



City of Rochester

File  
Court St  
V00001

FAX (716) 428-6010  
TDD/Voice 232-3260

Department of  
Environmental Services

Office of the Commissioner  
Division of Environmental Quality  
30 Church Street, Rm. 300B  
Rochester, New York 14614-1278  
Tel.#: (716) 428-6011

July 26, 1996

Todd Caffoe  
New York State Department of Environmental Conservation  
Region 8  
6274 East Avon-Lima Road  
Avon, New York 14414

Re: Bausch & Lomb

Dear Mr. Caffoe:

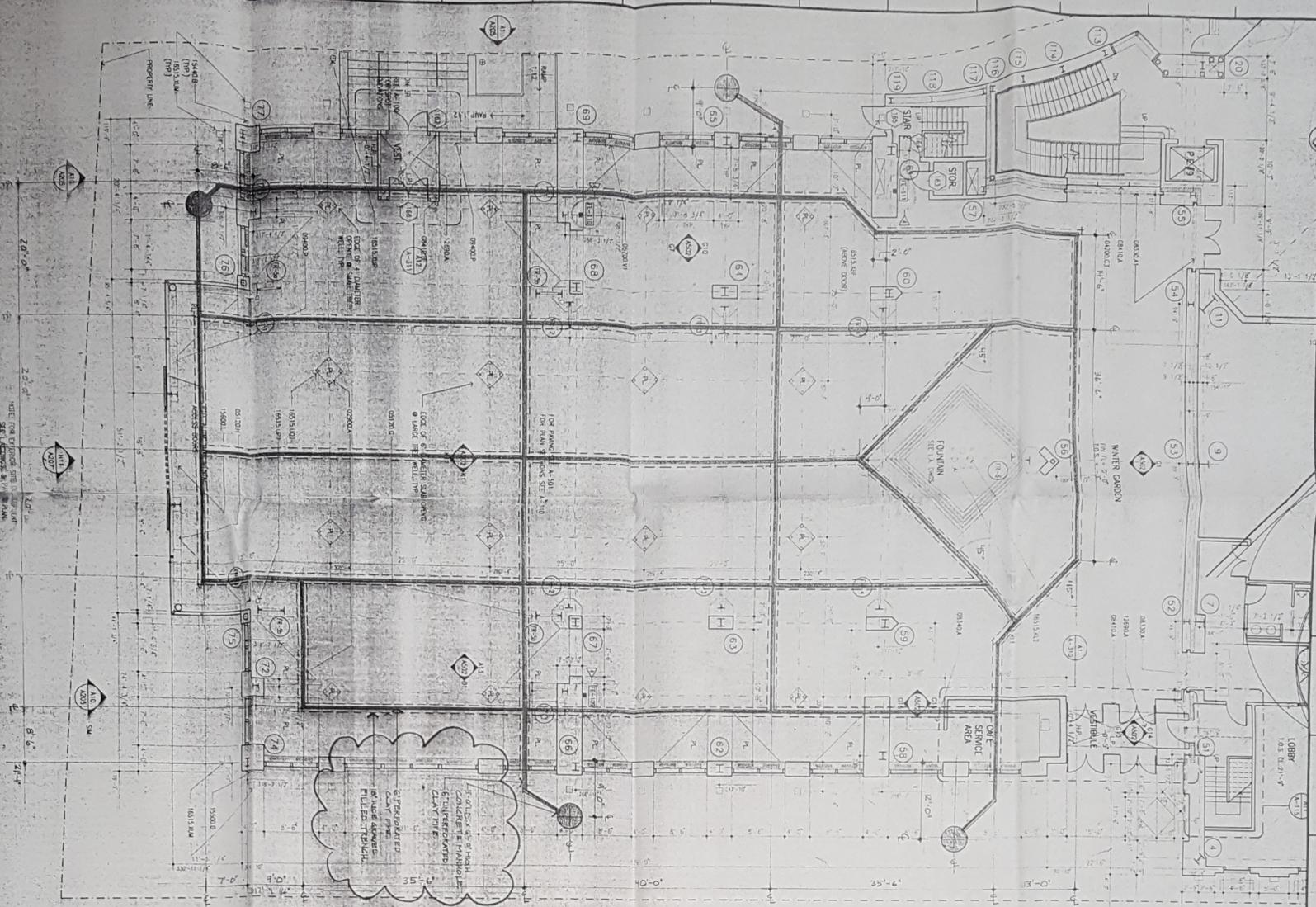
As we discussed at our meeting, attached is the drawing of the underslab venting system at the Wintergarden and the final invoice from Raymond LeChase, Inc. If you have any questions or require additional information, please let me know.

Sincerely,

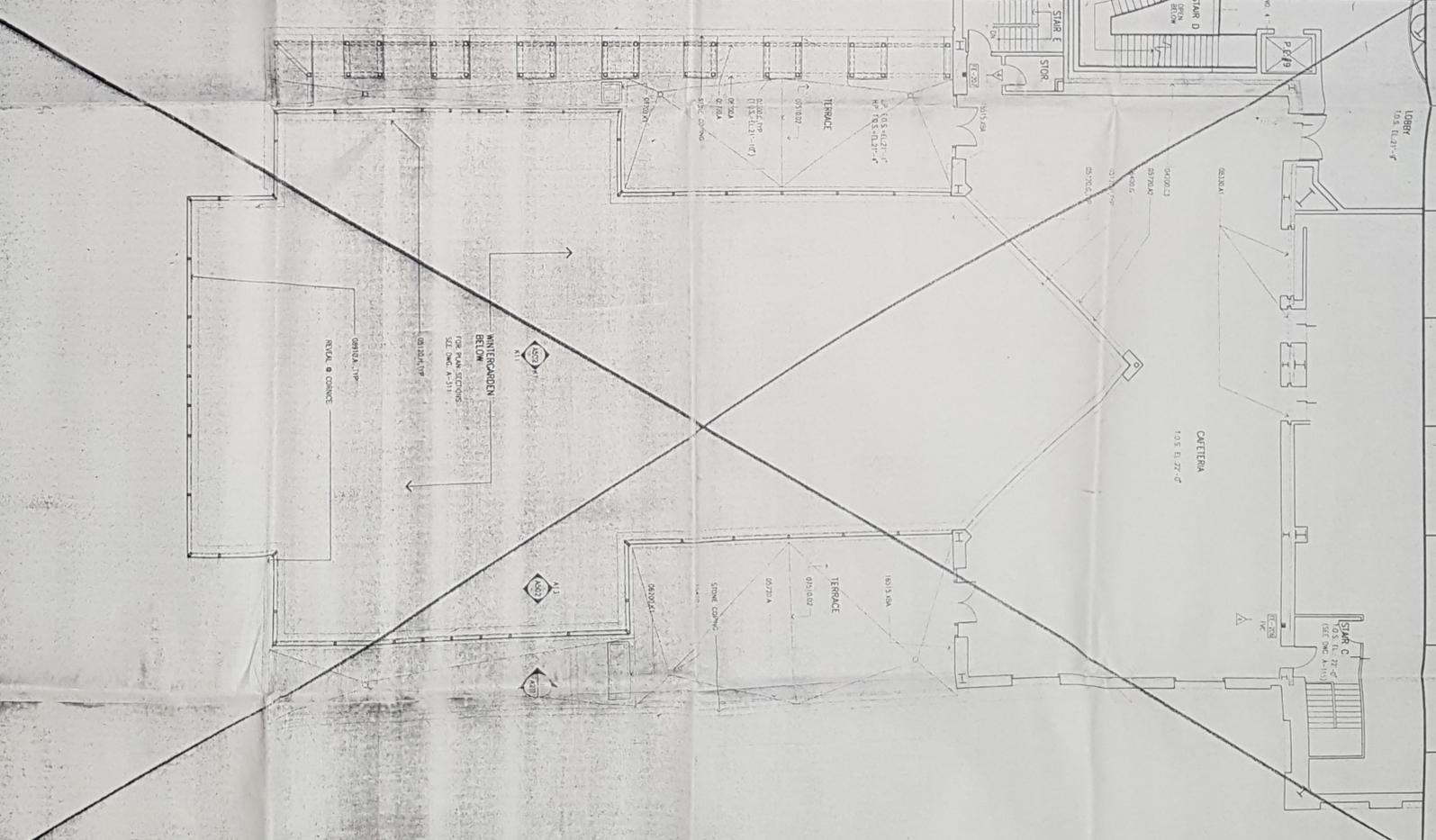
Mark D. Gregor  
Manager of Environmental Quality Division

attachments





REF: A-108  
 AT GROUND FLOOR PLAN @ WINTERGARDEN



A10 2ND FLOOR PLAN @ WINTERGARDEN

MATERIAL KEYING LEGEND

- DL 2. SITEWORK
- DL 3. CONCRETE
- DL 4. MASONRY
- DL 5. METALS
- DL 6. WOOD AND PLASTICS
- DL 7. GLASS & INSULATION ASSEMBLIES
- DL 8. DOORS AND WINDOWS
- DL 9. FINISHES
- DL 10. DIMENSIONS
- DL 11. MECHANICAL
- DL 12. ELECTRICAL



**BAUSCH & LOMB WORLD HEADQUARTERS**

ONE BAYVIEW & LOUIS PLACE  
 ROCHESTER, NEW YORK

**UNDERSLAB VENTING SYSTEM @ WINTERGARDEN**

Project No. 9213  
 Drawing No. 9213A108  
**SK-A482**  
 5-16-74



# Raymond LeChase Inc.

Construction Manager, General Contractor

P.O. Box 60830 Rochester, New York 14606

(716) 254-3510

TYPE: \_\_\_\_\_

PROJECT INFORMATION

TO: 1992 Bausch & Lomb / Rochester Trust  
 Bausch & Lomb, Inc.  
 Agent for C.O.M.I.D.A.  
  
 Attention: Mr. T. Quirk  
 P. O. Box 450  
 Rochester, New York 14692-0450

**D E S C R I P T I O N**  
 World Headquarters Facility  
 Contaminated Soils  
  
**L O C A T I O N**  
 Clinton Avenue South  
 Rochester, New York

CUSTOMER NO.	DATE	JOB NO.	CUSTOMER'S ORDER NO.	REFERENCE	BILLING NO.	TERMS
1500	05-11-94	1900-06		DiLoreto	03	NET PAYABLE UPON RECEIPT OF INVOICE

FINAL INVOICE FOR CONTAMINATED SOILS AT THE BAUSCH & LOMB WORLD HEADQUARTERS SITE.

Billing for the Vapor Barrier and the Vapor Collection System in the Wintergarden, as per the attached Proposal of 3/31/94. . . . .	\$ 43,737.00
Cumulative Billings: \$94,016.35	

**INVOICE TOTAL** \$ 43,737.00

D-110-00	D-	C-403-00	C-
43,737.00		43,737.00	

A 1½% PER MONTH SERVICE CHARGE WILL BE ADDED TO ALL BALANCES THAT HAVE NOT BEEN PAID WITHIN 30 DAYS FROM DATE OF INVOICE. THIS CONSTITUTES 18% INTEREST PER ANNUM.

FEDERAL I.D. NO.  
16-0967307

ORIGINAL

LeChase Construction  
P.O. Box 40344  
Rochester, NY 14604  
(716) 454-4400

Change Order Request #00043

PVC Pipe Vents @ WG per RFP #11

Project: Bausch & Lomb World Headquarters Job: 1900-01

Fox & Fowle Architects, P.C.  
22 West 19th Street  
New York, NY 10011  
December 15, 1993

Required :

In Reference To CIC/FEF /00022 Started: Completed:

CIC #22

PVC pipe vents are being added to vent the underside of the slab in the wintergarden of solvent fumes per RFP #11. ( REVISED MEMORANDUM FROM F & F DATED MARCH 14, 1994 )

THE FURNISH AND INSTALL THE SCOPE OF WORK INCLUDED IN F & F MEMO IS AS FOLLOWS:

1. LABOR	:	\$ 13,670.36
2. MATERIAL	:	+ 23,524.75
=====		
COMBINED TOTAL	:	\$ 37,195.11
QUALITY FEE 15%	:	+ 5,579.27
=====		
SUBTOTAL	:	\$ 42,774.38
LECHASE FEE 2.25 %	:	+ 962.42
=====		
NET ADDITIONAL COST :		\$ 43,736.80

Total Cost: \$ 43,737

Requested by: LeChase Construction

Signed: Michael A. Ricotta  
By: Michael A. Ricotta  
Date: 3.31.94



# LeCHASE CONSTRUCTION

## BAUSCH & LOMB WORLD HEADQUARTERS PROJECT

**RFP # 11 WINTERGARDEN VENT SYSTEM**
**03/31/94**

<b>1. LECHASE LABOR :</b>			
1a. Layout : superintendent	8 hrs	\$ 49.00	\$ 392.00
: laborer forman	8 hrs	\$ 29.34	\$ 234.72
1b. Shakeout material : laborer	16 hrs	\$28.75	\$ 460.00
1c. Lay pipe and accessories : laborer forman	32 hrs	\$ 29.34	\$ 938.88
laborer	64 hrs	\$ 28.75	\$ 1,840.00
1d. Core drill new foundation wall			
Laborer forman	12 hrs	\$ 29.34	\$ 352.08
Laborer	12 hrs	\$ 28.75	\$ 345.00
Core machine and diamond bits	2 days	\$ 250.00	\$ 500.00
1e. Set 3 pc manhole and frame & grate			
One Mason 2 days	16 hrs	\$ 37.06	\$ 592.96
One laborer 2 days	16 hrs	\$ 28.75	\$ 460.00
Excavator J.Deere 892D	16 hrs	\$ 85.71	\$ 1,371.36
Excavator operator	16 hrs	\$ 39.10	\$ 625.60
1f. Install Alumiseal vapor barrier			
Laborer forman	48 hrs	\$ 29.34	\$ 1,408.32
Laborers	96 hrs	\$ 28.75	\$ 2,760.00
'4' x 250' / roll x 17 rolls			
1g. Install 4' pvc perforated pipe			
Laborer forman	16 hrs	\$ 29.34	\$ 469.44
Laborer	32 hrs	\$ 28.75	\$ 920.00
<b>LABOR SUBTOTAL :</b>			<b>\$ 13,670.36</b>

# LeCHASE CONSTRUCTION

## BAUSCH & LOMB WORLD HEADQUARTERS PROJECT

**RFP # 11 WINTERGARDEN VENT SYSTEM**

**03/31/94**

**2. MATERIALS :**

2a. 6" Clay pipe 4'sec.	266 pcs	\$ 11.60	\$ 3,085.60
b. 6"solid clay pipe	16 pcs	\$ 10.52	\$ 168.32
c. 6" clay 45 deg.elbows	8 pcs	\$ 17.35	\$ 138.80
d. 6"clay 90 deg.elbows	4 pcs	\$ 17.35	\$ 69.40
e. 6" clay tee's	9 pcs	\$ 17.35	\$ 156.15
f. 6" double tee clay wye's	9 pcs	\$ 35.00	\$ 315.00
g. 6" clay wye's	3 pcs	\$ 17.35	\$ 52.05
h. 6" double wye's	2 pcs	\$ 33.50	\$ 67.00
i. 6" clay couplings	266 pcs	\$ 19.09	\$ 5,230.66
j. Alumiseal vapor barrier	17 rolls	\$ 355.53	\$ 6,044.01
k. Joint tape for Alumiseal	45 rolls	\$ 31.44	\$ 1,414.80
l. Sch.40 4" pvc weeps	12 lf	\$ 1.23	\$ 14.76
m. Manholes			
1. 48" x 2' riser section	4 pcs	\$ 47.80	\$ 382.40
2. 48" x 3' base	4 pcs	\$ 206.60	\$ 826.40
3. 48" x 6" ecc. flat slab cover	4 pcs	\$ 60.05	\$ 240.20
4. 8" A - loks	4 pcs	\$ 22.00	\$ 88.00
5. Gasket lubricant	40 lbs	\$ 1.25	\$ 50.00
n. Steel manholes (frame and grate)	4 pcs	\$ 165.00	\$ 660.00
o. Perforated pvc permiter pipe			
1. 4" pvc pipe	400 lf	\$ .38	\$ 152.00
2. 4" tee's	6 pcs	\$ 1.20	\$ 7.20
3. 4" 90 deg elbows	6 pcs	\$ 1.10	\$ 6.60
4. 4" end caps	4 pcs	\$ .60	\$ 2.40
5. misc.supplies	1 lsum	\$ 50.00	\$ 50.00
p. vent pipe and cap			
1. 4" cap	4 pcs	\$ 45.00	\$ 180.00
2. 4" dia. pipe	40 lf	\$ 5.50	\$ 220.00
3. 4" 90 deg elbow	4 pcs	\$ 20.00	\$ 80.00
4. concrete encasement	2 cy	\$ 200.00	\$ 400.00
<b>3. TRENCH EXCAVATION</b>	178 cy	\$ 3.50	\$ 623.00
<b>4. TERMINATION BAR</b>	800 lf	\$ 3.50	\$ 2,800.00

**MATERIAL SUBTOTAL \$ 23,524.75**

**LABOR SUBTOTAL \$ 13,670.36**

**COMBINED TOTAL \$ 37,195.11**

**QUALITY FEE 15 % 5,579.27**

**SUBTOTAL \$ 42,774.38**

**LECHASE FEE 2.25 % 962.42**

**NET ADDITIONAL COST : \$ 43,736.80**



535 Summit Point Drive  
Henrietta, New York 14467  
Office: (716)359-1960  
Fax: (716)359-9351

*File Court st*

THIS IS A FACSIMILE MESSAGE FOR THE ATTENTION OF:

NAME: Steve Campbell  
FIRM: LaBella Assoc.  
FAX #: 454-3066



FROM: Liza Dwyre  
DATE: 11-30-92  
PROJECT: Bausch & Lomb  
EMPIRE PROJECT/PROPOSAL #: RTA-92-52  
ORIGINAL IN MAIL: YES \_\_\_\_\_ NO

NUMBER OF PAGES BEING TRANSMITTED INCLUDING THIS SHEET: 5

IF YOU DO NOT RECEIVE ALL PAGES OR IF THE QUALITY IS NOT SUITABLE, PLEASE CALL (716) 359-1960 AS SOON AS POSSIBLE. OUR FAX NUMBER IS (716) 359-9351.

COMMENTS: \_\_\_\_\_  
Copy of letter from Empire to  
James Goff, Bausch & Lomb, 11-23-92  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

November 25, 1992

Mr. James Goff, FAX: (716) 338-8818  
 Bausch & Lomb, Inc.  
 1400 North Goodman Street  
 Rochester, New York 14609

Reference: Apparent Volatile Organics in Test Borings  
 Geotechnical Investigation for  
 Proposed Bausch & Lomb Headquarters  
 Rochester, New York  
 RTA-92-52

Dear Mr. Goff:

During log preparation for the above-referenced project, a "sweet" odor characteristic of solvents was noted in a sample in B-107, and a black color and petroleum-type odor was noted in samples in B-103. We used a photolionization detector (PID) to screen sample jar head space from these borings for ionizable volatile organics. As a check, we also screened samples from all other B-100 series borings drilled for the project, and detected no readings except in one sample in B-111. (Please note that only those holes in the B-100 series have been screened, since the B-200 series were augered to refusal without sampling, and the B-300 and B-400 series are scheduled to be drilled after building demolition.)

The following table presents a summary of positive PID readings. I have also attached a plan of test boring locations.

Boring No.	Date Drilled	Depth (ft.)	Observations	Sample Jar Head Space PID Reading, ppm*
B-103	11/21/92	9-11, bottom	black, petroleum-type odor	100
B-103	11/21/92	11-13, top	black, petroleum-type odor	100
B-103	11/21/92	11-13, bottom		60
B-103	11/21/92	15-16.5		18
B-107	11/14/92	14-16.5	"sweet" solvent-type odor	40
B-111	11/16/92	15-16.5		100

\* Samples were screened in the office on 11/24-25/92 at room temperature with an H-nu PI-101 photoionization detector equipped with an 11.7 eV lamp. All samples listed in table are refrigerated as of 11/25/92 for possible analytic testing.

**Huntingdon**

Empire Soils Investigations, Inc.

Apparent Volatile Organics in Test Borings  
Geotechnical Investigation, Bausch & Lomb Corporate Headquarters  
November 25, 1992  
RTA-92-52

If you wish to have analytic testing performed on these samples, Empire Soils Investigations can have this work performed by our analytic laboratory, Huntingdon Analytic Services. Analytic results will not be strictly valid because the samples were not chilled at the time of sampling, but should give a reasonable indication of the nature and approximate concentration of the substance(s). We suggest that one sample from each of the three boreholes with PID readings be analyzed for Target Compound List (TCL) volatile and semivolatile organics (EPA Method 8240/8270). Our standard turnaround (3 to 4 week) price, per sample, is \$735.00. Faster turnaround can be provided for a surcharge, which will be quoted upon request.

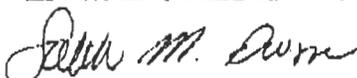
For samples to strictly meet regulatory protocols, redrilling and resampling could be performed at a short offset (approximately 3 to 5 feet) from the original borehole. If this work is to be performed, we would also suggest that groundwater monitoring wells be installed.

We note that the PID readings were detected in fill or shallow native soil samples under the fill. The fill is underlain by a less pervious glacial till, underlain by jointed, permeable Lockport Dolomite bedrock, which was cored. The boreholes were backfilled with auger cuttings, which will typically be more permeable than surrounding native soils. This potentially creates a migration pathway for contaminants. We request your authorization to re-auger B-103, B-107, and B-111 and backfill them with cement grout at an added cost of \$10.00 per linear foot (total cost \$ 932.00).

We do not consider PID readings to be a sufficient basis for regulatory reporting. However, we note that if analytic testing discloses contamination, it may be a legal requirement that the current property owner report findings to the New York State Department of Environmental Conservation (NYSDEC). We recommend that Bausch & Lomb review these requirements.

We will continue with our geotechnical analyses per your direction yesterday. We would also be prepared to provide technical assistance to Bausch & Lomb and project consultants in your evaluations of how to proceed with these environmental concerns, if requested.

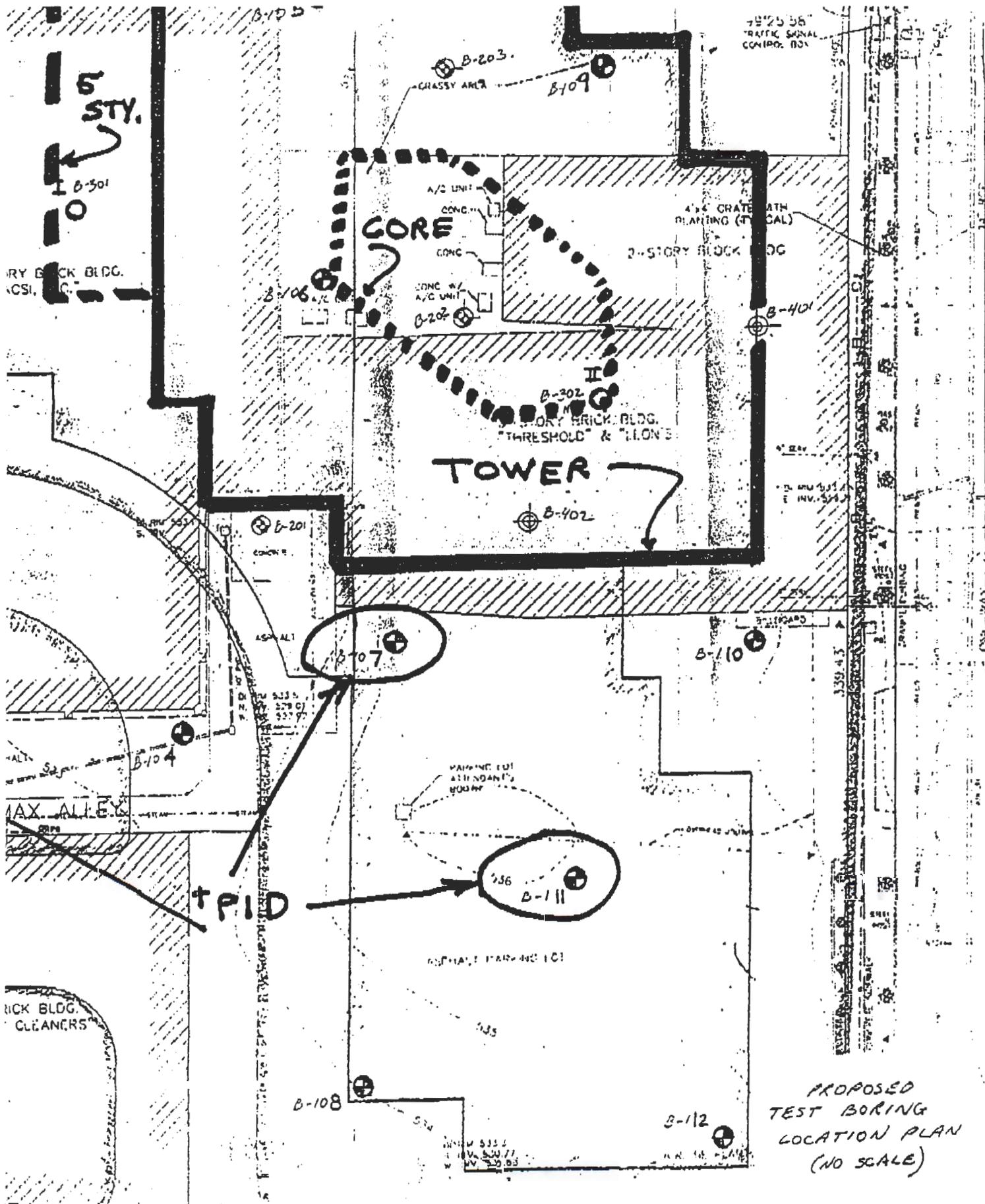
Respectfully submitted,  
EMPIRE SOILS INVESTIGATIONS, INC.



Elizabeth M. Dwyre, P.E.  
Senior Geotechnical Engineer

cc: Mr. Dan DiLoreto  
Bausch & Lomb (mail)





PROPOSED TEST BORING LOCATION PLAN (NO SCALE)





535 Summit Point Drive  
Herricks, New York 14467  
Office: (716)359-1960  
Fax: (716)359-9351

LETTER OF TRANSMITTAL

Date: December 31, 1992

To: LaBella Associates, P.C.  
300 State Street  
Rochester, NY 14614

Attention: Steve Campbell

Reference: Bausch & Lomb Corporate Headquarters  
Rochester, NY

Job No.: RTA-92-52A Client's Job No.: \_\_\_\_\_

We are sending you: \_\_\_\_\_ Herewith \_\_\_\_\_ Under Separate Cover

\_\_\_\_\_ Letter \_\_\_\_\_ Report \_\_\_\_\_ Subsurface Logs \_\_\_\_\_ Invoice  
\_\_\_\_\_ Drawings \_\_\_\_\_ Samples \_\_\_\_\_ Test Results \_\_\_\_\_ See Below

No. of Copies	Title or Description of Enclosures
1	Environmental Analytical Data for Reference Project

These Are: \_\_\_\_\_  For Your Information \_\_\_\_\_  Per Your Request

Per the Request of: \_\_\_\_\_

Remarks: \_\_\_\_\_

Sent By: \_\_\_\_\_  
 Mail  
\_\_\_\_\_ Express Service  
\_\_\_\_\_ UPS  
\_\_\_\_\_ Hand Delivered

Respectfully submitted,  
EMPIRE SOILS INVESTIGATIONS, INC.

Elizabeth M. Dwyre  
Elizabeth M. Dwyre, P.E.

Copies to:



ENVIRONMENTAL ANALYTICAL REPORT

REPORT NUMBER: 92-1801

PREPARED FOR:

EMPIRE SOILS INVESTIGATIONS, INC.  
535 SUMMIT POINT DRIVE  
ROCHESTER, NEW YORK 14467

RE: RTA-92-52A; LABELLA ASSOCIATES

PREPARED BY:

HUNTINGDON ANALYTICAL SERVICES  
DIVISION OF EMPIRE SOILS INVESTIGATIONS, INC.  
P.O. BOX 250  
MIDDLEPORT, NEW YORK 14105  
TELEPHONE: 716/735-3400; FAX: 716/735-3653

DECEMBER 17, 1992

PAGE 1

**Huntingdon**  
Analytical Laboratory

Analytical Services Division

HUNTINGDON ANALYTICAL SERVICES  
ELAP #10833  
ENVIRONMENTAL REPORT

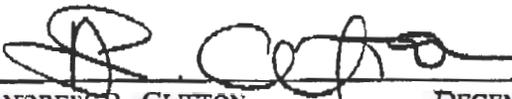
REPORT NUMBER: 92-1801

STATEMENT OF WORK PERFORMED

I HEREBY DECLARE THAT THE WORK WAS PERFORMED UNDER MY SUPERVISION ACCORDING TO THE PROCEDURES OUTLINED BY THE FOLLOWING REFERENCES AND THAT THIS REPORT PROVIDES A CORRECT AND FAITHFUL RECORD OF THE RESULTS OBTAINED.

- 40 CFR PART 136, "GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS UNDER THE CLEAN WATER ACT", OCTOBER 26, 1984 (FEDERAL REGISTER) U. S. ENVIRONMENTAL PROTECTION AGENCY.
- U.S. ENVIRONMENTAL PROTECTION AGENCY, "TEST METHODS OF EVALUATING SOLID WASTE - PHYSICAL/CHEMICAL METHODS", OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, SW-846, 2ND EDITION AND 3RD EDITION.

THIS REPORT CONTAINS ANALYTICAL DATA BASED ON OUR EXAMINATION OF THE SAMPLE(S) PRESENTED TO US. THIS REPORT CONTAINS (EXCEPT WHERE EXPLICITLY STATED) A COMPLETE ACCOUNT OF THE ANALYSES REQUESTED TO BE PERFORMED ON THE SAMPLE(S). INFORMATION WHICH WAS NOT REQUESTED TO BE REPORTED IS NOT INCLUDED.

  
\_\_\_\_\_  
ANDREW P. CLIFTON                      DECEMBER 17, 1992  
ENVIRONMENTAL LABORATORY DIRECTOR

REPORT CODE LEGEND:

< DL = LESS THAN DETECTION LIMIT  
ND = NOT DETECTED  
NA = NOT APPLICABLE  
INP = INFORMATION NOT PROVIDED  
MB = METHOD BLANK

**Huntingdon**  
Analytical Laboratory

Analytical Services Division

HUNTINGDON ANALYTICAL LABORATORY  
ENVIRONMENTAL

EPA METHOD #240  
VOLATILE ORGANICS

SAMPLE IDENTIFICATION:

B-107 S-6  
14-16.5'METHOD  
BLANK

HAS SAMPLE #921801

01

-

COMPOUND	RESULT ug/kg	RESULT ug/kg	DL ug/kg
CHLOROMETHANE	<10	<10	<10
BROMOMETHANE	<10	<10	<10
VINYL CHLORIDE	<10	<10	<10
CHLOROETHANE	<10	<10	<10
METHYLENE CHLORIDE	5.6 *	<5.0	<5.0
ACETONE	27 *	<10	<10
TRICHLOROFLUOROMETHANE	<10	<10	<10
CARBON DISULFIDE	<5.0	<5.0	<5.0
1,1-DICHLOROETHENE	<5.0	<5.0	<5.0
1,1-DICHLOROETHANE	<5.0	<5.0	<5.0
1,2-DICHLOROETHENE (TOTAL)	<5.0	<5.0	<5.0
CHLOROFORM	<5.0	<5.0	<5.0
1,2-DICHLOROETHANE	<5.0	<5.0	<5.0
2-BUTANONE	<10	<10	<10
1,1,1-TRICHLOROETHANE	<5.0	<5.0	<5.0
CARBON TETRACHLORIDE	<5.0	<5.0	<5.0
VINYL ACETATE	<10	<10	<10
BROMODICHLOROMETHANE	<5.0	<5.0	<5.0
1,2-DICHLOROPROPANE	<5.0	<5.0	<5.0
cis-1,3-DICHLOROPROPENE	<5.0	<5.0	<5.0
TRICHLOROETHENE	<5.0	<5.0	<5.0
DIBROMOCHLOROMETHANE	<5.0	<5.0	<5.0
1,1,2-TRICHLOROETHANE	<5.0	<5.0	<5.0
BENZENE	<5.0	<5.0	<5.0
trans-1,3-DICHLOROPROPENE	<5.0	<5.0	<5.0
2-CHLOROETHYL VINYL ETHER	<20	<20	<20
BROMOFORM	<5.0	<5.0	<5.0
4-METHYL-2-PENTANONE	<10	<10	<10
2-HEXANONE	<10	<10	<10
TETRACHLOROETHENE	<5.0	<5.0	<5.0
1,1,2,2-TETRACHLOROETHANE	<5.0	<5.0	<5.0
TOLUENE	<5.0	<5.0	<5.0
CHLOROBENZENE	<5.0	<5.0	<5.0
ETHYL BENZENE	<5.0	<5.0	<5.0
STYRENE	<5.0	<5.0	<5.0
XYLENE (TOTAL)	<5.0	<5.0	<5.0
1,3-DICHLOROBENZENE	<10	<10	<10
1,2-DICHLOROBENZENE	<10	<10	<10
1,4-DICHLOROBENZENE	<10	<10	<10

DATE SAMPLED:

11-14-92

-

DATE RECEIVED:

12-02-92

-

DATE ANALYZED:

12-10-92

12-10-92

\* SUSPECTED LABORATORY BACKGROUND

NOTE: SAMPLE WAS ANALYZED OUTSIDE OF RECOMMENDED HOLDING TIME.



sampler". The SPT N-value is the sum of the hammer blows required to drive the sampler for the second and third 6-inch increments. Sample refusal is generally considered to be 100 blows per 6 inches or less of sample penetration.

In nine of the test borings and three of the auger probes, rock was cored using an NQ-2 size core barrel, which produces a rock core approximately 2 inches in diameter. Rock classification is presented on the test boring logs in Appendix C and includes rock type, core sample recovery and RQD, and information on weathering, bedding, and fracturing. Core sample recovery is defined as the length of the core recovered expressed as a percentage of the length of the core run. Rock Quality Designation (RQD) is a measure of the rock mass quality and is defined as the total length of sound core pieces 4 inches or greater in length, also expressed as a percentage of the length of the core run.

The time required for coring is also recorded on the boring logs, in minutes per foot. Since rock coring was deliberately slowed to reduce bit wear and maximize core hole diameter for Goodman Jack testing, rock coring time is not an indicator of rock quality for this project.

In six of the rock core holes, Goodman Jack tests (ASTM D 4971) were performed. The Goodman Jack program was performed to provide site-specific rock mass modulus of elasticity data for use in settlement analyses. The procedures and results of this field testing program are discussed in a subsequent section of this report. Data from the Goodman Jack test program is presented in Appendix E.



Upon test boring completion, boreholes were checked for the presence and depth of free water. Boreholes completed at the end of a working day were also checked for free water on the morning following completion, to attempt to obtain stabilized water levels. These observations are noted on the test boring logs. The boreholes were then backfilled with auger cuttings to ground surface. Surplus concrete cylinders were also used for backfill in upper portions of some borings in existing pavement areas to prevent settling and creation of tripping

\* hazards. Following completion of the drilling program, test borings B-103, B-107, B-111, and B-201 were reaugered and grouted to a 20-foot depth to address potential environmental considerations at these locations. Environmental aspects of this project are being evaluated by LaBella Associates, P.C. under contract to the City of Rochester, and are not included in ESI's scope of services.

Recovered soil and rock samples were visually classified in the field or ESI office by an ESI geotechnician or geologist with review by an ESI geotechnical engineer. The subsurface boring logs presented in Appendix C have been prepared on the basis of this visual classification and the ESI driller's field logs. The boring logs are prefaced with a sheet entitled "General Information and Key to the Subsurface Logs" which explains the terms and symbols used in the preparation of the subsurface logs.

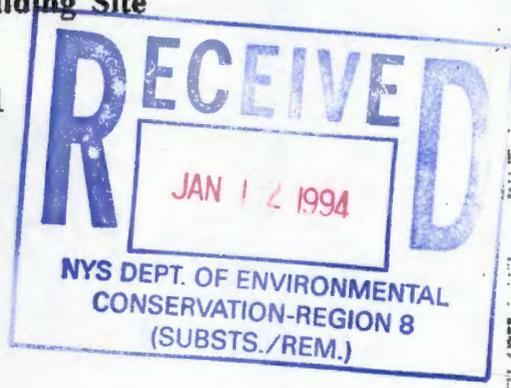
A laboratory rock core testing program was performed, consisting of four uniaxial compressive strength and eight point load strength index tests. Laboratory test results are presented in Appendix F.

#### B. Previous Subsurface Explorations

ESI performed a preliminary geotechnical investigation for the adjacent Court Street parking garage project (ESI Project No. RTA-92-044). LaBella Associates, P.C. has performed a Phase I and Phase II environmental site assessment for the Bausch & Lomb project site and the adjacent Court Street parking garage site. LaBella's Court Street parking garage Phase II field investigation was performed in association with the ESI preliminary geotechnical investigation. LaBella and ESI performed these previous studies for the City of Rochester. Because site access was not available at the time of the subsurface investigations for these projects, test borings were drilled on surrounding sidewalks. Locations of test borings and monitoring wells for these previous studies are shown on Drawing 1, Subsurface Investigation Plan and Drawing 3, Subsurface Investigation Plan, Proposed Court Street Parking Garage, in

Court St.

LeChase Construction  
Baush & Lomb World Headquarters Building Site  
Health and Safety Plan  
MARCOR of New York, Inc.  
MARCOR Job # RO-00463-001  
December 10, 1993



- c: J. Goff
- D. DiLoreto
- W. LeChase
- M. Ricotta
- K. Kohrt

**Section 1.0 Introduction**

MARCOR of New York, Inc. (MARCOR) has developed a Health and Safety Plan (HASP) for LeChase Construction (LC) in preparation for the excavation of contaminated soil at the corner of South Clinton Avenue and East Broad Street, Rochester, New York. Site conditions may vary with time. The HASP is designed as a flexible document to accomodate changes in site conditions.

**Section 1.1 Site Description**

The future site of the City of Rochester Tunnel Project has been in proximity to dry cleaning operations and retail petroleum storage facilities since the late 1800's. During construction excavation, discolored soils with an odor of organic solvents were encountered in limited areas at a depth of approximately 15 feet below the ground level surface. Several aromatic hydrocarbons were also noted at concentrations between 3.5 and 147.4 ppm. The source of the aromatic hydrocarbons is consistent with either a Stoddard solvent, a weathered gasoline or a fuel oil.

**Section 1.2 Intent**

The intent of this plan is to provide the appropriate safety requirements and general procedures to be met by LC and LC subcontractor personnel. All personnel will follow the applicable Federal/State rules and regulations. In the event of conflicting procedures, personnel will follow those which afford the highest protection.

**Section 1.3 Scope of Work**

The project involves the excavation of chlorinated and aromatic hydrocarbon contaminated soils.

Specific work activities covered by this HASP include:

1. Excavation and on-site transportation of contaminated soils.
2. Excavation entry.

**Section 1.4 Hazard Overview**

The possible hazards associated with the work activities outlined in Section 1.3 are slip, trip, and fall accidents, work with cutting tools, falling objects, work with heavy equipment, and eye, skin and respiratory contact with chlorinated aromatic hydrocarbon contaminants.

## Section 2.0 Project Personnel and On-Site Organization

The key project personnel are as follows:

Project Manager      James Matteson      254-3510 (day)      872-0377 (night)

The Project Manager has overall responsibility for ensuring that the management of the excavation and loading is properly carried out. He coordinates between office and field personnel and manages administrative requirements for the HASP.

Field Engineer      Mike Ricotta      454-4400 (day)      227-6146 (night)

The Field Engineer monitors the project's progress, regularly reviews the project schedule, and reviews all major work elements prior to submittal. He oversees scheduling and budgeting, and serves as the primary contact between LC and Bausch & Lomb for health and safety issues.

Site Safety and Health Coordinator      Kristopher Kohrt      800-388-5933 (day)      271-3212 (night)

The Site Safety and Health Officer (SSHO) or designee is responsible for LC employees and subcontracted personnel on the work site, unless otherwise specified in the HASP. The SSHO will establish operating standards in conjunction with the project manager and project supervisor and coordinate safety and health activities for the work site. He will review project plans and revisions to plans to assure that safety and health procedures are incorporated through all of the work phases. Specifically he is responsible for:

- Assuring that a complete copy of the HASP is at the site prior to the start of work activities and that all workers are familiar with it.
- Conducting on-site health and safety training and briefing sessions.
- Ensuring the availability, use and proper maintenance of personal protective decontamination and other safety or health equipment.
- Maintaining a high level of safety awareness among workers and communicating pertinent safety and health matters to them promptly.
- Assuring that all activities are performed in a manner consistent with LC policy and the HASP.
- Monitoring for dangerous conditions during field activities.
- Coordinating with emergency response personnel and medical support facilities.
- Initiating immediate corrective actions in the event of an emergency or unsafe condition.
- Promptly notifying the project manager of any emergency, unsafe condition, problem encountered or needed exception to this HASP.
- Recommending improvements in safety and health measures to the project manager.
- Conducting safety and health performance and system audits.

The SSHO, after prior consultation with the Field Engineer, has the authority to:

- Suspend activities or otherwise limit exposures if the health or safety of any person appears to be endangered.
- Notify personnel to alter work practices that he deems to not properly protect them or the environment surrounding the work site.
- Suspend an individual from work for violation of the requirements of this HASP.

## **Section 3.0 On-Site Work Plan and Personal Protective Equipment**

### **Section 3.1 Excavation and On-Site Transportation of Contaminated Soils**

- Conduct all work in accordance with the Health and Safety Plan (HASP), LC policy requirements, and local, State and Federal Regulations. Prior to work initiation, restrict the exclusion zone to authorized personnel. Conduct daily tool-box meetings.
- Complete a utility stakeout of the area. Complete a lockout/tagout of any known electric services which may be affected by the site activities.
- Conduct periodic air monitoring using a daily calibrated portable organic vapor analyzer (OVA) equipped with a flame-ionization detector or other portable detection device such as color indicating tubes. The exclusion zone perimeter, on-site vehicle cabs, soil staging area and work area monitoring results should be recorded in a log book with calibration results, date, time and location of test results, and total volatile organic compound concentrations.
- Excavate contaminated soils from the exclusion zone. Stage soils on-site on and under 8 mil polyethylene sheeting. Load soils into dump trucks for transport to acceptable disposable facility.
- The work will be completed under the appropriate level of personal protective equipment (PPE) to be determined by on-site air monitoring. At a minimum, this PPE will consist of hard hat, safety glasses with side shields, hearing protection, long-sleeve shirt and pants, steel toe leather work boots, and leather gloves. Engineering controls or PPE upgrades may be required based on air monitoring results.

### **Section 3.2 Excavation Entry**

- Conduct all work in accordance with the HASP, LC policy requirements, and local State, and Federal Regulations. Prior to work initiation, restrict the exclusion zone to authorized personnel. Conduct daily tool-box meetings. Conduct air monitoring of the work site using a portable organic vapor analyzer.
- Enter the excavation to conduct geotechnical testing and/or construction activities. Workers within the excavation should be supervised at all times. The work will be completed under the appropriate level of PPE to be determined by on-site air monitoring.

Changes to the level of protection may be made based upon air monitoring results.

No changes will be made to the level of protection without approval of the SSHO or Project Manager.

## **Section 4.0 Hazard Evaluation**

Chlorinated and aromatic hydrocarbon compounds are known to be present in limited areas. The primary hazards from these compounds are eye, skin and lung contact. Symptoms of exposure include skin, eye, nose and respiratory system irritation, giddiness, headache, nausea, vomiting and staggered gait.

The following possible additional hazards are expected on-site: slip, trip and fall accidents, work with heavy equipment and cutting tools, and falling objects.

## **Section 5.0 Exclusion Zone Access and Control**

The exclusion zone is defined as the area in which construction activities are completed where contaminated soils are encountered. Access to the exclusion zone will be limited to the trained authorized personnel governed by this plan. Such personnel are anticipated to include selected employees and subcontractors of LC. Access to the established exclusion zone is limited to authorized personnel wearing appropriate PPE.

The exclusion zone will be cordoned off with flagging tape or barrier fences. The zone will be monitored by the SSHO (or designee) to ensure personnel do not enter without proper PPE. The entry/exit corridor, decontamination zone, and support zone will be located upwind of the active work zone. A sign-in log will be employed to ensure that only authorized employees participate in the removal activities.

## **Section 6.0 Site Monitoring and Action Levels**

Potential hazards have been determined by soil sampling. Refer to Appendix A for complete soil sample results. Refer to Appendix B for specific chemical compound information.

Monitoring of the exclusion zone for volatile organics will be completed using a portable organic vapor analyzer. The need for engineering controls or PPE upgrades will be determined based upon air monitoring results. A Time Weighted Average (TWA) for worker exposure has been established for several of the compounds known to be present. Established NIOSH and OSHA TWA's are as follows: 1,1,2,2-tetrachloroethane = 1.0 ppm; trimethylbenzene = 25 ppm; isopropylbenzene = 50 ppm.

## **Section 7.0 Decontamination Procedures**

Personnel and equipment leaving the exclusion zone shall be thoroughly decontaminated. Decontamination of personnel will be by scrubbing with a soap/water mixture followed by clean water rinses.

Equipment will be pressure washed.

Any PPE determined to be contaminated by the SSHO will be disposed of in an appropriate manner.

## **Section 8.0 Medical Monitoring**

Medical monitoring will be required for those employees required to wear respirators and required to wear hearing protection. Employees who wear or may wear respiratory protection must be provided respirators in accordance with the guidelines of 29 CFR 1910.134. The regulation requires that an individual's ability to wear respiratory protection be medically certified before he/she performs designated duties. Employees who wear or may wear hearing protection devices must be provided them in accordance with the guidelines of 29 CFR 1910.95. This regulation requires that an individual's hearing level be medically evaluated.

These documents should be included as an appendix to this document for all personnel performing work which requires them to wear respirators and/or hearing protection.

## **Section 9.0 Personnel Training**

**Site Workers:** All employees performing work in the exclusion zone must have completed site specific training as outlined below.

**Supervisors:** All supervisors of exclusion zone activities must have completed an off-site training course of at least 8 hours meeting the requirements of 29 CFR 1910.120(e) on supervisor responsibilities for safety and health at hazardous waste operations within the last 12 months.

A written certificate of training should be included as an appendix to this document for each employee and supervisor requiring training.

**Site Specific Training:** Site specific training shall be provided to each employee before beginning work on the site. Personnel will be briefed by the SSHO as to the potential hazards to be encountered. Topics will include:

- Availability of this HASP.
- General site hazards and specific hazards in the work areas including those attributable to the chemicals present.
- Selection, use, testing and care of the body, eye, ear, hand, foot, and respiratory protective equipment to be worn, with the limitations of each.
- Decontamination procedures for personnel, their personal protective equipment and other equipment used on the site.
- Emergency response procedures and requirements.
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed.
- Methods to obtain emergency assistance and medical attention.

## **Section 10.0 Emergency Response**

### **Section 10.1 Notification of Site Emergencies**

In the event of an emergency, site personnel will signal distress with three blasts from an appropriate horn (vehicle horn, air horn, etc.). This sound signal will be loud enough to be clearly heard above other noise present. Appropriate authorities will then be immediately notified of the nature and extent of the emergency.

The table below shows Emergency Response Telephone Numbers. This table will be maintained at the work site by the SSHO. The location of the nearest telephone will be determined prior to initiation of on-site activities.

#### **Emergency Response Telephone Numbers**

Fire Department	911
Police Department	911
Ambulance	911
Hospital	911
Poison Control Center	911
Chemical Emergency Advice	800-424-9300
LC Safety Coordinator	254-3510 (day) 434-2289 (night) 527-7872 (pager) 729-5857 (cellular)
LC Main Office	254-3510
LC Field Office	454-4400

Should someone be transported to a hospital or doctor, a copy of this Health and Safety Plan must accompany them.

## Section 10.2 Responsibilities

The SSHO (or designee) will be responsible for responding to all emergencies. The SSHO will:

- 1.) Notify appropriate individuals, authorities and/or health care facilities of the potentially hazardous activities and potential wastes that may develop as a result of the investigation;
- 2.) Have working knowledge of safety equipment available at the site; and 3.) Ensure that a map which details the most direct route to the nearest hospital is prominently posted with the emergency telephone numbers.

Employees who will respond to emergency situations involving hazardous materials shall be trained in how to respond to such emergencies. The project supervisor will ensure that the following safety equipment is available at the site: eyewash bottles, first aid supplies, and fire extinguishers. The emergency response plan will be reviewed daily to ensure its applicability for the planned day's operations.

## Section 10.3 Accidents and Injuries

In the event of a safety or health emergency at the site, appropriate emergency measures will immediately be taken to assist those who have been injured or exposed and to protect others from hazards (See Figure 1 for the location of area hospitals in relationship to the site). Personnel trained in first aid procedure should be present during site activities to provide appropriate treatment of injuries or illnesses occurring during site activities to provide appropriate treatment of injuries or illnesses occurring during operations.

In the event of a safety or health emergency at the site, the SSHO will be immediately notified. Upon notifications of an exposure incident, the SSHO will contact the appropriate emergency response personnel, who will, according to the seriousness of the accident, provide recommended medical diagnosis and, if necessary, treatment.

The Project Manager and Field Engineer will be immediately informed of any injuries or incidents. The Field Engineer and the SSHO will investigate facility/site conditions to determine whether, and at what levels, exposure actually occurred, the cause of such exposure and the means to be taken to prevent the incident from recurring.

An exposure-incident reporting form will be completed by the SSHO, the Field Engineer and the exposed individual. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

## Section 10.4 Site Communications

Hand signals will be utilized where phones are impractical. If possible, mobile telephones will be present during site activities for emergency response and office communications. The locations of public telephones will be identified prior to the start of activities. These will provide back up for the mobile telephones and serve as the primary off-site communication network. Daily tailgate safety meetings will be used to communicate any new hazards to all site personnel and to reinforce adherence to site work practices. Communication with third parties will be completed by designated LC personnel only.

## Section 10.5 Site Security and Control

Site security and control shall be maintained by the Field Engineer and/or his designee, and the SSHO and/or his designee. Their duties include limiting access to the site to authorized personnel, oversight of project equipment and materials, and general oversight of site activities, as appropriate.

### Section 10.6 Emergency Response and Decontamination

In case of emergency, site personnel should evacuate to the identified safe refuge location, both for their own personal safety and to prevent hampering response/rescue efforts. Unless changed by the Project Manager, the command center will be used as the safe refuge. In the case of an evacuation, the SSHO will account for all personnel.

In the event of an emergency, the SSHO will direct all notification, response and follow-up actions with the concurrence of LC. Contact with any outside response personnel (ambulance, fire department, etc.) will be done at the direction of the SSHO, again with the individuals trained in first aid procedures. If an individual is transported to a hospital or a doctor, a copy of this HASP must accompany the individual.

Follow-up activities must be completed before on-site work is resumed following an emergency. All used emergency equipment must be recharged, refilled or replaced. Government agencies must be notified as appropriate. An investigation of the incident must be conducted as soon as possible. The resulting report must be accurate, objective, complete and authenticated (signed and dated).

### Section 10.7 Medical/First Aid Response

On-site medical and/or first aid response to an injury or illness will only be provided by trained personnel competent in such matters. The SSHO is responsible for directing these actions and contacting the appropriate off-site response personnel (paramedics, etc.), again with the concurrence of LC.

### Section 10.8 Fire Fighting Procedures

A fire extinguisher, intended for small fires, will be available at the work site during all construction activities. When the fire cannot be controlled with the extinguisher, the area should be evacuated immediately. The SSHO (or designee) will determine the time to contact fire department response personnel.

### Section 10.9 Emergency Decontamination Procedure

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Minimum decontamination will consist of detergent washing and rinsing and removal of contaminated outer clothing and equipment. If the emergency is such that there is insufficient time to complete all of these actions, it is acceptable to remove the contaminated clothing without washing it. If the situation is such that the contaminated clothing can not be removed, the person should be given required first aid treatment, and then wrapped in plastic or a blanket prior to transportation to medical care. If heat stress is a factor in the victim's illness/injury, the outer protective garment must be removed from the victim immediately.

### Section 10.10 Emergency Equipment

On-site equipment for safety and emergency response shall be maintained, as follows:

- fire extinguisher
- first aid kit
- eye wash bottles
- extra copy of the Health and Safety Plan

These will be located on-site in the field office of the Project Supervisor and/or the SSHO.

## Section 11.0 Special Precautions

### Section 11.1 Heat Stress/Cold Injury Protection Program

Formal training in prevention of heat and/or cold injuries will be provided as part of the site specific training. Informal review of these techniques will be made as part of daily pre-work briefings. Any person who experiences signs of heat related distress will be instructed to stop work immediately. Medical attention will be sought if there is any doubt that prompt and full recovery will result without it. Symptoms of heat related distress include muscle cramps, pale and clammy or hot, dry and flushed skin, confusion, disorientation and incoherent speech, nausea and/or convulsions.

### Section 11.2 Heavy Machinery/Equipment

Site employees must remain aware of those site activities that involve the use of heavy equipment and machinery. Appropriate PPE will be determined by site conditions.

### Section 11.3 Construction Materials and Site Refuse

All construction materials and site refuse will be contained in appropriate areas or facilities. Site personnel should make certain that soil spoils, cuttings, etc. are not scattered throughout the area of activity and that trash and scrap materials are immediately and properly disposed of.

### Section 11.4 Additional Safety Practices

The following are important safety precautions which will be enforced during this work:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases that probability of hand-to-mouth transfer and ingestion of material is prohibited in the exclusion and decontamination zones. Smoking is prohibited anywhere in the work area.
- Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activity.
- Contact with potentially contaminated surfaces should be avoided whenever possible. One should not walk through puddles, mud, or other discolored surfaces; kneel on ground, lean, sit or place equipment on drums, containers, vehicles, or the ground.
- If needed, respirators will be issued for the exclusive use of one worker and will be cleaned and disinfected after each use by the worker.
- Air-purifying respirators (if needed) will be inspected daily by the SSHO.
- If needed, cartridges for air-purifying respirators in use will be changed daily at a minimum.
- No excessive facial hair which interferes with the effectiveness of a respirator will be permitted on personnel required to wear respiratory protection equipment. The respirator must seal against the face so that the wearer receives air only through the air purifying cartridges attached to the respirator. Fit testing will be performed prior to respirator use to ensure a proper seal is obtained by the wearer.

- Medicine and alcohol can intensify as well as mask the effect from exposure to certain compounds. Controlled substances and alcoholic beverages must not be consumed by personnel involved in the project. Consumption of prescribed drugs must be at the direction of a physician familiar with the person's work.
- Activities in the exclusion zone will be conducted using the "Buddy System". The Buddy is another worker fully dressed in the appropriate PPE, who can perform the following activities:
  - Provide his/her partner with assistance:
  - Observe his/her partner for signs of chemical or heat exposure;
  - Periodically check the integrity of his/her partner's PPE; and
  - Notify others if emergency help is needed.
- Work areas for various operational activities should be established.
- Personnel and equipment in the work areas should be minimized, consistent with effective site operations.
- Procedures for leaving the work area must be planned and implemented prior to going to the site. Work areas and decontamination procedures and locations must be established on the basis of prevailing site conditions.
- Safety gloves and boots will be taped to appropriate PPE if needed.
- Unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.

#### 11.5 Daily Log Contents

The Project Manager and the SSHO will establish a system appropriate to the site, the work and the work zones that will record, at a minimum, the following information: Personnel on the site, their arrival and departure times and their destination on the site; Incidents and unusual activities that occur on the site such as, but not limited to, accidents, spills, breaches of security, injuries, equipment failures and weather related problems; Conversations that may affect the work such as: 1. Media Visits, 2. Safety and Health Inspections by the SSHO and external agencies, 3. Owner / Agent Meetings, 4. Employee / Union Meetings; Changes to the Work Plan and the Health and Safety Plan; Daily Information generated such as: 1. Changes to Work and Health and Safety Plans, 2. Work accomplished and the current site status, 3. Air monitoring results.

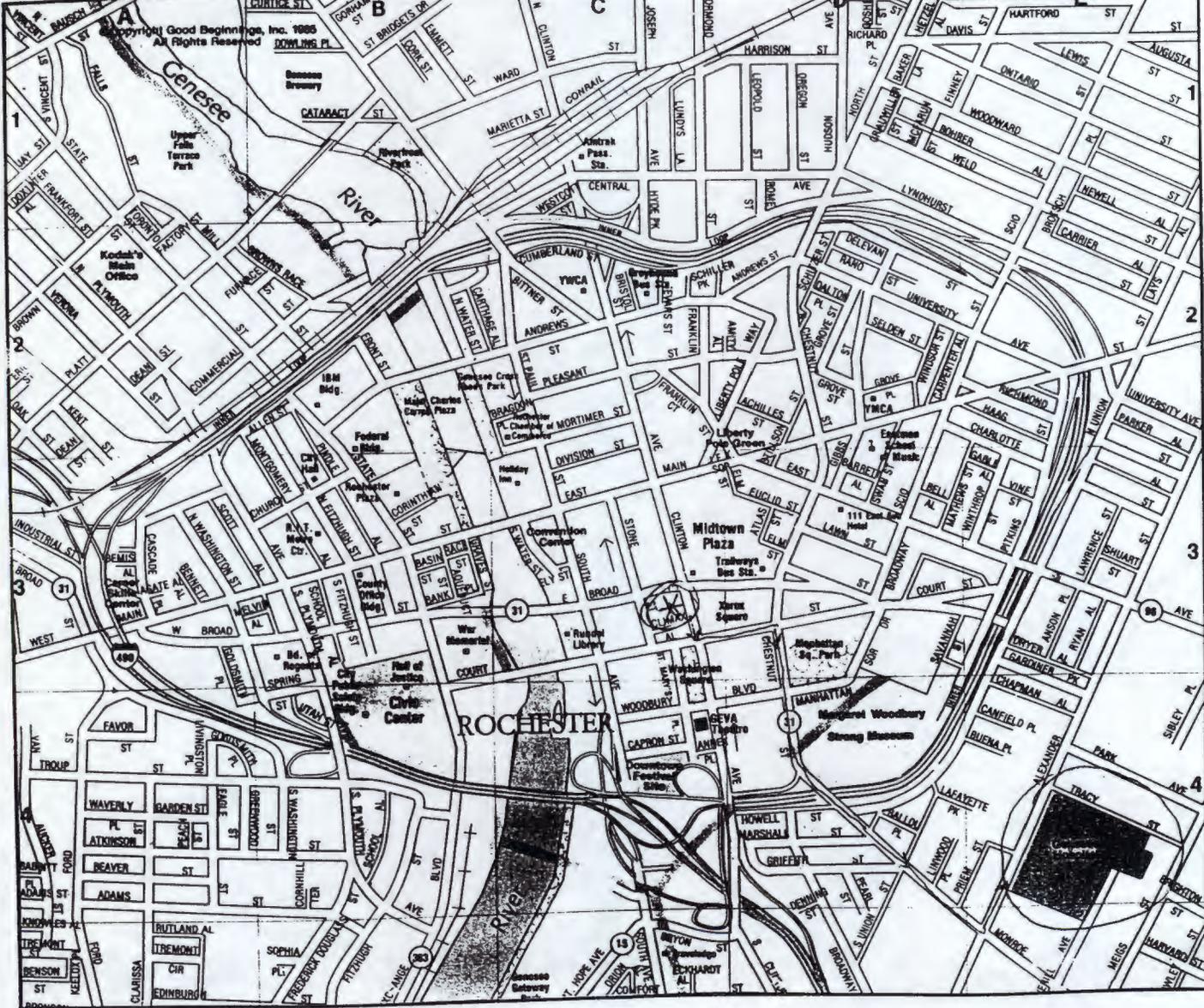
#### 11.6 Plan Acknowledgment

All site personnel have read the above plan are familiar with its provisions.

	PRINTED NAME	SIGNATURE
Site Safety and Health Officer	_____	_____
Project Manager	_____	_____
Field Engineer	_____	_____
Other Site Personnel	_____	_____
	_____	_____
	_____	_____



- Grayhound Bus Station A-2
  - Kodak's Main Offices C-3
  - Lincoln First Bank C-3
  - Midtown Plaza C-3
  - Rochester Chamber of Commerce C-2
  - Comstock B-3
  - BT Metro Center C-3
  - Rounded Library C-3
  - Strong Museum D-4
  - Trucks Bus Station D-3
  - Warren Square D-3
  - YMCA D-2
- Parks
  - Downtown Festival Site C-4
  - Genesee Crossroads Park B-2
  - Genesee Gateway Park C-3
  - Liberty Polo Grounds B-2
  - Major Charles Carroll Plaza D-3
  - Stambutan Square Park B-1
  - Webster Park C-3
  - Washington Square B-3
- Basil St B-3
  - Bausch St A-4
  - Beaver St A-4
  - Bell St D-3
  - Bemis St A-3
  - Bennett St A-3
  - Benson St A-5
  - Britner St C-2
  - Bohrer St D-1
  - Bradford Pl C-2
  - Brighton St E-4
  - Bristol St C-2
  - Broad St A-3
  - Broad St C-3
  - Broad St W A-3
  - Broadway D-3, D-5
  - Bronson Ave A-5
  - Brotsch Pl E-2
  - Brown St A-2
  - Browns RACK B-2
  - Buana Pl E-4
  - Byron St C-5
- Commercial St A-2
  - Connahan St B-3
  - Cork St B-1
  - Cornhill Ter B-4
  - Court St B-3
  - Court St D-3
  - Curtice St B-1
  - Dalton Pl D-2
  - Dean St D-1
  - Dean St A-2
  - Delevan St D-2
  - Denning St D-4
  - Division St C-3
  - Dowling Pl B-1
  - Doxlating Pl A-1
  - Dryer St E-3
  - Eagle St A-4
  - East Ave D-3
  - Eckhardt St C-5
  - Edinburgh St A-5
  - Emmett St B-1
- Garden St A-4
  - Gardner Pl E-3
  - Gibbs St D-3
  - Goldsmith Pl A-3, A-4
  - Gorham St B-1
  - Goshoff St D-1
  - Grawiller St D-1
  - Graves St B-3
  - Greenwood St A-4
  - Griffith St D-4
  - Grove Pl D-2
  - Grove St D-2
  - Haag St E-2
  - Harrison St D-1
  - Harford St E-1
  - Harvard St E-5
  - Hecia St C-5
  - Hetzl St D-1
  - Howell St D-4
  - Hudson Ave D-1
  - Hudon Pl C-1
  - Industrial St A-3
- Main St W A-3
  - Manhattan Sq Dr D-4
  - Marietta St C-1
  - Marshall St C-1
  - Mathews St D-3
  - McFarun St D-1
  - Meigs St E-5
  - Melvin St A-3
  - Mitt St A-2
  - Montro Ave E-5
  - Montgomery Pl B-2
  - Mortimer St C-2
  - Mt. Hope Ave C-5
  - Newell St E-1
  - North St D-1
  - Oak St A-2
  - Ontario St E-1
  - Oregon St D-1
  - Orion St C-5
  - Ormond St C-1
  - Park Ave E-4
  - Parker Pl E-2
- St. Mary's Pl C-3
  - St. Paul St C-2
  - Savannah St D-3
  - Schiller Pl C-2
  - Schwarz St D-3
  - School St B-3, B-4
  - Sci. St D-3
  - Scott St A-3
  - Selden St D-2
  - Shaw St E-3
  - Sibley Pl E-4
  - Skuse St D-1
  - Sophia Pl B-5
  - South Ave C-3, C-5
  - Spring St B-3
  - State St A-1, B-3
  - Stillson St D-2, D-3
  - Stone St C-3
  - Swan St D-3
  - Toronto St A-1
  - Tracy St E-4
  - Tremont Cir A-5



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**APPENDIX A**  
**Complete Analytical Results**

Volatile Aromatic Analysis Report For Soil

Client: Marcor  
Location: B & L Building  
Field ID: Tower South Wall  
Sample Type: Soil  
Method: EPA Method 5030/8021

Sample Date: 12/03/93  
Sample Time: 3:45PM  
Date Received: 12/03/93  
Date Analyzed: 12/06/93  
Lab Sample No: 4328  
Lab Project No: GE1703  
Client Job No: LeChase - B & L Bldg.

VOLATILE AROMATICS	RESULTS (ug/g)
Benzene	ND < 3.3
Ethylbenzene	ND < 3.3
Toluene	ND < 3.3
m,p - Xylene	ND < 3.3
o Xylene	ND < 3.3
Isopropylbenzene	3.5
Propylbenzene	11.1
p-Isopropyltoluene	12.1
1,2,4-Trimethylbenzene	147.4
1,3,5-Trimethylbenzene	29.6
n-Butylbenzene	17.2
sec-Butylbenzene	11.0
tert Butylbenzene	18.6
Naphthalene	ND < 3.3

Data File: 507.D

APPROVED BY

  
Laboratory Director

ND denotes Not Detected

Volatile Halocarbon Analysis Report For Soil

Client:	Marcor	Sample Date:	12/03/93
		Sample Time:	3:45PM
Location:	B & L Building	Date Received:	12/03/93
		Date Analyzed:	12/06/93
Field ID:	Tower South Wall	Lab Sample No:	4328
Sample Type:	Soil	Lab Project No:	GE1703
		Client Job No:	LeChase - B & L Bldg.
Method:	EPA Method 5030/8010		

VOLATILE HALOCARBONS	RESULTS (ug/g)
Bromodichloromethane	ND < 3.3
Bromomethane	ND < 3.3
Bromoform	ND < 3.3
Carbon tetrachloride	ND < 3.3
Chloroethane	ND < 3.3
Chloromethane	ND < 3.3
2-Chloroethyl vinyl ether	ND < 3.3
Chloroform	ND < 3.3
Dibromochloromethane	ND < 3.3
1,1-Dichloroethane	ND < 3.3
1,2-Dichloroethane	ND < 3.3
1,1-Dichloroethene	ND < 3.3
trans-1,2-Dichloroethene	ND < 3.3
1,2-Dichloropropane	ND < 3.3
cis-1,3-Dichloropropene	ND < 3.3
trans-1,3-Dichloropropene	ND < 3.3
1,2-Dichloropropane	ND < 3.3
Methylene chloride	ND < 3.3
1,1,2,2-Tetrachloroethane	134.9
Tetrachloroethene	ND < 3.3
1,1,1-Trichloroethane	ND < 3.3
1,1,2-Trichloroethane	ND < 3.3
Trichloroethene	ND < 3.3
Vinyl Chloride	ND < 3.3

Data File: 507.D

APPROVED BY   
 Laboratory Director

ND denotes Not Detected

**APPENDIX B**  
**Specific Chemical Compound Information**

## TOXICITY DATA:

ipr-mus LD50: 2 g/kg  
ihl-frg LCLo: 117 mg/m<sup>3</sup>/1H  
orl-rat LD50: 770 mg/kg

## CODEN:

EJTXAZ 7,247,74  
AISFAR 15,1,37  
ARSIM\* 20,10,66

Reported in EPA TSCA Inventory. Community Right To Know List.

OSHA PEL: TWA 200 ppm

ACGIH TLV: TWA 200 ppm; STEL 250 ppm

THR: Poison by inhalation. Moderately toxic by ingestion and other routes. When heated to decomposition it emits highly toxic fumes of Cl<sup>-</sup>. See also ACETYLENE COMPOUNDS; and CHLORINATED HYDROCARBONS, ALIPHATIC.

## ACK000

HR: 2

## trans-ACETYLENE DICHLORIDE

CAS: 156-60-5

NIOSH: KV 9400000

mf: C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub> mw: 96.94

PROP: Colorless liquid, pleasant odor. Mp: -50°, bp: 48°, flash p: 36°F, autoign temp: 860°F, lel: 9.7%, uel: 12.8%, d: 1.2743 @ 25°/4°, vap press: 400 mm @ 30.8°, vap d: 3.34.

## SYNS:

trans-DICHLOROETHYLENE  
trans-1,2-DICHLOROETHYLENE

RCRA WASTE NUMBER U079

## TOXICITY DATA:

mma-smc 80 mmol/L  
orl-mus LD50: 2122 mg/kg  
ihl-hmn TCLo: 4800 mg/m<sup>3</sup>/  
10M:CNS

ipr-rat LD50: 7536 mg/kg  
ihl-mus LCLo: 75000 mg/m<sup>3</sup>/2H  
ipr-mus LD50: 4019 mg/kg  
ihl-cat LCLo: 43000 mg/m<sup>3</sup>/6H

## CODEN:

TCMUD8 4,365,84  
DCTODJ 8,373,85  
AHBAAM 116,131,36

TXCYAC 7(2),141,77  
AHBAAM 116,131,36  
TXCYAC 7,141,77  
AHBAAM 116,131,36

Reported in EPA TSCA Inventory.

THR: Mildly toxic by inhalation and other routes. Human systemic effects by inhalation: sleep, hallucinations and distorted perceptions. Mutagenic data. Exposure to high vapor concentration can cause nausea, vomiting, weakness, tremor and cramps. Recovery is usually prompt following removal from exposure. Dermatitis may result from defatting action on skin. Dangerous fire hazard when exposed to heat, flame or oxidizers. Moderate explosion hazard in the form of vapor when exposed to flame. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. See also CHLORIDES; CHLORINATED HYDROCARBONS, ALIPHATIC; and ACETYLENE COMPOUNDS. To fight fire use water, foam, CO<sub>2</sub>, dry chemical.

## ACK250

HR: 3

## ACETYLENE TETRABROMIDE

CAS: 79-27-6

NIOSH: KI 8225000

DOT: 2504

mf: C<sub>2</sub>H<sub>2</sub>Br<sub>4</sub> mw: 345.68

PROP: Colorless to yellow liquid. Bp: 151° @ 54 mm, fp: -1°, d: 2.9638 @ 20°/4°, autoign temp: 635°F.

## SYNS:

ACETYLENE TETRABROMIDE  
(ACGIH, DOT)  
MUTHMANN'S LIQUID  
TBE  
1,1,2,2-TETRABROMAETHAN  
(GERMAN)  
TETRABROMOACETYLENE

1,1,2,2-TETRABROMOETANO  
(ITALIAN)  
S-TETRABROMOETHANE  
1,1,2,2-TETRABROMOETHANE  
1,1,2,2-TETRABROOMETHAAN  
(DUTCH)

## TOXICITY DATA:

skn-rbt 500 mg/24H MOD  
eye-rbt 100 mg MLD  
dnr-esc 10 µL/disc  
orl-rat LD50: 1100 mg/kg  
ihl-rat LC50: 549 mg/m<sup>3</sup>/4H  
orl-mus LD50: 269 mg/kg  
skn-rat LD50: 5250 mg/kg  
orl-gpg LD50: 400 mg/kg  
skn-mus TDL<sub>0</sub>: 130 g/kg/74W-1:  
NEO

## CODEN:

AIHAAP 24,28,63  
AIHAAP 24,28,63  
MUREAV 41,61,76  
85GMAT -,107,82  
85GMAT -,107,82  
85GMAT -,107,82  
85GMAT -,107,82  
AIHAAP 30,251,69  
JJIND8 63,1433,79

orl-rbt LD50: 400 mg/kg

AMIHBC 2,407,50

Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

OSHA PEL: TWA 1 ppm

ACGIH TLV: TWA 1 ppm

DFG MAK: 1 ppm (14 mg/m<sup>3</sup>)

DOT Classification: ORM-A, Label: None

THR: Poison by inhalation and ingestion. An experimental neoplastigen. Mutagenic data. It is an eye and skin irritant and a narcotic. When heated it emits highly toxic fumes of carbonyl bromide and Br<sup>-</sup>. See also ACETYLENE COMPOUNDS and BROMIDES.

## ACK500

HR: 3

## \* ACETYLENE TETRACHLORIDE

CAS: 79-34-5

NIOSH: KI 8575000

DOT: 1702

mf: C<sub>2</sub>H<sub>2</sub>Cl<sub>4</sub> mw: 167.84

PROP: Heavy, colorless, mobile liquid; chloroform-like odor. Mp: -43.8°, bp: 146.4°, d: 1.600 @ 20°/4°.

## SYNS:

BONOFORM  
CELLON  
1,1,2,2-CZTEROCHLOROETAN  
(POLISH)  
1,1-DICHLORO-2,2-DICHLORO-  
ETHANE  
NCI-C03554  
RCRA WASTE NUMBER U209  
TCE  
TETRACHLOROETHANE  
1,1,2,2-TETRACHLOROETHANE  
(ACGIH, DOT)

1,1,2,2-TETRACHLOORETHAAN  
(DUTCH)  
1,1,2,2-TETRACHLORAETHAN  
(GERMAN)  
1,1,2,2-TETRACHLOROETHANE  
(FRENCH)  
sym-TETRACHLOROETHANE  
1,1,2,2-TETRACHLOROETHANE  
(DUTCH)  
1,1,2,2-TETRACLOROETANO  
(ITALIAN)  
TETRACHLORURE D'ACETYLENE  
(FRENCH)  
WESTRON

## TOXICITY DATA:

mno-sat 200  $\mu$ L/plate  
 mma-sat 200  $\mu$ L/plate  
 dnr-esc 10  $\mu$ L/plate  
 orl-rat TDLo: 800 g/kg  
 ihl-mus LCLo: 9 g/m<sup>3</sup>/40M  
 ihl-cat LDLo: 19 g/m<sup>3</sup>/45M  
 orl-rat TDLo: 42 g/kg/78W-1:  
 ETA  
 orl-mus TDLo: 55 g/kg/78W-1:  
 CAR  
 orl-mus TD: 110 g/kg/78W-1:  
 CAR  
 orl-hmn TDLo: 30 mg/kg: CNS  
 ihl-hmn TCLo: 1000 mg/m<sup>3</sup>/  
 30M: CNS  
 ihl-rat LCLo: 1000 ppm/4H  
 ipr-mus LDLo: 30 mg/kg  
 orl-dog LDLo: 300 mg/kg  
 ivn-dog LDLo: 50 mg/kg  
 scu-rbt LDLo: 500 mg/kg

## CODEN:

NIOSH\*  
 NIOSH\*  
 EVHPAZ 21,79,77  
 85GMAT -,107,82  
 AHBAAM 116,131,36  
 AHBAAM 116,131,36  
 NCITR\* NCI-CG-TR-  
 27,78  
 NCITR\* NCI-CG-TR-  
 27,78  
 NCITR\* NCI-CG-TR-  
 27,78  
 PCOC\*\* -,1110,66  
 AHBAAM 116,131,36  
 JIHTAB 31,343,49  
 CBCCI\* 4,378,52  
 AJHYA2 16,325,32  
 QJPPAL 7,205,34  
 QJPPAL 7,205,34

IARC Cancer Review: Animal Limited Evidence IMEMDT 20,477,79; NCI Carcinogenesis Bioassay (gavage); Clear Evidence: mouse NCITR\* NCI-CG-TR-27,78; Some Evidence: rat NCITR\* NCI-CG-TR-27,78. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program. Community Right To Know List.

OSHA PEL: TWA 5 ppm (skin).

DFG MAK: 1 ppm (1 mg/m<sup>3</sup>)

NIOSH REL: TWA 1 ppm

DOT Classification: IMO: Poison B; Label: Poison

THR: Poison by inhalation, ingestion and intraperitoneal routes. Moderately toxic by several other routes. An experimental tumorigen and carcinogen. Mutagenic data. Human central nervous system effects by ingestion and inhalation: general anesthesia, somnolence, hallucinations and distorted perceptions. Considered the most toxic of the common chlorinated hydrocarbons. Considered to be a very severe industrial hazard and its use has been restricted or even forbidden in certain countries. It is not an inert solvent. Reacts violently with N<sub>2</sub>O<sub>4</sub>; 2,4-dinitrophenyl disulfide and on contact with sodium or potassium. When heated in contact with solid potassium hydroxide, spontaneously flammable chloro- or dichloro-acetylene gas is evolved. Any water can cause appreciable hydrolysis, even at room temperature, and both hydrolysis and oxidation become comparatively rapid above 110°. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>.

It has a fairly strong irritating action on mucous membranes of the eyes and upper respiratory tract; a concentration of 3 ppm produces a detectable odor, thus an initial warning effect. Its narcotic action is stronger than that of chloroform, but because of its low volatility, narcosis is less severe and much less common in industrial poisoning than in the case of other chlorinated hydrocarbons. The toxic action of this material is chiefly on the liver where

it produces acute yellow atrophy and cirrhosis. Fatty degeneration of the kidneys and heart, hemorrhage into the lungs and serous membranes, and edema of the brain have also been found in fatal cases. Some reports indicate a toxic action on the central nervous system with changes in the brain and in the peripheral nerves. The effect on the blood is one of hemolysis with appearance of young cells in the circulation and a monocytosis. Due to its solvent action on the natural skin oils, dermatitis is not uncommon.

The initial symptoms resulting from exposure to the vapor are lacrimation, salivation and irritation of the nose and throat. Continued exposure to high concentrations results in restlessness, dizziness, nausea, vomiting and narcosis. The latter, however, is rare in industry. More commonly, exposure is less severe and most complaints are vague and related to the digestive and nervous systems. The patient's symptoms gradually progress to a more serious illness with development of toxic jaundice, liver tenderness, etc., and possibly albuminuria and edema. With serious liver damage, the jaundice increases and toxic symptoms appear with somnolence, delirium, convulsions and coma usually preceding death. See also ACETYLENE COMPOUNDS; and CHLORIDES. For further information see Vol. 5, No. 4 of *DPIM Report*.

## ACK875

HR: 3

## ACETYL ENHEPTIN

CAS: 140-40-9

NIOSH: XJ 1570000

mf: C<sub>5</sub>H<sub>5</sub>N<sub>3</sub>O<sub>3</sub>S mw: 187.19

PROP: Needles from alc, elongated plates from acetic acid. Mp: 264-265°. The commercial product may be yellow. Sol in aq solns of NaOH and NH<sub>3</sub> with deep orange color.

## SYNS:

2-ACETAMIDO-5-NITROTHIAZOLE	N-(5-NITRO-2-THIAZOLYL)
ACINITRAZOL	ACETAMIDE
ACINITRAZOLE	PLEOCIDE
AMETOTERINA	TRICHLORAD
AMINITROZOL	TRICHOCID
AMINITROZOLE	TRICHOMAN
CYZINE PREMIX	TRICHORAD
ENHEPTIN A	TRICHORAL
GYNOPON	TRICOGEN
LAVOFLAGIN	TRICOLAVAL
NITAZOL	TRICORAL
NITAZOLE	TRICOSTERIL
NITHIAMIDE	TRIKOLAVAL
5-NITRO-2-ACETILAMINO-	TRITHEON
THIAZOLO (ITALIAN)	

## TOXICITY DATA:

mno-sat 500 nmol/L  
 mmo-esc 20  $\mu$ mol/L  
 mmo-klp 20  $\mu$ mol/L  
 mrc-smc 200 ppm  
 orl-mus LD50: 1000 mg/kg  
 orl-dog LD50: 125 mg/kg  
 orl-ckn LD50: 800 mg/kg  
 orl-trk LD50: 600 mg/kg

## CODEN:

MUREAV 118,153,83  
 MUREAV 118,153,83  
 MUREAV 118,153,83  
 MUREAV 118,153,83  
 FRPSAX 19,301,64  
 ANTCAO 5,540,55  
 ANTCAO 5,540,55  
 ANTCAO 5,540,55

ivn-dog LDLo: 400 µg/kg  
 scu-cat LDLo: 700 µg/kg  
 ivn-rbt LDLo: 250 µg/kg  
 scu-gpg LDLo: 400 µg/kg  
 ivn-ckn LD50: 1 mg/kg

AIPTAK 106,395,56  
 AIPTAK 106,395,56  
 AIPTAK 106,395,56  
 AIPTAK 106,395,56  
 AIPTAK 120,53,59

THR: A deadly poison by subcutaneous and intravenous routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and I<sup>-</sup>.

**COE250**

HR: 3

**CUCURBITACIN E**

CAS: 18444-66-1

NIOSH: RC 6300000

mf: C<sub>32</sub>H<sub>44</sub>O<sub>8</sub> mw: 556.76**SYNS:**

CUCURBITACINE-E

α-ELATERIN

**TOXICITY DATA:**

ipr-mus LD50: 2 µg/kg  
 orl-mus LD50: 340 mg/kg

**CODEN:**

12VXA5 8,297,68  
 CHTPBA 5,205,70

THR: Poison by ingestion and intraperitoneal routes. A poison. When heated to decomposition it emits acrid smoke and irritating fumes.

**COE500**

HR: 2

**CUMALDEHYDE**

CAS: 122-03-2

NIOSH: CU 7000000

mf: C<sub>10</sub>H<sub>12</sub>O mw: 148.22

PROP: Found in at least 50 essential oils such as cumin, eucalyptus species, cinnamon, boldo and rue, and as main constituent of oil of *Pectis papposa harn* and *gray* (FCTXAV 12,385,74).

**SYNS:**

p-CUMIC ALDEHYDE  
 CUMALDEHYDE  
 CUMINALDEHYDE  
 CUMINIC ALDEHYDE  
 CUMINYL ALDEHYDE

p-ISOPROPYLBENZALDEHYDE  
 4-ISOPROPYLBENZALDEHYDE  
 p-ISOPROPYLBENZENECARBOX-  
 ALDEHYDE  
 4-(1-METHYLETHYL)-BENZAL-  
 DEHYDE (9CI)

**TOXICITY DATA:**

skn-rbt 500 mg/24H  
 orl-rat LD50: 1390 mg/kg  
 orl-mus LD50: 2400 mg/kg  
 skn-rbt LD50: 2800 mg/kg

**CODEN:**

FCTXAV 12,395,74  
 FCTXAV 2,327,64  
 BJOAK 34,1196,40  
 FCTXAV 12,395,74

Reported in EPA TSCA Inventory.

THR: Moderately toxic by ingestion and skin contact. A skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALDEHYDES.

**COE750**

HR: 2

**\* CUMENE**

CAS: 98-82-8

NIOSH: GR 8575000

DOT: 1918

mf: C<sub>9</sub>H<sub>12</sub> mw: 120.21

PROP: Colorless liquid. Mp: -96.0°, bp: 152°, flash p: 111°F, d: 0.864 @ 20°/4°, vap press: 10 mm @ 38.3°, autoign temp: 795°F, lel: 0.9%, uel: 6.5%, vap d: 4.1.

**SYNS:**

BENZENE ISOPROPYL

CUMEEN (DUTCH)

CUM

2-FENILPROPANO (ITALIAN)

2-FENYL-PROPAAN (DUTCH)

ISOPROPYLBENZEEN (DUTCH)

ISOPROPILBENZENE (ITALIAN)

\* ISOPROPYL BENZENE

ISOPROPYLBENZOL

ISOPROPYL-BENZOL (GERMAN)

2-PHENYLPROPANE

RCRA WASTE NUMBER U055

**TOXICITY DATA:**

skn-rbt 10 mg/24H open MLD  
 eye-rbt 86 mg MLD

ihl-hmn TClO: 200 ppm:

NOSE, CNS, PUL

orl-rat LD50: 1400 mg/kg

ihl-rat LC50: 8000 ppm/4H

ihl-mus LC50: 24700 mg/m<sup>3</sup>/2H

skn-rbt LD50: 12300 mg/kg

**CODEN:**

AMIHBC 4,119,51

AMIHAB 14,387,56

TGNCCL 2,39,61

AMIHAB 14,387,56

AMIHBC 4,119,51

85GMAT -,78,82

AMIHBC 4,119,51

Community Right To Know List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

OSHA PEL: TWA 50 ppm (skin)

ACGIH TLV: TWA 50 ppm (skin)

DFG MAK: 50 ppm (245 mg/m<sup>3</sup>)

DOT Classification: Flammable or Combustible Liquid; Label: Flammable Liquid

THR: Moderately toxic by ingestion. Mildly toxic by inhalation and skin contact. Human systemic effects by inhalation: an antipsychotic, unspecified changes in the sense of smell and respiratory system. An eye and skin irritant. Potential narcotic action. Central nervous system depressant. There is no apparent difference between the toxicity of natural cumene or that derived from petroleum. See also BENZENE and TOLUENE. Flammable when exposed to heat or flame; can react with oxidizing materials. Violent reaction with HNO<sub>3</sub>; oleum; chlorosulfonic acid. To fight fire, use foam, CO<sub>2</sub>, dry chemical. For further information, see Vol. 4, No. 1 of *DPIM Report*.

**COF000**

HR: 2

**CUMENE ALDEHYDE**

CAS: 93-53-8

NIOSH: CY 1575000

mf: C<sub>9</sub>H<sub>10</sub>O mw: 134.19**SYNS:**

α-FORMYLETHYLBENZENE

HYACINTHAL

HYDRATROPA ALDEHYDE

HYDRATROPALDEHYDE

HYDRATROPIC ALDEHYDE

α-METHYL PHENYLACETALDE-  
HYDE

α-METHYL-α-TOLUIC ALDEHYDE

2-PHENYLPROPANAL

α-PHENYL PROPIONALDEHYDE

2-PHENYL PROPIONALDEHYDE

**TOXICITY DATA:**

orl-rat LD50: 2800 mg/kg

**CODEN:**

FCTXAV 2,327,64

Reported in EPA TSCA Inventory.

## IKB000

HR: 3

## ISOCARAMIDINE SULFATE

CAS: 581-88-4

NIOSH: NW 7010000

mf: C<sub>10</sub>H<sub>13</sub>N<sub>3</sub>·1/2H<sub>2</sub>O<sub>4</sub>S

mw: 224.30

## SYNS:

DEBRISOQUIN SULFATE

RO 5-3307/1

DECLINAX

TENDOR

3,4-DIHYDRO-2-(1H)-ISOQUINO-

LINECARBOXIMIDAMIDE

SULFATE (2:1)

## TOXICITY DATA:

orl-rat LD50: 610 mg/kg

orl-mus LD50: 235 mg/kg

ipr-mus LD50: 132 mg/kg

scu-mus LD50: 136 mg/kg

ivn-mus LD50: 31700 µg/kg

## CODEN:

OYYAA2 17,129,79

CTCEA9 6,299,64

CTCEA9 6,299,64

CTCEA9 6,299,64

CTCEA9 6,299,64

THR: Poison by ingestion, subcutaneous, intravenous and intraperitoneal routes. An antihypertensive agent. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and SO<sub>x</sub>.

## IKC000

HR: 3

## ISOCARBOXAZID

CAS: 59-63-2

NIOSH: NY 2625000

mf: C<sub>12</sub>H<sub>13</sub>N<sub>3</sub>O<sub>2</sub>

mw: 231.28

PROP: Crystals from methanol, practically tasteless. Mp: 106°, very sltly sol in hot H<sub>2</sub>O; sltly sol in alc, glycerol, propylene glycol.

## SYNS:

BENZAIDE

ISOCARBOSSAZIDE

N'-BENZYL N-METHYL-5-ISOXAZOLECARBOXYLHYDRAZIDE-3

ISOCARBOXAZIDE

1-BENZYL-2-(5-METHYL-3-ISOXAZOYL-CARBONYL)HYDRAZINE

ISOCARBOXYZID

1-BENZYL-1-(5-METHYL-3-ISOXAZOYL-CARBONYL)HYDRAZINE

MARAPLAN

1-BENZYL-1-(5-METHYL-3-ISOXAZOYL-CARBONYL)HYDRAZINE

MARPLAN

1-BENZYL-1-(5-METHYL-3-ISOXAZOYL-CARBONYL)HYDRAZINE

MARPLON

1-BENZYL-1-(5-METHYL-3-ISOXAZOYL-CARBONYL)HYDRAZINE

5-METHYL-3-ISOXAZOLECARBOXYLIC ACID-2-BENZYLHYDRAZIDE

BMIH

ENERZER

ISOCARBONAZID

RO 5-0831

## TOXICITY DATA:

oms-bcs 10 mmol/L

dnd-mus-ipr 350 µmol/kg

dnd-mus-orl 322 mg/kg/5D-C

sce-mus-ipr 49,mg/kg

ipr-mus TDLo: 100 mg/kg (10D preg): TER

orl-rat LD50: 280 mg/kg

ipr-rat LD50: 199 mg/kg

orl-mus LD50: 193 mg/kg

ipr-mus LD50: 138 mg/kg

scu-mus LD50: 150 mg/kg

orl-dog LDLo: 40 mg/kg

orl-mky LD50: 160 mg/kg

orl-cat LD50: 56 mg/kg

## CODEN:

MUREAV 5,343,68

CNREA8 41,1469,81

JTEHD6 9,287,82

JTEHD6 9,287,82

CAJPBD 3,2,63

ANYAA9 80,626,59

27ZQAG -,240,72

ANYAA9 80,626,59

JMPCAS 2,133,60

TXAPA9 39,141,77

ANYAA9 80,626,59

ANYAA9 80,626,59

SPOAH 38,47,65

THR: A poison by ingestion, intraperitoneal, and subcutaneous routes. An experimental teratogen. Mutagenic data. A pharmaceutical and veterinary drug. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

## IKE000

HR: 3

## ISOCROTYL CHLORIDE

CAS: 513-37-1

NIOSH: UC 8045000

mf: C<sub>4</sub>H<sub>7</sub>Cl

mw: 90.56

PROP: Liquid. D: 0.919 @ 20°/4°, bp: 68°.

## SYNS:

α-CHLOROISOBUTYLENE

β,β-DIMETHYLVINYL CHLORIDE

1-CHLORO-2-METHYLPROPENE

NCI-C54819

1-CHLORO-2-METHYL-1-PROPENE

## TOXICITY DATA:

ihl-mus LCLo: 181 g/m<sup>3</sup>/10M

## CODEN:

UCPHAQ 1,119,38

NTP Carcinogenesis Studies (gavage); Clear Evidence: mouse, rat NTPTR\* NTP-TR-316,86.

THR: Mildly toxic by inhalation. An experimental carcinogen. A local irritant and narcotic in high concentration. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>.

## IKF000

HR: 2

## ISOCTENE

CAS: 11071-47-9

NIOSH: SB 2715000

DOT: 1216

mf: C<sub>8</sub>H<sub>16</sub>

mw: 112.24

SYN: 2,2,4-TRIMETHYL-1-PENTENE

DOT Classification: Label: Flammable Liquid

THR: A dangerous fire hazard when exposed to heat or flame. When heated to decomposition it emits acrid smoke and fumes.

## IKG000

HR: 3

## \* ISOCUMENE

CAS: 103-65-1

NIOSH: DA 8750000

DOT: 2364

mf: C<sub>9</sub>H<sub>12</sub>

mw: 120.21

PROP: Clear liquid. Insol in water; misc in alc and ether. Mp: -99.5°, bp: 159.2°, flash p: 86°F (CC), d: 0.862, vap press: 10 mm @ 43.4°, vap d: 4.14, autoign temp: 842°F, lel: 0.8%, uel: 6%.

## SYNS:

1-PHENYLPROPANE

PROPYL BENZENE (DOT)

\* n-PROPYLBENZENE

## TOXICITY DATA:

orl-rat LD50: 6040 mg/kg

ihl-mus LCLo: 20 g/m<sup>3</sup>

## CODEN:

FCTXAV 2,327,64

AEPPEAE 143,223,29

Reported in EPA TSCA Inventory.

DOT Classification: Flammable or Combustible Liquid; Label: Flammable Liquid

THR: Mildly toxic by by ingestion and inhalation. A very dangerous fire hazard when exposed to heat, flame or oxidizers; can react with oxidizing materials. A moderate ex-

plosion hazard in the form of vapor when exposed to heat or flame. To fight fire, use foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and fumes.

**IKG349**  
**ISOCYANATES**

HR: D

THR: Compounds containing the isocyanate radical —NCO. Derivatives of isocyanic acid (cyanic acid). Usually the term refers to a diisocyanate. Inorganic isocyanates are only slightly toxic. Organic isocyanates (diisocyanates) can cause local irritation and allergic reactions. When heated to decomposition they emit toxic fumes of NO<sub>x</sub>.

**IKG700**  
**2-ISOCYANATOETHYL METHACRYLATE**

HR: 3

CAS: 30674-80-7 NIOSH: OZ 4950000  
mf: C<sub>7</sub>H<sub>9</sub>N<sub>3</sub>O<sub>3</sub> mw: 155.17

## SYNS:

β-ISOCYANATOETHYL METHACRYLATE METHACRYLOYLOXYETHYL ISOCYANATE

TOXICITY DATA:	CODEN:
ihl-rat TClO: 80 ppb/6H (49D male): REP	DCTODJ 3,381,80
orl-rat LD50: 670 mg/kg	DCTODJ 3,381,80
ihl-rat LC50: 4 ppm/6H	DCTODJ 3,381,80

EPA Extremely Hazardous Substances List. Reported in EPA TSCA Inventory.

THR: Poison by inhalation. Moderately toxic by ingestion. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. See also ESTERS and ISOCYANATES.

**IKH000**  
**ISOCYANIC ACID-2-CHLOROETHYL ESTER**

HR: 2

CAS: 1943-83-5 NIOSH: NQ 8450000  
mf: C<sub>3</sub>H<sub>4</sub>ClNO mw: 105.53

TOXICITY DATA:	CODEN:
dni-hmn: fbr 75 μmol/L	CNREA8 38,1067,78
dnd-ham: lng 13 μmol/L	CNREA8 38,3379,78
ihl-mus LClO: 1000 mg/m <sup>3</sup> /10M	NDRC** -,11,42

EPA Genetic Toxicology Program. Reported in EPA TSCA Inventory.

THR: Moderately toxic by inhalation. Human mutagenic data. When heated to decomposition it emits very toxic fumes of Cl<sup>-</sup> and NO<sub>x</sub>. See also ISOCYANATES and ESTERS.

**IKH099**  
**ISOCYANIC ACID-3,4-DICHLOROPHENYL ESTER**

HR: 3

CAS: 102-36-3 NIOSH: NQ 8760000  
mf: C<sub>7</sub>H<sub>3</sub>Cl<sub>2</sub>NO mw: 188.01

SYN: 3,4-DICHLOROPHENYL ISOCYANATE

TOXICITY DATA:	CODEN:
ihl-mus LClO: 140 mg/m <sup>3</sup> /2M	GTPZAB 13(4),50,69
ihl-rat LClO: 140 mg/m <sup>3</sup> /4M	GTPZAB 13(4),50,69

EPA Extremely Hazardous Substances List.

THR: Poison by inhalation. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup> and NO<sub>x</sub>. See also ISOCYANATES and ESTERS.

**IKH339**  
**ISOCYANIDES**

HR: 3

Cyanide and its compounds are on the Community Right To Know List.

THR: Compounds of the form RN≡C:, also called carbylamines. The acid catalyzed hydrolysis of isocyanides to primary amines and formic acid is very rapid, sometimes explosive. When heated to decomposition they emit toxic fumes of CN<sup>-</sup>.

**IKH669**  
**ISOCYANOAMIDE**

HR: 3

CAS: 4702-38-9  
mf: CH<sub>2</sub>N<sub>2</sub> mw: 42.04

SYN: ISODIAZOMETHANE

THR: A thermally unstable liquid which explodes at 35°C. Upon decomposition it emits toxic fumes of NO<sub>x</sub>. See also AMIDES.

**IKI000**  
**4-ISOCYANO-4'-NITRODIPHENYLAMINE**

HR: D

CAS: 62967-27-5 NIOSH: NQ 9860000  
mf: C<sub>13</sub>H<sub>9</sub>N<sub>3</sub>O<sub>3</sub> mw: 255.25

## SYN:

4-ISOCYANATO-N-(4-NITROPHENYL)BENZENAMINE (9CI) (p-(p-NITROANILINO)PHENYL)ISOCYANIC ACID

TOXICITY DATA:	CODEN:
mno-sat 17 nmol/plate	JMCMAR 20,981,77
mma-sat 17 nmol/plate	JMCMAR 20,981,77

EPA Genetic Toxicology Program.

THR: Mutagenic data. When heated to decomposition it emits toxic fumes of CN<sup>-</sup> and NO<sub>x</sub>. See also ISOCYANATES and NITRO COMPOUNDS OF AROMATIC HYDROCARBONS.

**IKJ000**  
**ISOCYCLOCITRAL**

HR: 1

CAS: 1335-66-6 NIOSH: GW 3400000

SYN: 1-FORMYL-3,5,6-TRIMETHYL-3-CYCLOHEXENE and 1-FORMYL-2,4,6-TRIMETHYL-3-CYCLOHEXENE

**CQH625  
CYHEPTAMIDE****HR: 2**

CAS: 7199-29-3

NIOSH: HO 7878000

mf: C<sub>16</sub>H<sub>15</sub>NO mw: 237.29

PROP: Long needles from acetonitrile. Mp: 193-194°. Sol in chloroform; sparingly sol in methanol, acetone; sltly sol in ethanol, ether. Practically insol in water.

**SYNS:**

AY 8682

BS 7029

CYHEPTAMINE

DIBENZO(a,d)CYCLOHEPTADIENE-  
5-CARBOXAMIDEDIBENZO(a,d)(1,4)-CYCLOHEPTA-  
DIENE-5-CARBOXAMIDE

10,11-DIHYDRO-5H-DIBENZO

(a,d)CYCLOHEPTENE-5-CAR-  
BOXAMIDE

ICI 51426

**TOXICITY DATA:**

orl-rat LD50: 2400 mg/kg

ipr-rat LD50: 2000 mg/kg

orl-mus LD50: 1830 mg/kg

ipr-mus LD50: 630 mg/kg

**CODEN:**

27ZQAG -,68,72

27ZQAG -,68,72

27ZQAG -,68,72

JMCMAR 7,88,64

THR: Moderately toxic by ingestion and intraperitoneal routes. An anticonvulsant. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**CQH750****HR: 3****CYMARIN**

CAS: 508-77-0

NIOSH: GZ 5600000

mf: C<sub>30</sub>H<sub>44</sub>O<sub>9</sub> mw: 548.74**SYNS:**

CYMARINE

3-β-(β-d-CYMAROSYLOXY)-5,14-  
DIHYDROXY-19-OXO-5-β-CARD-  
20(22)-ENOLIDESTROPHANTHIDIN-d-CYMAROSID  
(GERMAN)

K-STROPHANTHIN-α

**TOXICITY DATA:**

ivn-rat LD50: 20 mg/kg

ipr-mus LD50: 12 mg/kg

ivn-cat LDLo: 95 μg/kg

unr-cat LDLo: 110 μg/kg

**CODEN:**

AIPTAK 155,165,65

AIPTAK 155,165,65

MEIEDD 10,397,83

AIPTAK 148,471,64

THR: Poison by intravenous, intraperitoneal and possibly other routes. Used as a cardiotonic. When heated to decomposition it emits acrid smoke and fumes.

**CQ1000****HR: 1****p-CYMENE**

CAS: 99-87-6

NIOSH: GZ 5950000

DOT: 2046

mf: C<sub>10</sub>H<sub>14</sub> mw: 134.24

PROP: Liquid. Mp: -68.2°, bp: 176°, lel: 0.7%, @ 100°, ulc: 30-35, flash p: 117°F (CC), d: 0.86, autoign temp: 817°F, vap d: 4.62, vap press: 1 mm @ 17.3°, flash p: (technical) 127°F, uel (technical): 5.6%. Found in nearly 100 volatile oils including lemongrass, sage, thyme, coriander, star anise, and cinnamon (FCTXAV 12,385,74). Sol in alc, ether, acetone, benzene.

**SYNS:**

CAMPHOGEN

CYMENE

CYMOL

DOLCYMENE

4-ISOPROPYL-1-METHYLBENZENE

\* p-ISOPROPYLTOLUENE

p-METHYL-CUMENE

p-METHYLISOPROPYL BENZENE

1-METHYL-4-ISOPROPYLBENZENE

PARACYMENE

PARACYMOL

**TOXICITY DATA:**

skn-rbt 500 mg/24H MOD

cyt-smc 200 μmol/tube

orl-rat LD50: 4750 mg/kg

**CODEN:**

FCTXAV 12,401,74

HEREAY 33,457,47

FCTXAV 2,327,64

Reported in EPA TSCA Inventory.

DOT Classification: Flammable or Combustible Liquid; Label: Flammable Liquid

THR: Mildly toxic by ingestion. Humans sustain central nervous system effects at low doses. Mutagenic data. A skin irritant. Flammable when exposed to heat, flame or oxidizers. Explosion Hazard: Slight in the form of vapor. To fight fire, use foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and fumes.

**CQ1250****HR: 2****p-CYMEN-7-OL**

CAS: 536-60-7

NIOSH: GZ 7260000

mf: C<sub>10</sub>H<sub>14</sub>O mw: 150.24**SYNS:**

CUMIC ALCOHOL

CUMINIC ALCOHOL

CUMINOL

CUMINYL ALCOHOL

CUMYL ALCOHOL

p-ISOPROPYLBENZYL ALCOHOL

**TOXICITY DATA:**

skn-rbt 500 mg/24H MOD

orl-rat LD50: 1020 mg/kg

skn-rbt LD50: 2500 mg/kg

**CODEN:**

FCTXAV 12,871,74

FCTXAV 12,871,74

FCTXAV 12,871,74

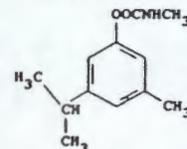
Reported in EPA TSCA Inventory.

THR: Moderately toxic by ingestion and skin contact. A skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALCOHOLS.

**CQ1500****HR: 3****m-CYM-5-YL METHYLCARBAMATE**

CAS: 2631-37-0

NIOSH: FB 8050000

mf: C<sub>12</sub>H<sub>17</sub>NO<sub>2</sub> mw: 207.30**SYNS:**

CARBAMULT

ENT 27300

ENT 27,300-A

EP 316

METHYLCARBAMIC ACID-m-

CYM-5-YL ESTER

3-METHYL-5-ISOPROPYLPHENYL-

N-METHYLCARBAMATE

## TOXICITY DATA:

cyt-rat-ivn 50 mg/kg  
 skn-mus TDLo: 670 mg/kg/28W-1:ETA  
 scu-mus TDLo: 120 mg/kg/9W-1:ETA

## CODEN:

GANNA2 64,637,73  
 CRSBAW 148,812,54  
 CRSBAW 148,812,54

THR: An experimental tumorigen. Mutagenic data. When heated to decomposition it emits acrid smoke and irritating fumes.

## TLK000

HR: 3

## 6,7,8-TRIMETHYLBENZ(a)ANTHRACENE

CAS: 20627-32-1 NIOSH: CX 4025000  
 mf: C<sub>21</sub>H<sub>18</sub> mw: 270.39

## TOXICITY DATA:

ims-rat TDLo: 50 mg/kg:NEO

## CODEN:

CNREA8 29,506,69

THR: An experimental neoplastigen. When heated to decomposition it emits acrid smoke and irritating fumes.

## TLK500

HR: 3

## 6,8,12-TRIMETHYLBENZ(a)ANTHRACENE

CAS: 20627-34-3 NIOSH: CX 4375000  
 mf: C<sub>21</sub>H<sub>18</sub> mw: 270.39

## TOXICITY DATA:

cyt-rat-ivn 50 mg/kg  
 cyt-rat-ivr 140 mg/kg/10D-1  
 ivn-rat TDLo: 175 mg/kg/10W-1:ETA  
 ims-rat TDLo: 50 mg/kg:NEO

## CODEN:

GANNA2 64,637,73  
 JEMEA V 131,331,70  
 JEMEA V 131,321,70  
 CNREA8 29,506,69

THR: An experimental neoplastigen and tumorigen. Mutagenic data. When heated to decomposition it emits acrid smoke and irritating fumes.

## TLK600

HR: 3

## 6,9,12-TRIMETHYL-1,2-BENZANTHRACENE

CAS: 24891-41-6 NIOSH: CX 4725000  
 mf: C<sub>21</sub>H<sub>18</sub> mw: 270.39

SYN: 7,9,12-TRIMETHYLBENZ(a)ANTHRACENE

## TOXICITY DATA:

ivn-rat TDLo: 175 mg/kg/10W-1:ETA  
 skn-mus TDLo: 310 mg/kg/13W-1:ETA  
 scu-mus TDLo: 1200 mg/kg/17W-1:ETA  
 skn-mus TD: 530 mg/kg/22W-1:ETA

## CODEN:

JEMEA V 131,321,70  
 PRLBA4 129,439,40  
 PRLBA4 129,439,40  
 PRLBA4 131,170,42

THR: An experimental tumorigen. When heated to decomposition it emits acrid smoke and irritating fumes.

## TLK750

HR: 3

## 7,8,12-TRIMETHYLBENZ(a)ANTHRACENE

CAS: 13345-64-7 NIOSH: CX 4550000  
 mf: C<sub>21</sub>H<sub>18</sub> mw: 270.39

## SYNS:

7,8,12-TMBA

5:9:10-TRIMETHYL-1:2-BENZANTHRACENE

## TOXICITY DATA:

sln-dmg-par 5 mmol/L  
 sln-dmg-ori 30 mmol/L/3D  
 cyt-rat-ivn 50 mg/kg  
 cyt-rat-par 140 mg/kg/10D-1  
 sce-rat: bmr 270 mg/L  
 ivn-rat TDLo: 175 mg/kg/10W-1:CAR  
 skn-mus TDLo: 48 mg/kg/10W-1:ETA  
 scu-mus TDLo: 1400 mg/kg/22W-1:ETA  
 ivn-mus TDLo: 20 mg/kg:ETA,TER  
 ivn-rat TD: 130 mg/kg/30D-1:ETA  
 ivn-rat TDLo: 39 mg/kg/6D-1:ETA  
 ivn-rat TD: 35 mg/kg:ETA  
 ivn-rat LD50: 125 mg/kg  
 ivn-mus LD50: 50 mg/kg

## CODEN:

MUREAV 125,243,84  
 MUREAV 125,243,84  
 GANNA2 64,637,73  
 JEMEA V 131,331,70  
 JJIND8 67,831,81  
 JEMEA V 131,321,70  
 PRLBA4 129,439,40  
 PRLBA4 129,439,40  
 MOPMA3 4,427,68  
 JNCIAM 48,429,72  
 CNREA8 29,506,69  
 PNASA6 78,1185,81  
 MOPMA3 4,427,68  
 MOPMA3 4,427,68

THR: Poison by intravenous route. An experimental carcinogen, tumorigen and teratogen. Mutagenic data. When heated to decomposition it emits acrid smoke and irritating fumes.

## TLL000

HR: 3

## 7,10,12-TRIMETHYLBENZ(a)ANTHRACENE

CAS: 35187-27-0 NIOSH: CX 4900000  
 mf: C<sub>21</sub>H<sub>18</sub> mw: 270.39

## TOXICITY DATA:

ims-rat TDLo: 50 mg/kg:ETA

## CODEN:

JMCMAR 14,940,71

THR: An experimental tumorigen. When heated to decomposition it emits acrid smoke and irritating fumes.

## TLL250

HR: 1

## \*TRIMETHYLBENZENE (mixed isomers)

CAS: 25551-13-7 NIOSH: DC 3220000  
 mf: C<sub>9</sub>H<sub>12</sub> mw: 120.21

SYN: TRIMETHYL BENZENE (ACGIH)

## TOXICITY DATA:

skn-rbt 500 mg/24H MOD  
 eye-rbt 500 mg/24H MLD  
 ori-rat LD50: 8970 mg/kg

## CODEN:

28ZPAK -,24,72  
 28ZPAK -,24,72  
 28ZPAK -,24,72

Reported in EPA TSCA Inventory.

ACGIH TLV: TWA 25 ppm

THR: Mildly toxic by ingestion. A skin and eye irritant. Flammable when exposed to heat, flame and oxidizers. When heated to decomposition it emits acrid smoke and irritating fumes. See also individual trimethylbenzene isomers.



An unstable shock- and heat-sensitive explosive. It may explode above 100°C and ignites at 143°C. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. See also AZIDES.

**BQI500****HR: 3****5-n-BUTYL-1,2-BENZANTHRACENE**

CAS: 63018-64-4

NIOSH: CW 0700000

mf: C<sub>22</sub>H<sub>20</sub> mw: 284.42

SYN: 8-BUTYLBENZ(a)ANTHRACENE

**TOXICITY DATA:****CODEN:**skn-mus TDLo: 860 mg/kg/36W-  
I:ETA

PRLBA4 129,439,40

THR: An experimental tumorigen. When heated to decomposition it emits acrid smoke and irritating fumes.

**BQI750****HR: 1****n-BUTYLBENZENE**

CAS: 104-51-8

NIOSH: CY 9070000

DOT: 2709

mf: C<sub>10</sub>H<sub>14</sub> mw: 134.24

PROP: Colorless liquid. Mp: -81.2°, bp: 182.1°, fp: -88.2°, flash p: 160°F (TOC), d: 0.8601 @ 20°/4°, vap press: 1 mm @ 22.7°, autoign temp: 774°F, lel: 0.8%, uel: 5.8%, vap d: 4.6.

SYN: 1-PHENYLBUTANE

**TOXICITY DATA:****CODEN:**

orl-rat LDLo: 5000 mg/kg

AMIHAB 19,403,59

Reported in EPA TSCA Inventory.

DOT Classification: Flammable or Combustible Liquid; Label: Flammable Liquid

THR: Mildly toxic by ingestion. Flammable when exposed to heat or flame. To fight fire, use alcohol foam, CO<sub>2</sub>, dry chemical. Incompatible with oxidizing materials. When heated to decomposition it emits acrid and irritating fumes.

**BQJ000****HR: 2****sec-BUTYLBENZENE**

CAS: 135-98-8

NIOSH: CY 9100000

DOT: 2709

mf: C<sub>10</sub>H<sub>14</sub> mw: 134.24

PROP: Colorless liquid. Mp: -82.7°, bp: 173.5°, fp: -75.8°, flash p: 126°F (TOC), d: 0.8621 @ 20°, vap press: 1 mm @ 18.6°, vap d: 4.62, autoign temp: 788°F, lel: 0.8%, uel: 6.9%.

SYN: 2-PHENYLBUTANE

**TOXICITY DATA:****CODEN:**

orl-rat LD50: 2240 mg/kg

TXAPA9 28,313,74

Reported in EPA TSCA Inventory.

DOT Classification: Flammable or Combustible Liquid; Label: Flammable Liquid

THR: Moderately toxic by ingestion. Flammable when exposed to heat or flame. To fight fire, use foam, CO<sub>2</sub>, dry chemical, water spray or mist. Incompatible with oxidizing materials. When heated to decomposition it emits acrid smoke and fumes.

**BQJ250****HR: 1****\* tert-BUTYLBENZENE**

CAS: 98-06-6

NIOSH: CY 9120000

DOT: 2709

mf: C<sub>10</sub>H<sub>14</sub> mw: 134.24

PROP: Colorless liquid. Bp: 168.2°, fp: -58°, flash p: 140°F (TOC), d: 0.8665 @ 20°, vap press: 1 mm @ 13.0°, vap d: 4.62, autoign temp: 842°F, lel: 0.7% @ 212°F, uel: 5.7% @ 212°F.

SYNS:

2-METHYL-2-PHENYLPROPANE  
PSEUDOBUTYLBENZENE

TRIMETHYLPHENYLMETHANE

**TOXICITY DATA:****CODEN:**

orl-rat LDLo: 5000 mg/kg

AMIHAB 19,403,59

Reported in EPA TSCA Inventory.

DOT Classification: Flammable or Combustible Liquid; Label: Flammable Liquid

THR: Mildly toxic by ingestion. Flammable when exposed to heat or flame. To fight fire, use foam, CO<sub>2</sub>, dry chemical, water spray, fog, mist. Incompatible with oxidizing materials. When heated to decomposition it emits acrid smoke and fumes.

**BQJ500****HR: 3** **$\alpha$ -BUTYLBENZENEMETHANOL**

CAS: 583-03-9

NIOSH: DN 8780000

mf: C<sub>11</sub>H<sub>16</sub>O mw: 164.27

SYNS:

 $\alpha$ -BUTYLBENZYL ALCOHOL

PH BC

FENIPENTOL

PHENYLBUTYL CARBINOL

1-HYDROXY-1-PHENYLPENTANE

1-PHENYL-1-HYDROXPENTANE

PANCORAL

PHENYLPENTANOL

PC 1

1-PHENYLPENTANOL

**TOXICITY DATA:****CODEN:**orl-rat TDLo: 50 g/kg (14W pre):  
REP

OYYAA2 6,15,72

orl-rat TDLo: 3500 mg/kg (7-13D  
preg): TER

GNRIDX 5,357,71

orl-mus TDLo: 7 g/kg (7-13D  
preg): TER

GNRIDX 5,357,71

orl-rat LD50: 5432 mg/kg

IYKEDH 4,90,72

ipr-rat LD50: 256 mg/kg

NIIRDN 6,657,82

scu-rat LD50: 6930 mg/kg

IYKEDH 4,90,73

orl-mus LD50: 3100 mg/kg

MEIEDD 10,573,83

ipr-mus LD50: 188 mg/kg

NIIRDN 6,657,82

scu-mus LD50: 3153 mg/kg

IYKEDH 4,90,73

100001

**James A. Goff**  
Staff Vice President  
Corporate Administrative Services



**BAUSCH & LOMB**  
Healthcare and Optics  
Worldwide

January 10, 1994

Ms. Mary Jane Peachey  
New York State Department of Environmental Conservation  
Division of Hazardous Waste Remediation  
6274 E. Avon-Lima Rd.  
Avon, NY 14414



**RECEIVED**

RE: Bausch & Lomb World Headquarters Building Site  
Rochester, New York

JAN 12 1994  
NYS DEPT. OF ENVIRONMENTAL  
CONSERVATION-REGION 8  
SWITCHBOARD

Dear Ms. Peachey:

Please find in the following a summary of the work to date at the above referenced location. A Work Plan and Health and Safety Plan are enclosed as per your request at the December 23, 1993 meeting at City Hall. A site map with the exact location of contaminated soils encountered is also enclosed.

The work thus far on the site to be occupied by the Bausch & Lomb World Headquarters Building has been conducted in strict compliance with both the Work Plan and Health and Safety Plan (HASP). Both of these documents were developed by MARCOR of New York, Inc. after meeting on the site with Mr. Todd Caffoe of the New York State Department of Environmental Conservation (NYSDEC) and Mr. Edward Yurkstas of the Monroe County Department of Health. MARCOR has been retained by LeChase Construction Co. to oversee all environmental management issues from developing a work plan and health and safety plan to on-site implementation of each.

Based upon the initial results and the anticipated construction activities in areas possibly impacted by organic contaminants, the Work Plan and HASP were developed. Consistent with these documents, air monitoring has been utilized to provide both on-site worker and surrounding community safety and to identify contaminated soils. The specific provisions of the Work Plan and HASP were followed when excavation activities near the existing dry cleaners were completed and when other site activities encountered contaminated soils in unanticipated locations.

To date, in excess of 20,000 yd<sup>3</sup> of soil has been excavated at the building site. Approximately 75 yd<sup>3</sup> of this total has been segregated as contaminated based upon the on-site monitoring activities. The segregated contaminated soil was staged on and covered by 8 mil thick polyethylene sheeting pending completion of excavation activities, sample analysis and disposal arrangements. Each bucket of soil (approximately 0.75 yd<sup>3</sup>/bucket) removed from the areas near the existing cleaners (specifically the west and northwest sides of the future wintergarden location) was screened using a Foxboro Century 128 organic vapor analyzer (OVA).



Ms. Mary Jane Peachey

Page 2

January 10, 1994

This instrument, equipped with a flame ionization detector, has at least a 100% Relative Response Factor to the organic compounds of concern. This instrument has a detection limit of 0.2ppm. Soils are segregated based on visible discoloration and/or an OVA value greater than 10ppm.

A composite sample of the excavated contaminated soil was obtained on December 16, 1993 to satisfy disposal facility requirements. The 6 point composite sample was collected using sterile gloves and sample scoops. Soil from each sample location was placed into a stainless steel container and mixed thoroughly. The sample was submitted to Lozier Laboratories, Inc. for analysis. The test results are anticipated in early January. The specific tests requested were chosen to categorize the soil in a manner acceptable to landfills permitted to handle hazardous wastes. Should the test results indicate that the soil does not meet the criteria of a hazardous waste as defined by existing RCRA - Hazardous Waste Management (40 CFR Part 264) regulations, the material will be disposed of as a non-hazardous waste in an appropriately RCRA permitted facility.

As requested by Mr. Todd Caffoe of the NYSDEC, soil testing in accordance with NYSDEC STARS Memo #1 will be completed. With the exception of the far north west portion of the site all excavation has been completed.

The total volume of excavated contaminated soil is anticipated not to exceed 100 yd<sup>3</sup>.

During excavation activities, an exclusion zone surrounding the work area was established with caution tape. Air monitoring within the work area was completed to provide worker safety as well as to screen soils. Periodic air monitoring outside of the exclusion zone was completed to provide worker and community safety. A breathing zone action level of 1ppm total volatile organics above background sustained for 10 seconds was established as the level to upgrade to supplied air respiratory protection for workers within the exclusion zone. Within the exclusion zone, breathing zone levels up to 3.9ppm have been noted. No detectable levels of air contaminants have been noted outside the exclusion zone. Workers within the exclusion zone have been required to wear respiratory protection on two occasions.

With the consent of Mr. Todd Caffoe of the NYSDEC, only contaminated soils encountered during planned construction activities were removed and excavated: veins or pockets of contamination were not over-excavated unless they lay below building support structures. Thus, contaminated soils beneath footers were over-excavated to the deepest vertical extent possible. During the wintergarden west wall footer installation, the planned excavation depth was 8 feet below grade. Contaminated soil in this area were over-excavated to the excavator digging depth limit (22 feet). Eight mil thick polyethylene sheeting was placed in the base of the excavation as a vapor barrier. Concrete was then poured on top of the plastic sheeting up to the desired level.

In addition to the footers, Bausch & Lomb has decided to place an 8 mil thick polyethylene liner under the entire slab of the wintergarden. This strategy was discussed during the recent DEC/Bausch & Lomb/City of Rochester meeting held in Rochester City Hall.



Ms. Mary Jane Peachey

Page 3

January 10, 1994

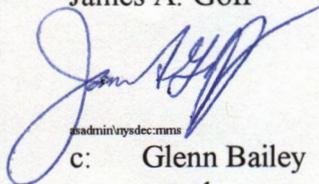
Water has collected twice in low-lying areas in contact with contaminated soils. A sheen was noticeable on the surface of this water. The water was pumped into drums and tested for disposal purposes. Test results indicated the presence of 10.8 ug/l 1,1,2,2-tetrachloroethane. The presence of aromatic hydrocarbons in the water sample was noted by the lab but the results were not required for disposal purposes and were thus not requested or reported. The water analysis was completed by Paradigm Environmental Services, Inc. To date, 10 drums of contaminated water have been removed from the site. Disposal was completed by Industrial Oil Tank Service in accordance with the provisions of their SPDES Permit.

During construction activities on the western portion of the work site near the future location of the loading dock, a 1000 gallon single-walled steel underground heating oil storage tank was encountered. The NYSDEC Bulk Storage Division was notified and a permit to remove the tank was obtained from the City of Rochester. The tank was removed from the site for final cleaning on December 15, 1993. A Tank Closure Assessment Report is in preparation. No evidence of a petroleum release was noted in the tank excavation. The age of the tank was estimated at 50 years.

Construction activities continue at the site. The provisions of the Work Plan and HASP will continue to be strictly adhered to in all future operations at the work site. Do not hesitate to contact me if you should have any questions or comments.

Sincerely,

James A. Goff



admin@nysdec.mms  
c: Glenn Bailey  
attachment  
file



New York State Department of Environmental Conservation  
6274 East Avon-Lima Road, Avon, NY 14414



Thomas C. Jorling  
Commissioner

**IMMEDIATE ATTENTION**

TO: Joe Ryan WEE - Buffalo

FROM: Mary Jane Benney - Region 8

DATE: January 18, 1994

NUMBER OF PAGES: 3 (PLUS COVER)

MESSAGE: \_\_\_\_\_

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\_\_\_\_\_

Our telecopier number is (716)226-2466, Extension 335.  
Our operator's telephone number is (716)226-2466, Extension 340.

⊕



**LARSEN  
ENGINEERS**

**RECEIVED**

**JAN 11 1993**

**LeCHASE CONSTRUCTION**

ENGINEERS  
PLANNERS  
SCIENTISTS  
SURVEYORS

*File  
Court St.  
100001*

January 11, 1994

462901

LeChase Construction  
Bausch & Lomb World Headquarters Project  
P.O. Box 40344  
Rochester, N.Y. 14604

Attn: Mike Ricotta

RE: CONTAMINATED SOIL SURVEY MAP

Dear Mike:

As you requested in our phone conversation this morning, please find enclosed five blue-line prints of a map showing the locations of contaminated soil as surveyed by Larsen Engineers at the Bausch & Lomb World Headquarters site.

This ledger size map is drawn at a scale of 1" = 30'.

If you have any questions regarding this map, or if you need additional copies, please call us.

Very truly yours,

*Robert J. Bradley*

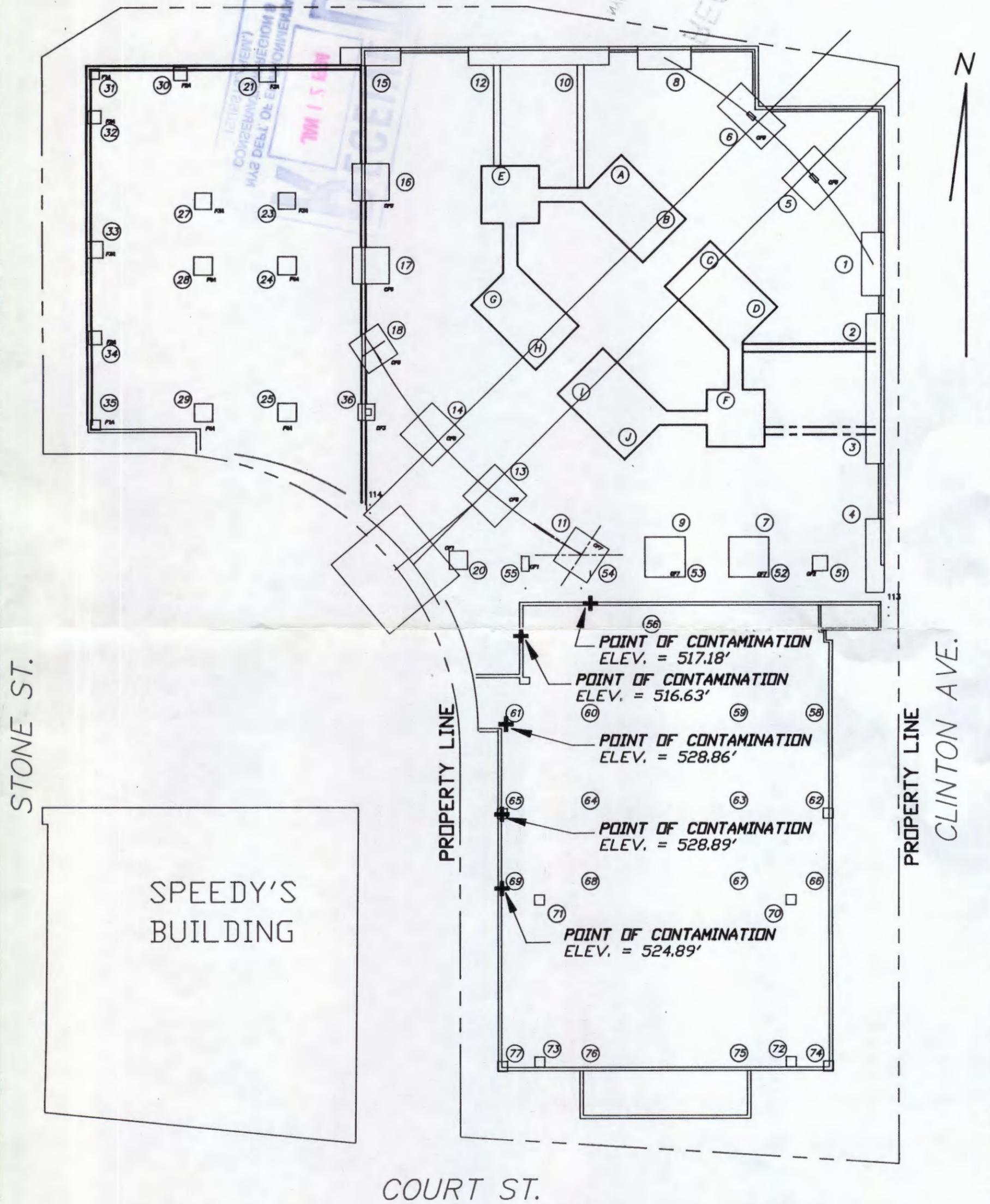
Robert J. Bradley, PLS

RJB:rjb

cc: LaVern Celestino, PLS, Larsen Engineers

RECEIVED  
 JAN 11 1993  
 LeCHASE CONSTRUCTION

BROAD ST.



STONE ST.

SPEEDY'S BUILDING

PROPERTY LINE

PROPERTY LINE

CLINTON AVE.

COURT ST.

SCALE : 1" = 30'

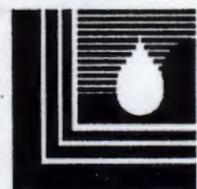
\* NOTE: ELEVATIONS OF SAMPLE LOCATIONS ARE BASED ON U.S.C.&G.S. MONUMENT 'COURT', ELEV. 525.32, ROCHESTER CITY DATUM.

WE, LARSEN ENGINEERS, CERTIFY THAT THIS MAP WAS MADE ON JAN. 11, 1994 FROM NOTES OF FIELD SURVEYS MADE ON DEC. 10 & DEC 21, 1993.

*Robert J. Bradley*  
 ROBERT J. BRADLEY, NYSPLS 049847



NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.



**LARSEN**

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