENT TERMS:  
NET 30 DAY

\*\*\*PAYMENT TO ABOVE VENDOR ONLY\*\*\*

BY Robert L. Levy  
FOR CON EDISON

SUBJECT TO THE CONDITIONS ON THE REVERSE SIDE HEREOF



PURCHASE ORDER NUMBER 615464

CURRENT DATE

10/24/79

2" PVC MONITORING WELLS		\$27/FOOT
PCR SAMPLE ANALYSIS (0.065 PPD)		\$65 EACH
SPLIT SPOON SAMPLES		\$17 EACH
SAMPLING REPORT		\$575
LOW-FLOW DEVELOPMENT		\$700/DAY
LOW-FLOW PURGING AND SAMPLING		\$700/DAY
DEDICATED POLYETHYLENE TUBING		\$6.00/FOOT
POT DRUMS		\$50 EACH
GAS-POWERED GENERATOR	1 DAY	\$50
	2 DAYS	\$100
	3 DAYS	\$125
	4-5 DAYS	\$200

NOTE: WATER IS AVAILABLE; HOWEVER, CEH SHALL SUPPLY THE NECESSARY HOSE LENGTHS.

CON EDISON WILL BE REPRESENTED IN THE ADMINISTRATION OF THIS CONTRACT BY BARRY H. COHEN, 718-294-4236; FAX: 718-232-2687.

CEH SHALL CONTACT MR. COHEN BEFORE STARTING ANY WORK ON THIS PROJECT.

CORRESPONDENCE, QUESTIONS, AND THE SAMPLING REPORT SHALL BE SENT TO MR. COHEN AT ASTORIA T&S BLDG 136, 31-01 20TH AVENUE, ASTORIA, N.Y. 11105.

CEH WILL BE REPRESENTED BY DAVID D. HILL, 603-431-4899, FAX: 603-431-4982.

4TH SHALL COMPLY WITH CON EDISON'S INSURANCE REQUIREMENTS DATED MARCH 1, 1971.

IF NOT CURRENTLY ON FILE, COPIES OF WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE, COMPREHENSIVE LIABILITY INSURANCE INCLUDING CONTRACTUAL LIABILITY AND AUTOMOTIVE LIABILITY INSURANCE WITH THE COVERAGE AND LIMITS REQUESTED BY CON EDISON SHALL BE SUBMITTED DIRECTLY TO CON EDISON'S ADMINISTRATIVE SERVICES SECTION, ROOM 1207-S, FOR APPROVAL BEFORE PROCEEDING WITH THE WORK. ALSO STATE THIS ORDER NUMBER ON YOUR CERTIFICATE OR ANY CORRESPONDENCE RELATED TO THIS ORDER.

EXPENDITURE LIMITATION - THE MAXIMUM EXPENDITURE AUTHORIZED UNDER THIS PURCHASE AGREEMENT IS \$0,000. CON EDISON WILL NOT BE OBLIGATED TO MAKE PAYMENT HEREUNDER IN EXCESS OF THE EXPENDITURE LIMITATION AND THE VENDOR SHALL NOT BE OBLIGATED TO CONTINUE PERFORMANCE UNLESS AND UNTIL AN INCREASE HAS BEEN AUTHORIZED BY MEANS OF A DULY EXECUTED MODIFICATION TO THIS PURCHASE ORDER.

SUBJECT TO THE CONDITIONS ON THE REVERSE SIDE HEREOF



Consolidated Edison Company of New York, Inc.  
4 Irving Place, New York, NY 10003

*Maspeh*

CURRENT DATE 10/24/96  
PURCHASE ORDER NUMBER 615464  
PURCHASE ORDER DATE 10/24/96  
PURCHASE REQ. NUMBER 849-A-0077  
VENDOR CODE 03065  
AUTHORIZED DOLLARS \$8000  
FUNDING ORDER  
ACCOUNT NUMBER 54556  
STATISTICS 1/2

TO: CASWELL EICHLER & HILL INC  
27 CONGRESS STREET  
POST OFFICE BOX 4696  
PORTSMOUTH NH 03802-4696

SHIP TO:  
ASTORIA T&S 136  
31-01 20TH AVENUE 615464  
L.I.C. NY 11105  
BARRY W. COHEN

MAIL ORIGINAL INVOICES TO  
CON EDISON ACCOUNTS PAYABLE  
P.O. BOX 799  
COOPER STATION  
NEW YORK N.Y. 10276  
(212) 460-3510

BUYER: ROBERT PEREZ 212-460-3048

CASWELL, EICHLER & HILL, INC. ("CEH") OF PORTSMOUTH, N.H. SHALL  
INSTALL, DEVELOP, AND SAMPLE THE GROUNDWATER IN THREE MONITORING WELLS  
AT THE FORMER MASPEH SUBSTATION. ALL SAMPLES SHALL BE ANALYZED FOR  
PCBS AT A DETECTION LIMIT OF 0.065 PPB.

WORK SHALL BE PERFORMED IN ACCORDANCE WITH

1. FAXED INVITATION DATED SEPTEMBER 13, 1996.
2. CON EDISON'S STANDARD TERMS AND CONDITIONS FOR SERVICE CONTRACTS  
DATED AUGUST 16, 1988.
3. CON EDISON'S INSURANCE REQUIREMENTS DATED MARCH 1, 1991.
4. CLH BID DATED SEPTEMBER 13, 1996 AND LETTER DATED OCTOBER 16  
1996.
5. THE RULINGS OF ALL REGULATORY AGENCIES HAVING JURISDICTION.

CONTRACT TYPE

THIS IS A UNIT PRICE CONTRACT.

UNIT PRICES

THE FOLLOWING UNIT PRICES ARE ALL INCLUSIVE AND INCLUDE SUCH ITEMS  
AS LABOR, SUPERVISION, TRAVEL, PER DIEM, PROFESSIONAL SERVICES,  
CLERICAL SERVICES, OFFICE EXPENSES, INSURANCE, OVERHEAD, AND PROFIT

SITE VISIT	\$340
HSA DRILLER MOB & DEMOB	\$150
4' - HSA	\$37/FOOT

SUBJECT TO THE CONDITIONS ON THE REVERSE SIDE HEREOF

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END ANALYTICAL REPORT

**The State of New Hampshire  
Department of Environmental Services  
CERTIFICATE OF APPROVAL  
Wastewater Analysis**

*Issued to*  
**ANALAB, Inc.**

*Located at*  
**205 Campus Plaza 1, Edison, NJ**

*Under the provisions of the Regulations in Env-C300  
for the following analyses:*

**FULL CERTIFICATION: Metals by Flame AA, Metals by Graphite Furnace, Mercury, pH, Specific Conductivity, TDS, Total Alkalinity, Chloride, Fluoride, Sulfate, Non-Filterable Residue, Oil & Grease, PCBs in Oil, and Pesticides.**

**PROVISIONAL CERTIFICATION: Total Hardness, Calcium, Magnesium, Sodium, Potassium, Ammonia-N, Nitrate-N, Orthophosphate, Total Phosphorus, COD, TOC, BOD, Total Cyanide, Total Phenolics, PCBs in Water, and Volatile Organics.**

**CERTIFICATE NUMBER: 250497-B**

**DATE OF ISSUE: January 31, 1997**

**EXPIRATION DATE: January 30, 1998**

*Charles W. Dyer*  
\_\_\_\_\_  
Certifying Officer

026

**The State of New Hampshire  
Department of Environmental Services  
CERTIFICATE OF APPROVAL  
Drinking Water Analysis**

*Issued to*  
**ANALAB, Inc.**

*Located at*

**205 Campus Plaza 1, Edison, NJ**

*Under the provisions of the Regulations in Env-C300  
for the following analyses:*

**FULL CERTIFICATION: Metals by Flame AA, Metals by Graphite Furnace,  
Mercury, Total Filterable Residue, Sodium, Total Cyanide, and Herbicides  
(Compliance List).**

**PROVISIONAL CERTIFICATION: Insecticides (Limited List).**

**CERTIFICATE NUMBER: 255497-A**

**DATE OF ISSUE: January 31, 1997**

**EXPIRATION DATE: January 30, 1998**

  
\_\_\_\_\_  
Certifying Officer

025

ANALAB, INC. 205 Campus Plaza, Edison, New Jersey 08837 (908)225-4111

New Hampshire  
Department of Environmental Services  
Environmental Laboratory Certificates of Approval

This information is supplied to conform to NHDES Regulatory Requirements.

## QUALITY CONTROL SUMMARY PCB SURROGATE PERCENT RECOVERY TABLE

MATRIX: AQUEOUS

<u>SAMPLE DESIGNATION</u>	<u>DECACHLORO- BIPHENYL (DCB)%</u>	<u>TCMX %</u>
METHOD BLANK	95	100
BLANK SPIKE	103	106
97-03-0224-1 MS	106	100
97-03-0224-1 MSD	95	90
97-03-0224-1	78	76
97-03-0224-2	66	82
97-03-0224-3	58	61
97-03-0224-4	71	71
97-03-0224-5	78	74
97-03-0224-6	78	88

**ANALYTICAL FLAG KEY:**

- \* RECOVERY NOT WITHIN THE ADVISORY LIMITS
- D = DILUTED OUT
- IND = INDETERMINANT DUE TO MATRIX INTERFERENCE

**ADVISORY LIMITS:**

Soil Range = 20-150  
Water Range = 24-154

MATRIX SPIKE RECOVERY REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHY

MATRIX: AQUEOUS

SAMPLE ID: 97-03-0224-003

<u>PCB</u>	<u>CONCENTRATION (UG/L )</u>	<u>PERCENT RECOVERY MS</u>	<u>PERCENT RECOVERY MSD</u>	<u>RPD</u>
A1260	0.5	117	105	11

ANALYTICAL FLAG KEY:

BS = BLANK SPIKE  
BSD = BLANK SPIKE DUPLICATE  
RPD = RELATIVE PERCENT DIFFERENCE

RECOVERY RANGE: MIN = 20  
MAX = 150  
RPD = 45

301BSBSD  
RH/dg

ANALab inc.

205 Campus Plaza 1, Raritan Center, Edison, NJ 08837, Tel (908) 225-4111, Fax (908) 225-4110

QUALITY CONTROL SUMMARY  
BLANK SPIKE RECOVERY REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHY

MATRIX: AQUEOUS

BATCH NUMBER: 031397416301

<u>PCB</u>	<u>CONCENTRATION</u> <u>(UG/L )</u>	<u>PERCENT RECOVERY FOR</u> <u>BLANK SPIKE</u>
A1260	0.5	108

SPIKE RANGE: MIN = 20  
MAX = 150

301BS  
RH/dg

ANALab INC.

205 Campus Plaza 1, Raritan Center, Edison, NJ 08837, Tel (908) 225-4111, Fax (908) 225-4110

QUALITY CONTROL SUMMARY  
BLANK SPIKE RECOVERY REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHY

MATRIX: AQUEOUS

BATCH NUMBER: 031397416301

<u>PCB</u>	<u>CONCENTRATION (UG/L )</u>	<u>PERCENT RECOVERY FOR BLANK SPIKE</u>
A1260	0.5	108

SPIKE RANGE: MIN = 20  
MAX = 150

301BS  
RH/dg



**METHOD BLANK SUMMARY  
PCB ANALYSIS BY GAS CHROMATOGRAPHY**LABORATORY: ANALAB, INC.  
NJDEP LAB ID: 12531  
MATRIX: AQUEOUS

ANALYSIS DATE: 03/17/97

ANALYST: KW

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL (UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

**COMMENTS:**

MDL = METHOD DETECTION LIMIT.

&lt; = RESULT IS LESS THAN THE METHOD DETECTION LIMIT (MDL).

301B  
RH/

QUALITY CONTROL SUMMARY REPORTS

GC - EXTRACTABLE ORGANICS

ANALYTICAL REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHY

CLIENT: CEH  
CLIENT PROJECT: CON ED MASPETH  
REPORT DATE : MAR. 18 1997  
PROJECT RECEIPT DATE : 03/13/97

LAB ID:97-03-0224 -006  
ANALYST KW  
ANALYSIS DATE: 03/14/97  
MATRIX : WATER

CLIENT SAMPLE DESIGNATION: DUPE

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL(UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S

ANALYTICAL REPORT

PCB ANALYSIS BY GAS CHROMATOGRAPHY

CLIENT: CEH  
CLIENT PROJECT: CON ED MASPETH  
REPORT DATE : MAR. 18 1997  
PROJECT RECEIPT DATE : 03/13/97

LAB ID:97-03-0224 -005  
ANALYST KW  
ANALYSIS DATE: 03/14/97  
MATRIX : WATER

CLIENT SAMPLE DESIGNATION: MW-102F

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL (UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S

ANALYTICAL REPORT

PCB ANALYSIS BY GAS CHROMATOGRAPHY

CLIENT: CEH  
CLIENT PROJECT: CON ED MASPETH  
REPORT DATE : MAR. 18 1997  
PROJECT RECEIPT DATE : 03/13/97

LAB ID:97-03-0224 -004  
ANALYST KW  
ANALYSIS DATE: 03/14/97  
MATRIX : WATER

CLIENT SAMPLE DESIGNATION: MW-102

<u>COMPOUND</u>	<u>RESULTS (UG/L)</u>	<u>MDL (UG/L)</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S

## ANALYTICAL REPORT

## PCB ANALYSIS BY GAS CHROMATOGRAPHY

CLIENT: CEH  
CLIENT PROJECT: CON ED MASPETH  
REPORT DATE : MAR. 18 1997  
PROJECT RECEIPT DATE : 03/13/97

LAB ID: 97-03-0224 -003  
ANALYST KW  
ANALYSIS DATE: 03/14/97  
MATRIX : WATER

CLIENT SAMPLE DESIGNATION: MW-101F

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL(UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

## COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S

015

ANALYTICAL REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHYCLIENT: CEH  
CLIENT PROJECT: CON ED MASPETH  
REPORT DATE : MAR. 18 1997  
PROJECT RECEIPT DATE : 03/13/97LAB ID:97-03-0224 -002  
ANALYST KW  
ANALYSIS DATE: 03/14/97  
MATRIX : WATER

CLIENT SAMPLE DESIGNATION: MW-101

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL(UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

## COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S

ANALYTICAL REPORT  
PCB ANALYSIS BY GAS CHROMATOGRAPHY

CLIENT: CEH  
 CLIENT PROJECT: CON ED MASPETH  
 REPORT DATE : MAR. 18 1997  
 PROJECT RECEIPT DATE : 03/13/97

LAB ID:97-03-0224 -001  
 ANALYST KW  
 ANALYSIS DATE: 03/14/97  
 MATRIX : WATER

CLIENT SAMPLE DESIGNATION: FIELD EQUIPMENT BLANK

<u>COMPOUND</u>	<u>RESULTS (UG/L )</u>	<u>MDL(UG/L )</u>
AROCLOR 1016	ND	0.05
AROCLOR 1221	ND	0.05
AROCLOR 1232	ND	0.05
AROCLOR 1242	ND	0.05
AROCLOR 1248	ND	0.05
AROCLOR 1254	ND	0.05
AROCLOR 1260	ND	0.05

COMMENTS:

N.D. = NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL).  
 RESULTS ARE REPORTED ON DRY WEIGHT BASIS FOR SOIL ANALYSIS

PCB301S



TABULATED ANALYTICAL RESULTS

GC EXTRACTABLE ORGANICS

GC ANALYSIS CONFORMANCE / NON-CONFORMANCE SUMMARY

PROJECT ID: 97-23-224

	No	Yes
1. <u>GC Chromatograms Labeled with Compounds Identified (including Field and Laboratory QC Samples)</u>	—	✓
2. <u>Initial and Continuing Calibration Summaries</u>	—	✓
3. <u>Calibration</u> - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis.	—	✓
4. <u>Continuing Calibration Requirements Met</u>	—	✓
5. <u>Retention Time Shift Meets Criteria (if applicable)</u>	✓	✗
6. <u>Blank Free of Contamination; If not, List Compounds and amounts present.</u>	—	✓
a. GC Voa Fraction _____		
b. GC Pesticide _____		
c. GC PCB Fraction _____		
d. GC Extractable _____		
e. GC DAI Voa _____		
7. <u>Extraction Hold Time Met. Comments:</u> _____	—	✓
8. <u>Analysis Hold Time Met. Comments:</u> _____	—	✓
9. <u>Surrogate Recoveries Meet Criteria - (If not, list compounds &amp; their recoveries outside of limits) If not met, calculations were checked, results are qualified.</u>	—	✓
a. GC Voa Fraction _____		
b. GC Pesticide _____		
c. GC PCB Fraction _____		
d. GC Extractable _____		
e. GC DAI Voa _____		
10. <u>Matrix Spike / Matrix Spike Duplicate Recoveries and % RPD's meet Criteria. If not, list compounds and recoveries outside of QC limits.</u>	—	✓
a. GC Voa Fraction _____		
b. GC Pesticide _____		
c. GC PCB Fraction _____		
d. GC Extractable _____		
e. GC DAI Voa _____		

Additional Comments: 5) retention time out for sample  
97-23-224-1, 2, 3, 4, 5, 6 011

Lab or QC Coordinator: [Signature] Date: 3/20/97  
 Q&A A:\QCGCNCs

**SAMPLE MANAGEMENT LABORATORY CHRONICLE**

CLIENT NAME: CEH nH.  
 CLIENT PROJECT: Cont'd Maspeth  
 RAS # : \_\_\_\_\_  
 SAMPLE DATE(S): 3/12/97  
 SAMPLE MATRIX: H2O SOIL, \_\_\_\_\_

LAB PROJECT ID: 97-03-224  
 SAMPLE TEMP ON RECEIPT: 35.  
 SAMPLE RECEIVE DATE: 3/13/97  
 ANALAB COOLER ID #: N/A

CONDITION OF SAMPLES RECEIVED BY LAB:	NA	YES	NO	COMMENTS
Cooler Seal Intact . . . . .	NA	<input checked="" type="radio"/>	NO	_____
Samples Received Cool (2-6°C) . . . . .	NA	<input checked="" type="radio"/>	NO	_____
Samples Received Intact . . . . .		<input checked="" type="radio"/>	NO	_____
Sample Labels Match Chain of Custody. . . . .		<input checked="" type="radio"/>	NO	_____
VOAs HCL Preserved as per Label or Custody .NA	<input checked="" type="radio"/>	YES	NO	_____
VOAs w/out Bubbles, Septa TFE Side Down . .	<input checked="" type="radio"/>	YES	NO	_____
Samples Delivered via ANALAB PICK UP. . . .	<input checked="" type="radio"/>	YES	NO	_____
Samples Delivered via CLIENT DROP OFF . . .	NA	<input checked="" type="radio"/>	NO	_____
Airbill # Present, if by Common Carrier. .	NA	YES	<input checked="" type="radio"/>	_____
Traffic Reports Present, if applicable . . .	<input checked="" type="radio"/>	YES	NO	_____
Subcontract Analysis Required (Sub COC). . .		YES	<input checked="" type="radio"/>	_____

**\*PRESERVATION CHECKS PERFORMED FOR AQUEOUS SAMPLES NEEDING PH ADJUSTMENT\***

N/A = IF NOT APPLICABLE

LAB SAMPLE	FRACTION	PH MEASURED	OK	COMMENTS BY SM ON RECEIPT
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Note: NA = Not Applicable or Not Available from Chain of Custody  
 . Temperature taken on receipt from Temperature Surrogate Vial

003  
3/13/97  
 Date

[Signature]  
 Sample Custodian Signature

# ANALab inc.

205 Campus Plaza 1, Raritan Center, Edison, NJ 08837, Tel (908) 225-4111, Fax (908) 225-4110

LABORATORY CHRONICLE  
PCB (METHOD 608/8080)

CLIENT: CEH  
CLIENT PROJECT: CON ED MASPETH  
DATE RECEIVED: 03/13/97

PROJECT NO: 97-03-0224  
SAMPLING DATE: 3/12/97

<u>LABORATORY</u> <u>SAMPLE ID</u>	<u>SAMPLE DESCRIPTION/LOCATION</u>	<u>EXTRACTION DATE</u>	<u>DATE ANALYZED</u>	<u>ANALYST</u>
97-03-0224-001	FIELD EQUIPMENT BLANK	03/13/97	03/14/97	KW
97-03-0224-002	MW-101	03/13/97	03/14/97	KW
97-03-0224-003	MW-101F	03/13/97	03/14/97	KW
97-03-0224-004	MW-102	03/13/97	03/14/97	KW
97-03-0224-005	MW-102F	03/13/97	03/14/97	KW
97-03-0224-006	DUPE	03/13/97	03/14/97	KW

PCB608