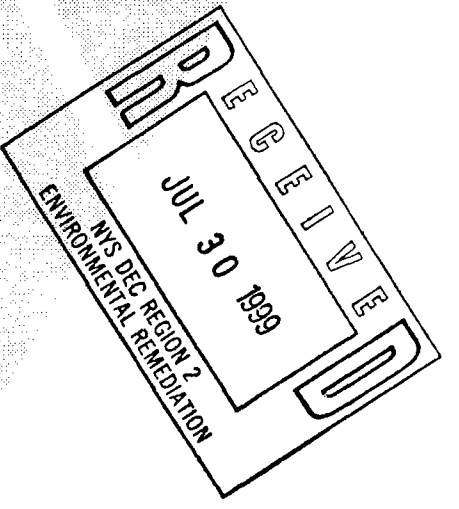
THE WHITMAN COMPANIES, INC.

Setting the Standard in
Environmental Engineering & Management

SITE INVESTIGATION WORKPLAN

FOR

DEXTER CHEMICAL LLC
845 EDGEWATER ROAD
BRONX, NEW YORK



PERFORMED BY

THE WHITMAN COMPANIES, INC.

JULY 1999

44 West Ferris Street, East Brunswick, NJ 08816
www.whitmanco.com

THE WHITMAN COMPANIES, INC.

Corporate Headquarters
44 West Ferris Street
East Brunswick, NJ 08816

Tel: 732.390.5858 • Fax: 732.390.9496
E-mail: whitman@whitmanco.com
Internet: www.whitmanco.com

July 29, 1999

Hari O. Agrawal, P.E.
NYSDEC
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, NY 11101

RE: Dexter Chemical LLC
Bronx, New York
Whitman Project #97-09-10

Dear Mr. Agrawal:

Enclosed are one original and two copies of a report entitled *Site Investigation Workplan for Dexter Chemical LLC*. This report presents the Site Investigation Workplan as agreed in meetings between The Whitman Companies Inc. (Whitman) and the NYSDEC.

Please note that the selling entity at the Dexter site was Dexter Chemical Corporation, and the entity which made the acquisition of the company in June 1998 is known as Dexter Chemical LLC. Dexter Chemical LLC is the name of the entity applying for the New York State Department of Environmental Conservation Voluntary Cleanup Program.

Please contact me at 732-390-5858 should any questions or comments regarding this matter.

Very truly yours,

Ira L. Whitman, P.E.

ILW/dmv

cc: Leonard Sitver, Dexter Chemical LLC.
Richard Conway, Esq.
Thomas Peter, The Whitman Companies, Inc.

SITE INVESTIGATION WORKPLAN
DEXTER CHEMICAL LLC
BRONX, NEW YORK

Table of Contents

1.0 INTRODUCTION 1

2.0 SITE DESCRIPTION/HISTORY 2
2.1 Site Characteristics 2
2.2 Past Operations and Chemical Usage 2
2.3 Current Operations and Chemical Usage 3

3.0 REGULATORY HISTORY 3
3.1 Past Inspections 3
3.2 Permits 3
3.3 Violations 3

4.0 PREVIOUS ENVIRONMENTAL STUDIES 4
4.1 UST Closure Reports 4
4.2 Whitman Phase I 4
4.3 Whitman Phase II 4
4.4 Whitman Remedial Investigation 5

5.0 DESCRIPTION OF INTENDED SITE USE 5

6.0 NYSDEC ISSUES 6
6.1 Industrial Waste Discharge 6
6.2 Xylene Usage 6

7.0 SAMPLING PLAN 6
7.1 Area A (819 Edgewater Road Plant) 6
7.2 Area B (819 Edgewater Road Plant) 7
7.3 Area E (845 Edgewater Parking Area) 7
7.4 Area I (842 Whittier Plant Driveway/Yard) 7
7.5 Offsite Well 7

8.0 METHODOLOGY 8
8.1 Soil Sample Collection 8
8.2 Monitoring Well Installation 9

9.0 HEALTH AND SAFETY PLAN 9

10.0 STANDARD OPERATING PROCEDURES 9
10.1 Field Instruments 10
10.2 Sample Custody 10

11.0 SAMPLE ANALYSIS 10
11.1 Analytical Parameters and Methods 10
11.2 Laboratory Certification and Data Format 10

12.0 REPORT FORMAT 11

FIGURES

1. Site Location on USGS Central Park, NY Quadrangle
2. Site Map
3. Past Soil and Ground Water Sample Locations
4. Proposed Soil and Ground Water Sample Locations

ATTACHMENTS

1. Waste Water Analysis Results
2. Health and Safety Plan

SITE INVESTIGATION WORKPLAN
DEXTER CHEMICAL LLC
BRONX, NEW YORK

1.0 INTRODUCTION

The Whitman Companies, Inc. (Whitman) performed a Phase I Environmental Site Assessment/ Preliminary Assessment at the Bronx, New York, Dexter Chemical LLC (Dexter) property in September 1997. During the assessment, Whitman identified several areas of potential environmental concern and recommended further investigation and/or corrective action. A Phase II environmental site investigation was conducted to assess the areas of potential environmental concern.

The Phase II environmental site investigation activities were conducted on November 18, 1997. Soil and grab ground water samples were collected to investigate three (3) areas of potential environmental concern (APECs):

1. 819 Edgewater Road Plant Subsurface Contamination
2. 5,000 gallon No. 4 heating oil underground storage tank (UST)
3. Two (2) 3,500 gallon Isopropyl Alcohol USTs

The result of the initial investigation indicated the presence of ground water and soil contaminants with Volatile Organic Compounds (VOCs), Base/Neutral Extractable Organic Compounds (BNs), and Priority Pollutant Metals (PPM), at concentrations above the New York State Department of Environmental Conservation (NYSDEC) recommended Soil Cleanup Objectives and Ground Water Standards/Criteria, as per the Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046. Whitman recommended additional sampling of soil and ground water by performing a Remedial Investigation.

The Remedial Investigation activities were conducted on March 10 through March 12, 1998. The investigation consisted of seventeen (17) soil borings and the installation of six (6) groundwater monitoring wells.

In June 1998, Dexter submitted an application for the NYSDEC Voluntary Cleanup Program. As part of the application, copies of the Phase I, Phase II and Remedial Investigation reports were submitted to the Department in July 1998. *Dexter Chemical LLC acquired Dexter Chemical Corporation in June 1998, and is now the entity of record in the Voluntary Cleanup Program.*

2.0 SITE DESCRIPTION/HISTORY

2.1 Site Characteristics

The site is located at 819-845 Edgewater Road and 810-842 Whittier Street, Bronx, New York. The facility consists of six (6) buildings owned by Dexter Chemical LLC on approximately two (2) acres. The property is located in an industrial/manufacturing district of Hunts Point, Bronx, New York. Industrial facilities are located north and south of the property. A scrap metal yard is located to the east and residential apartments and a sheet metal company are located west of the subject property.

The site location on the U.S.G.S. Central Park Quadrangle is indicated on Figure 1. A site map showing is included as Figure 2. The site is located on a flat coastal peninsula. The estimated elevation is between 20 and 25 feet above mean sea level. The nearest surface water body is the Bronx River, located approximately 1,000 feet east of the site. Ground water was encountered between 2 to 12 feet below grade, across the site.

The regional geology in the vicinity of the site is of Paleozoic Era, Ordovician System consisting of shale and limestone, stratified sequence and Manhattan Formation with undivided pelitic schists, and amphibolite.

The soil encountered at the site through sampling activities generally consists of fill material historically placed to raise the topographic elevation of the property to its current grade. The fill material included silty soil, some sand and clay, cinders, coal fragments, gravel and debris (concrete, glass, wood, and brick fragments). This material can be classified as historic fill which can contain Polynuclear Aromatic Hydrocarbons (i.e., Benzo(a)pyrene, Benzo(b)fluoranthane, Dibenz(a,h)anthracene)and Priority Pollutant Metals. A distinct organic layer described as meadow mat by the field geologist was encountered at 13 to 16 feet. This layer is indicative of native soil for the area.

2.2 Past Operations and Chemical Usage

The site, according to Sanborn Maps, was occupied previously by a paint manufacturing company, metal works, door company and art craft table company in the 1950's. The types of raw materials/chemicals associated with these types of operations include but not limited to:

- Metals – Lead, Mercury, Chromium, Arsenic, Nickel and Zinc
- Solvents – Toluene. Xylene, Acetone, Ethyl Benzene, Ketones, Polynuclear Aromatic Hydrocarbons

- Other Paint Thinners – Mineral Spirits, Naphtha, Aliphatic Hydrocarbons and Ethyl Benzene

2.3 Current Operations and Chemical Usage

The site is now owned and operated by Dexter Chemical LLC. For 50-55 years the site was operated by Dexter Chemical Corporation. Dexter operations include the manufacturing of specialty industrial organic chemicals, predominately phosphation and sulfation batches, and various blending operations. A complete chemical inventory was previously provided in the Phase I Environmental Assessment (Whitman 1997).

3.0 REGULATORY HISTORY

3.1 Past Inspections

EPA and Resource Conservation Recovery Act (RCRA) representatives have inspected the site on several occasions. There were no reported deficiencies with regards to spills and discharges.

3.2 Permits

Dexter maintains both air and waste water permits for the site. Dexter has New York City (NYC) DEP air permits for all emission points and three (3) air permits from New York State. The New York State air permits are for 842 Whittier and 819 Edgewater processing plants for sulfation and phosphation processes.

In addition, Dexter maintains a New York City DEP Industrial Wastewater Discharge Permit, #95-P625Y1. The permit has two (2) recognized discharge points; one at 819 Edgewater and one at 842 Whittier Plant. As a requirement , Dexter must monitor the discharge water on a continuous basis. Additionally, the discharge water is tested twice per year. Enclosed are the December 1998 test results (Attachment 1).

3.3 Violations

No violations were found through historical records search and owner interview.

4.0 PREVIOUS ENVIRONMENTAL STUDIES

4.1 UST Closure Reports

Whitman reviewed two (2) reports prepared by EnviroSciences, Inc. regarding the removal of two (2) USTs in January 1993 and the decommissioning of eight (8) USTs in May 1995. The following is a summary of the tank closure activities:

January 1993:

- Removal of 3,500 Gallon #2 Fuel Oil UST – formerly located in Area E
- Removal of 5,500 Gallon Isopar-M UST – formerly located in Area E

May 1995:

- Decommissioning of 2,500 Gallon Methanol UST–formerly located in Area I
- Decommissioning of 2,000 Gallon Isopropanol UST–formerly located in Area B
- Decommissioning of 1,500 Gallon Varsol UST–formerly located in Area B
- Decommissioning of 550 Gallon Diesel UST-formerly located in Area G (North of Area F)
- Decommissioning of two (2) 550 Gallon Gasoline USTs-formerly located in Area F

The on-site areas referred to are identified on Figure 2, Site Map.

4.2 Whitman Phase I

Whitman performed a Phase I Environmental Site Assessment/ Preliminary Assessment at the Dexter property in September 1997. During the assessment, Whitman identified several areas of potential environmental concern and recommended further investigation and/or corrective action. A copy of the Phase I Environmental Assessment was previously submitted to the Department.

4.3 Whitman Phase II

The Phase II Environmental Site Investigation activities were conducted by Whitman on November 18, 1997. Soil and grab ground water samples were collected to investigate three (3) areas of potential environmental concern (APECs) that are shown on Figure 2:

1. 819 Edgewater Road Plant Subsurface Contamination
2. 5,000 Gallon No. 4 Heating Oil Underground Storage Tank (UST)
3. Two (2) 3,500 Gallon Isopropyl Alcohol USTs.

The results of the initial investigation indicated the presence of ground water and soil contaminants with Volatile Organic Compounds, Base/Neutral Extractable Organic Compounds, and Priority Pollutant Metals, at concentrations above the NYSDEC recommended Soil Cleanup Objectives and Ground Water Standards/Criteria. A copy of the Phase II Environmental Site Investigation was previously submitted to the Department.

4.4 Whitman Remedial Investigation

Remedial Investigation activities were conducted on March 10 through March 12, 1998. The investigation consisted of seventeen (17) soil borings and the installation of six (6) groundwater monitoring wells. The Remedial Investigation Report was submitted to the NYSDEC in July 1998.

The analytical results for the soil sampling indicate the presence of VO+10, BN+15 and PPMetal contamination in soil samples in excess of the NYSDEC 1994 Recommended Soil Cleanup Objectives (NYSDEC Objectives).

Of the six (6) monitoring wells installed, only two (2) wells had samples that contained concentrations of contaminants exceeding the NYSDEC Ground Water Standards/Criteria, MW-3 and MW-6. No contaminants were detected above the NYSDEC Ground Water Standards/Criteria in MW-1 and MW-2, located in the sidewalk on Whittier Street, MW-4 located in the Edgewater Road sidewalk, and MW-5, located in the courtyard, Area B.

5.0 DESCRIPTION OF INTENDED SITE USE

The Dexter Chemical LLC property in the Hunts Point section of the Bronx has been used in manufacturing for many years. The owners and operators of the property plan to continue to operate the site for manufacturing and formulation of non-solvent surfactants used for wetting, dispersion, emulsification and detergency.

Because the site is largely capped by concrete and asphalt surfaces, there is no exposure or risk to employees or site occupants to the on-site subsurface contamination. The profile of materials found in both soil and ground water samples indicates that materials presently used in manufacturing operations are not being discharged, and are not adding in any way to the subsurface contamination.

6.0 NYSDEC ISSUES

6.1 Industrial Waste Discharge

In a letter dated March 17, 1999, NYSDEC requested that all discharge locations in Areas A, B, H and I (floor drains, and sump locations) be sampled for full TCL. Dexter is required to analyze the wastewater on a semi-annual basis for Volatile Organic Compounds (VOCs), Base Neutral compounds (BNs), Cyanide, and metals. In subsequent discussions with NYSDEC it was agreed that wastewater discharge sampling results could be presented and evaluated in lieu of the requested sampling. The wastewater sampling results from December of 1998 indicate that the waste water is within the limits of the NYC DEP (Attachment 2). Sampling was conducted in June 1999, and the results of that sampling will be provided under separate cover.

6.2 Xylene Usage

In a letter dated March 17, 1999, NYSDEC requested information regarding the use of Xylene at the site. Dexter representative David H. Abrahams indicated that Xylene has not been used in manufacturing process for many years. Approximately one (1) gallon of Xylene is used on an annual basis in the onsite laboratory for certain test procedures. The Xylene is stored in small laboratory size containers within laboratory cabinets. Any spent chemicals are collected in a drum and disposed of by a hazardous waste disposal company.

7.0 SAMPLING PLAN

The proposed Sampling Plan is based upon NYSDEC's letter of March 17, 1999, a meeting between Whitman and NYSDEC on April 13, 1999, and subsequent discussions on the specifics of the sampling program.

7.1 Area A (819 Edgewater Road Plant)

NYSDEC requested that additional sampling be conducted in the interior of Building A.

Whitman will collect six (6) soil samples using direct-push (GeoProbe) methods. Sample locations will be biased towards previous sample locations A-1 and ISB-1 on a 10 foot grid, Figure 4, so as to delineate previously identified soil contamination. Samples will be collected from a 7-9 feet (depth of sample previous sample ISB-1) and analyzed for VOC, BN, and Mercury.

7.2 Area B (819 Edgewater Road Plant)

NYSDEC requested that additional sampling be performed in the Area B Yard to delineate the petroleum odors and BTEX concentrations in previous borings B1 and B3.

Whitman will complete three (3) borings in the area of B1 and B3 using direct-push (GeoProbe) methods. The proposed sample locations are shown on Figure 4 will be downgradient of the former #4 heating oil UST. Samples will be collected from a field determined depth above the water table and analyzed for VOCs and BNs.

At one boring location a grab ground water sample will be collected for VOC and BN analysis. The sample will be collected as outlined in Section 8.2.

In addition, Whitman will install a monitoring well in the vicinity of boring location B-3 between existing wells MW-5 and MW-6 (Figure 4).

7.3 Area E (845 Edgewater Parking Area)

NYSDEC requested that a monitoring well be installed in the central portion of Area E and downgradient of boring locations I-1 and I-2.

Whitman will install a monitoring well in Area E, as shown on Figure 4.

7.4 Area I (842 Whittier Plant Driveway/Yard)

NYSDEC requested that additional soil sampling be conducted in Area I and analyzed for VOCs and BNs.

Whitman proposes to collect three (3) samples to delineate previous sample I-1. The proposed sample locations are shown on Figure 4. The samples will be collected using direct-push (GeoProbe) methods from a depth of 7.5–8 feet. The results of the previous sample collected from I-1 indicated higher levels of contamination at the 7.5-8 foot depth than at the 3.5-4 foot depth. The samples will be analyzed for VOCs and Naphthalene.

7.5 Offsite Well

NYSDEC requested that an offsite well be installed across the street from 819 Edgewater Road in the downgradient direction of ground water flow.

The ground water contour map prepared for April 1999, shows water in MW-1 and MW-2 on Whittier Street to be at lower elevation, thereby causing ground water flow to appear to be diverted to the west. The contour map was re-drawn eliminating the measurements in MW-1 and MW-2. Ground water flow is to the east. The measurements in MW-1 and MW-2 would appear to be an anomaly, or possibly due to local conditions that may have been caused by a recent rainfall.

Based on the ground water contour map prepared for April 1999 measurements, it appears that ground water conditions in the vicinity of Dexter Chemical may be subject to local or temporal fluctuations, and therefore not totally consistent over time. The additional investigation activities need to be completed in order to provide additional ground water flow information. Whitman will install a well in a downgradient location following the completion of the investigation activities described above.

8.0 METHODOLOGY

8.1 Soil Sample Collection

Soil sampling will be performed in accordance with NYSDEC Sampling Guidelines and Protocols (September 1992) and the Phase II Investigation Generic Work Plan (May 1988). Soil samples for laboratory analysis will be collected using a direct push sampling device such as GeoProbe. Samples will be collected directly from the acetate-lined, stainless steel probe. Acetate liners will be disposed of after each use and the stainless steel probes will be decontaminated following standard procedures.

At each location the sample core will be screened using a photoionization detector (PID) in six-inch intervals and the soil type will be recorded. Soil samples will be collected at the predetermined depths or from the interval exhibiting the highest PID readings.

8.2 Grab Ground Water Sampling

Following the completion of the soil boring located in the center of Area B, a temporary 1–inch well screen will be installed. The well will be purged for three (3) volumes (if possible) to collect a representative sample of the aquifer. A sample will be collected with a disposable teflon bailer and analyzed for VOC and BN.

8.3 Monitoring Well Installation

Additional ground water investigation will be conducted by installing three (3) monitoring wells to further characterize ground water quality and flow. Monitoring wells will be installed in accordance with NYSDEC Sampling Guidelines and Protocols (September 1992) and the Phase II Investigation Generic Work Plan (May 1988).

Three (3) monitoring wells will be installed by a subcontracted drilling company licensed in New York State. One (1) well will be installed in Area B, between MW-5 and MW-6. One (1) well will be installed within the Dexter property in Area E. The remaining well will be installed in an offsite downgradient location to be determined. Two (2) of the proposed well locations are shown on Figure 3.

Split spoons will be collected at each drilling location in order to characterize the soil column. Well cuttings (soil removed during well installation) will be drummed and sampled for disposal analysis. The wells will be constructed in the manner as the existing monitoring wells.

Following well installation, the wells will be surveyed. The well elevations will be used in the preparation of ground water flow maps.

The wells will be sampled two (2) weeks after installation using a micro-purge method of ground water recovery. Samples will be collected from each well and analyzed for VO+10, BN+15, and PPMetals by a New York State Department of Health (NYSDOH) ELAP CLP certified laboratory. Field analysis will be conducted for ground water pH, temperature, conductivity and dissolved oxygen.

9.0 HEALTH AND SAFETY PLAN

A Site Specific Health and Safety Plan (HASP) was prepared and is provided in Attachment 2. A copy of the HASP will be on-site during all field activities.

10.0 STANDARD OPERATING PROCEDURES

All field activities will follow the NYSDEC Sampling Guidelines & Protocols (September 1992).

10.1 Field Instruments

The PID will be calibrated with known gas concentrations daily in the field. In the event that the instrument fails to meet calibration procedures, a replacement will be obtained.

10.2 Sample Custody

Field measurements and sample locations will be recorded. Following the sample collection, the sample will be labeled and stored in a laboratory provided cooler. The samples will be delivered by Whitman personnel or laboratory courier to the laboratory under a chain-of-custody.

11.0 SAMPLE ANALYSIS

11.1 Analytical Parameters and Methods

Soil and ground water samples for the parameters outlined in Section 7.0 using the following methods:

Parameter	Analysis Method
VOCs	EPA Method 8021
BN	EPA Method 8270
Naphthalene	EPA Method 8021/8270
Mercury	EPA 741

11.2 Laboratory Certification and Data Format

Soil and ground water sample analyses will be performed by STL Envirotech, Edison, New Jersey, NYSDOH accredited laboratory ELAP/CLP #11452. The laboratory will provide NYSDEC Analytical Services Protocol (ASP) Category B deliverables.

12.0 REPORT FORMAT

Following the completion of the outlined field activities, a Site Characterization Report will be prepared using the following outline:

- Introduction
  - Report Objective
  - Site Background
    - Site Description
    - Site History
    - Previous Investigations

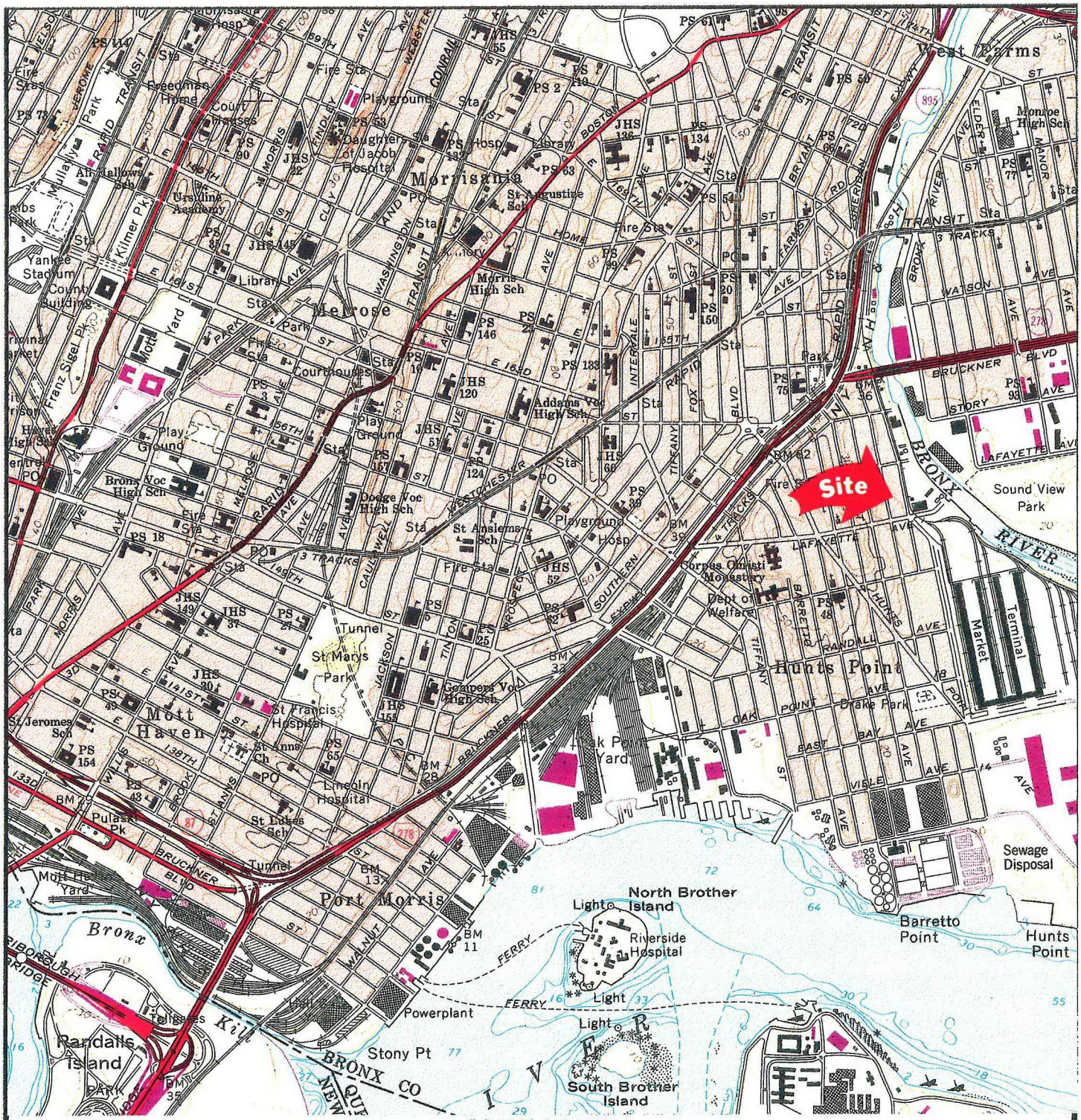
- Report Organization
- Study Area Investigation
- Physical Characteristics of the Study Area
- Nature and Extent of Contamination

- Contaminant Fate and Transport
  - Potential Routes of Migration
  - Contaminant Persistence
  - Contaminant Migration

- Summary and Conclusions
- Recommendations for Future Action

FIGURES

FIGURES



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

.5 .25 0 .5 KILOMETER

MN GN

10 1/2° 167 MILES 0°07' 2 MILES

UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

NEW YORK

QUADRANGLE LOCATION

THE WHITMAN Companies, INC.

DEXTER CHEMICAL LLC
845 EDGEWATER ROAD
BRONX, NEW YORK

SITE LOCATION ON USGS
CENTRAL PARK, N.Y. QUADRANGLE

ORIGINAL BY:	DRAWN BY:	DRAWING NO:
CC	A Scarf	970910A
CHECKED BY:	DATE:	FIGURE NO:
CC	APRIL 1998	1

WHITTIER STREET

(842 WHITTIER)

OFFICES

OFFICES

LOCKER ROOM

LAB

N

HOODS

STORAGE
FINISHED GOODS

M

I

H

(EMPTY LOT)

PHOSPHATION
BATCHES

PROPERTY BOUNDARY

BOILER
ROOM

CHEMICAL STORAGE

(2) 3,500 GALLON
ISOPROPYL UST's

E

SULFATION BATCHES

BOILER ROOM

TANK VENT & FILL PORTS

5,000 GALLON
#4 HEATING OIL UST

ACCESS PORT

C

PARKING AREA

A

B

SHIPPING

MAIN OFFICE

D

YARD

(819 EDGEWATER)
PLANT

(835 EDGEWATER)

(845 EDGEWATER)

EDGEWATER ROAD

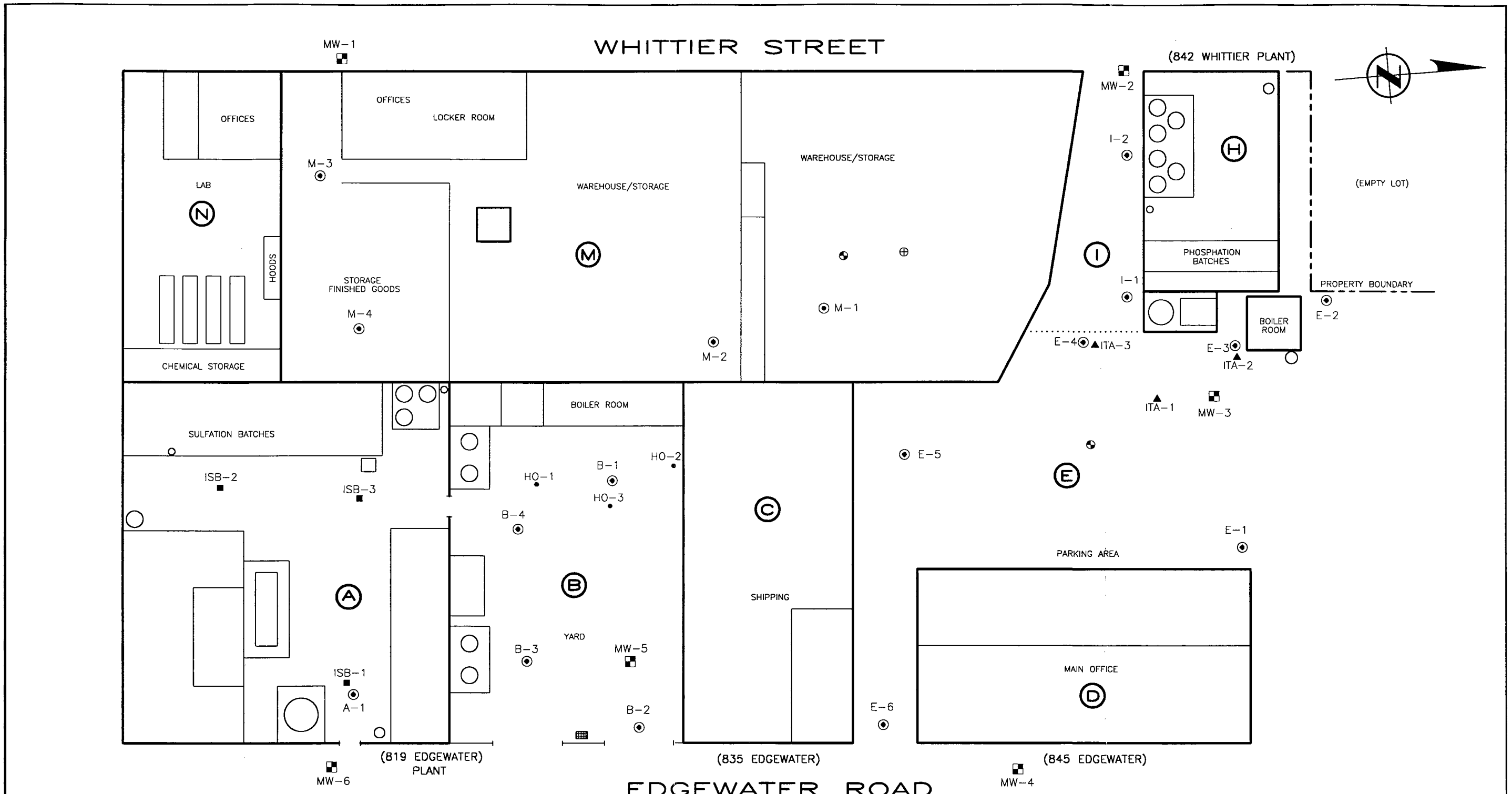
LEGEND

(A) - IDENTIFICATION TAG

0 30 60

SCALE IN FEET

THE WHITMAN CompanieS, INC.	DEXTER CHEMICAL LLC BRONX, NEW YORK	
	SITE MAP	
ORIG. BY: CC	DWG. BY: T&D	CHK. BY: CC
DWG.#: 970910A1	DATE: JULY 1999	FIGURE: 2



LEGEND

- (A) – AREA IDENTIFICATION TAG
- B-3 ⊙ – SOIL BORING LOCATION (MARCH 1998)
- ITA-1 ▲ – ISOPROPYL ALCOHOL TANK SOIL BORING LOCATION (NOV. 1997)
- HO-3 • – HEATING OIL TANK SOIL BORING LOCATION (NOV. 1997)
- ISB-3 ■ – INTERIOR SOIL BORING LOCATION (NOV. 1997)
- MW-1 ▣ – GROUNDWATER MONITORING WELL LOCATION (MARCH 1998)

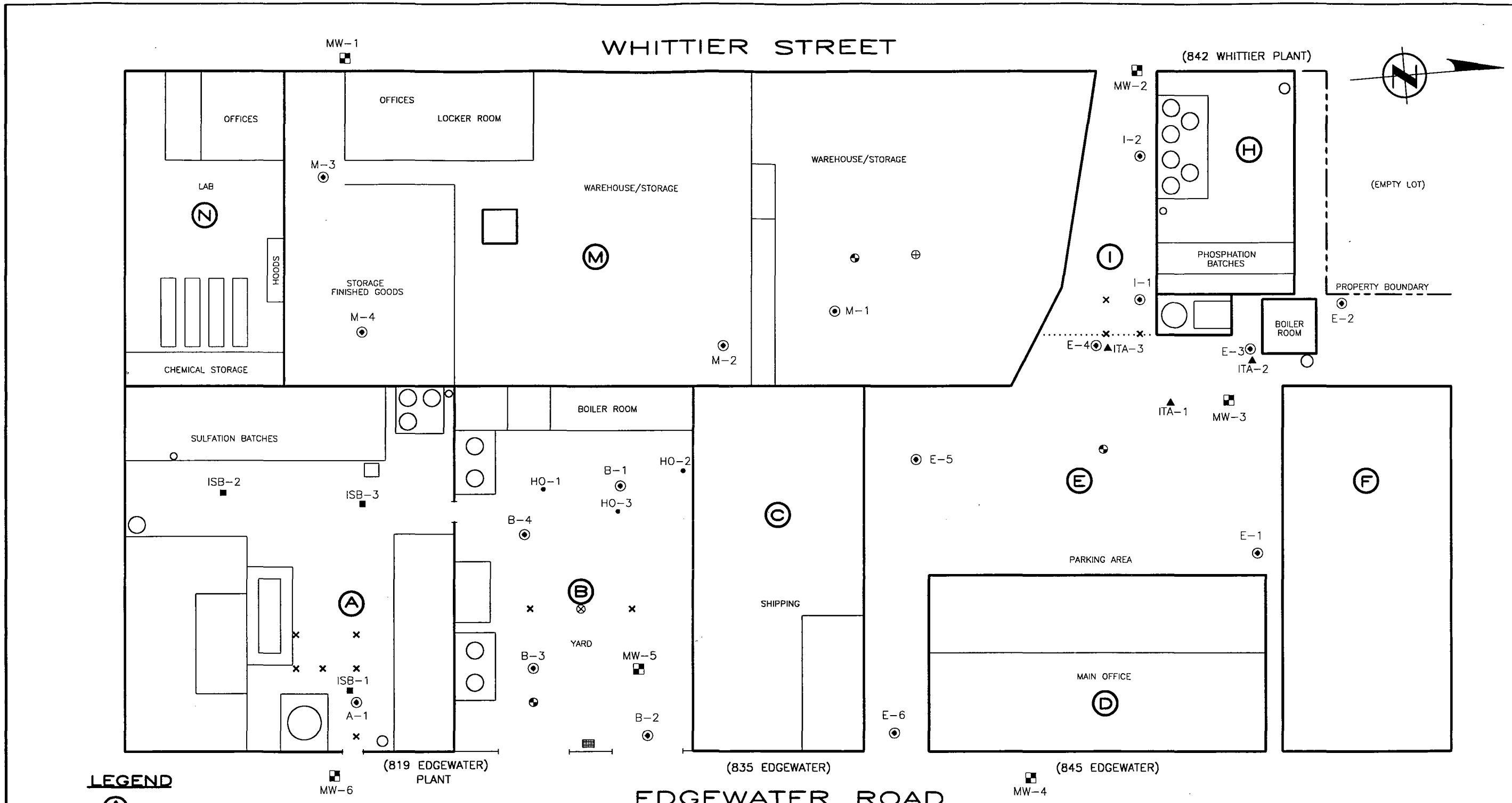
0 30 60
SCALE IN FEET

THE WHITMAN Companies, INC.

DEXTER CHEMICAL LLC
BRONX, NEW YORK

PAST SOIL AND GROUND WATER SAMPLE LOCATIONS

ORIG. BY: CC	DWG. BY: TAD	CHK. BY: CC
DWG.#: 970910A4	DATE: JULY 1999	FIGURE: 3



LEGEND

- (A) – AREA IDENTIFICATION TAG
- B-3 ⊙ – SOIL BORING LOCATION (MARCH 1998)
- ITA-1 ▲ – ISOPROPYL ALCOHOL TANK SOIL BORING LOCATION (NOV. 1997)
- HO-3 ● – HEATING OIL TANK SOIL BORING LOCATION (NOV. 1997)
- ISB-3 ■ – INTERIOR SOIL BORING LOCATION (NOV. 1997)
- MW-1 ⊡ – GROUNDWATER MONITORING WELL LOCATION (MARCH 1998)
- × – PROPOSED SOIL BORING LOCATION
- ⊕ – PROPOSED MONITORING WELL LOCATION
- ⊗ – PROPOSED SOIL BORING AND GRAB GROUND WATER LOCATION

0 30 60
SCALE IN FEET

THE WHITMAN Companies, INC.

DEXTER CHEMICAL CORPORATION
BRONX, NEW YORK

PROPOSED SOIL AND GROUND WATER SAMPLE LOCATIONS

ORIG. BY: CC	DWG. BY: TAD	CHK. BY: CC
DWG.#: 970910A3	DATE: JULY 1999	FIGURE: 4

ATTACHMENTS

ATTACHMENT 1

WASTE WATER ANALYSIS RESULTS

Dexter
97-09-10
Ira-letterhead
Tom

dexter CHEMICAL L.L.C.

845 EDGEWATER ROAD • BRONX, NEW YORK 10474
TELEPHONE:(718) 542-7700 800-339-9111 FAX:(718) 991-7684

RECEIVED
MAY 24 1999
The Whitman Companies, Inc.

May 20, 1999

Mr. Tom Peters
The Whitman Companies, Inc.
44 West Ferris Street
East Brunswick, NJ 08816

Dear Tom:

Enclosed are test results from our most recent semi-annual water testing, as required in our New York City Industrial Waste Water Discharge Permit. This sampling was done in December, 1998.

We have sampled for all the organic and inorganics required by NYC-DEP. As you can see, our wastewater does not constitute a problem. Incidentally, we are planning our next sampling period for the first two weeks of June, and we should have the results by early August.

Regarding your questions on xylene, we have not used this chemical in our plant for many years. It is only used in the laboratory for certain test procedures, and annual usage is about one gallon. We also use about the same amount of benzene, and perhaps smaller amounts of similar chemicals.

After use, these chemicals are collected in a drum marked as hazardous flammable waste. This waste is ultimately disposed of by a suitable hazardous waste company.

As you can see, since we stopped using xylene in production, this chemical has become an extremely small item at Dexter.

If you need any additional information, please do not hesitate to call me.

Sincerely,

David H. Abrahams
Vice President

DHA:ec
Encs.

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab
DECEMBER 31, 1998

TARGET COMPOUND LIST - VOLATILE ANALYSIS BY GC/MS

Lab Number: 302793 Data File: >G9123
Client: DEXTER CHEMICAL
Sample source: Whitter Plant
Sample ID: Composite
Sample date: 12/15/98
Sampled by: Customer Analysis Date: 12/23/98 Column: DB-624
At lab date: 12/16/98 Dilution Factor: 20
Matrix: Water Init Sample volume= 0.25ml Final volume= 5ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Chloromethane	U	U	92
Bromomethane	U	U	76
Vinyl chloride	U	U	34
Chloroethane	U	U	36
Methylene chloride	21J	U	54
Acetone	U	U	90
Carbon disulfide	U	U	34
1,1-Dichloroethene	U	U	34
1,1-Dichloroethane	U	U	28
trans-1,2-Dichloroethene	U	U	34
cis-1,2-Dichloroethene	U	U	34
Chloroform	U	U	32
1,2-Dichloroethane	U	U	38
2-Butanone	U	U	48
1,1,1-Trichloroethane	U	U	10
Carbon tetrachloride	U	U	12
Bromodichloromethane	U	U	12
1,2-Dichloropropane	U	U	12
cis-1,3-Dichloropropene	U	U	10
Trichloroethene	U	U	12
Dibromochloromethane	U	U	12
1,1,2-Trichloroethane	U	U	10
Benzene	U	U	10
trans-1,3-Dichloropropene	U	U	12
Bromoform	U	U	16
4-Methyl-2-pentanone	U	U	22
2-Hexanone	U	U	24
Tetrachloroethene	U	U	14
1,1,2,2-Tetrachloroethane	U	U	10
Toluene	U	U	16
Chlorobenzene	U	U	12
Ethylbenzene	U	U	14
Styrene	U	U	20
p&m-Xylene	U	U	18
o-Xylene	U	U	18
total Xylenes	U	U	18
1,3-Dichlorobenzene	U	U	14
1,4-Dichlorobenzene	U	U	10
1,2-Dichlorobenzene	U	U	30

ug/l = micrograms/liter or ppb
ND: Not Determined.
IND: Indeterminable.
U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LOU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab
JANUARY 5, 1999

TARGET COMPOUND LIST - BASE/NEUTRAL FRACTION ANALYSIS BY GC/MS

Lab Number: 302793 Data File: >F3318
Client: DEXTER CHEMICAL
Sample source: Whitter Plant
Sample ID: Composite
Sample date: 12/15/98 Extracted Date: 12/21/98
Sampled by: Customer Analysis Date: 01/04/99 Column: 30m SPB-5
At lab date: 12/16/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
bis(2-Chloroethyl)ether	U	U	10
1,3-Dichlorobenzene	U	U	24
1,4-Dichlorobenzene	U	U	23
1,2-Dichlorobenzene	U	U	24
bis(2-Chloroisopropyl)ether	U	U	12
N-Nitroso-di-n-propylamine	U	U	10
Hexachloroethane	U	U	29
Nitrobenzene	U	U	10
Isophorone	U	U	10
bis(2-Chloroethoxy)methane	U	U	10
1,2,4-Trichlorobenzene	U	U	23
Naphthalene	U	U	20
4-Chloroaniline	U	U	10
Hexachlorobutadiene	U	U	10
2-Methylnaphthalene	U	U	21
Hexachlorocyclopentadiene	U	U	15
2-Chloronaphthalene	U	U	20
2-Nitroaniline	U	U	10
Dimethyl phthalate	U	U	46
Acenaphthylene	U	U	15
2,6-Dinitrotoluene	U	U	10
3-Nitroaniline	U	U	10
Acenaphthene	U	U	19
Dibenzofuran	U	U	15
2,4-Dinitrotoluene	U	U	10
Diethyl phthalate	U	U	23
4-Chlorophenyl phenyl ether	U	U	20
Fluorene	U	U	17
4-Nitroaniline	U	U	10
N-Nitrosodiphenylamine	U	U	10
4-Bromophenyl phenyl ether	U	U	19
Hexachlorobenzene	U	U	19
Phenanthrene	U	U	9
Anthracene	U	U	8

(continued on next page)

(continued from previous page)

Lab Number: 302793 Data File: >F3318
Client: DEXTER CHEMICAL

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Di-n-butylphthalate	U	U	25
Fluoranthene	U	U	6
Pyrene	U	U	5
Butyl benzylphthalate	U	U	12
3,3'-Dichlorobenzidine	U	U	10
Benzo(a)anthracene	U	U	5
Chrysene	U	U	5
bis(2-Ethylhexyl)phthalate	U	U	30
Di-n-octylphthalate	U	U	10
Benzo(b)fluoranthene	U	U	7
Benzo(k)fluoranthene	U	U	7
Benzo(a)pyrene	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	11
Dibenz(a,h)anthracene	U	U	5
Benzo(g,h,i)perylene	U	U	5
Carbazole	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
TRO

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 30, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302793
Client: DEXTER CHEMICAL
Sample source: Whitter Plant
Sample ID: Composite
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Lead	U	U	0.004	1	12/29/98
Zinc	0.030	U	0.020	1	12/29/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LYN

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302794
Client: DEXTER CHEMICAL
Sample Source: Whitter Plant
Sample ID: Grab
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Chromium, Hexavalent	1	U	U	0.010	12/16/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302795
Client: DEXTER CHEMICAL
Sample Source: Whitter Plant
Sample ID: Evening
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/24/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302796
Client: DEXTER CHEMICAL
Sample Source: Whitter Plant
Sample ID: Morning
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/24/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302797
Client: DEXTER CHEMICAL
Sample Source: Whitter Plant
Sample ID: Afternoon
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/24/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 30, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302798
Client: DEXTER CHEMICAL
Sample source: Whitter Plant
Sample ID: Trap
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Cadmium	U	U	0.005	1	12/29/98
Copper	0.042	U	0.005	1	12/29/98
Lead	U	U	0.004	1	12/29/98
Mercury	U	U	0.0002	1	12/23/98
Molybdenum	U	U	0.010	1	12/29/98
Nickel	U	U	0.005	1	12/29/98
Silver	U	U	0.005	1	12/29/98
Zinc	0.033	U	0.020	1	12/29/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LYN

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

DECEMBER 23, 1998

TARGET COMPOUND LIST - VOLATILE ANALYSIS BY GC/MS
PLUS 10 PEAKS

Lab Number: 302655 Data File: >G9044
Client: DEXTER CHEMICAL
Sample source: Whittier St. Plant
Sample ID: Composite
Sample date: 12/11/98
Sampled by: Customer Analysis Date: 12/18/98 Column: DB-624
At lab date: 12/11/98 Dilution Factor: 20
Matrix: Water Init Sample volume= 0.25ml Final volume= 5ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Chloromethane	U	U	92
Bromomethane	U	U	76
Vinyl chloride	U	U	34
Chloroethane	U	U	36
Methylene chloride	U	U	54
Acetone	U	U	90
Carbon disulfide	U	U	34
1,1-Dichloroethene	U	U	34
1,1-Dichloroethane	U	U	28
trans-1,2-Dichloroethene	U	U	34
cis-1,2-Dichloroethene	U	U	34
Chloroform	41	U	32
1,2-Dichloroethane	U	U	38
2-Butanone	U	U	48
1,1,1-Trichloroethane	U	U	10
Carbon tetrachloride	U	U	12
Bromodichloromethane	U	U	12
1,2-Dichloropropane	U	U	12
cis-1,3-Dichloropropene	U	U	10
Trichloroethene	U	U	12
Dibromochloromethane	U	U	12
1,1,2-Trichloroethane	U	U	10
Benzene	U	U	10
trans-1,3-Dichloropropene	U	U	12
Bromoform	U	U	16
4-Methyl-2-pentanone	U	U	22
2-Hexanone	U	U	24
Tetrachloroethene	U	U	14
1,1,2,2-Tetrachloroethane	U	U	10
Toluene	U	U	16
Chlorobenzene	U	U	12
Ethylbenzene	U	U	14
Styrene	U	U	20
p&m-Xylene	U	U	18
o-Xylene	U	U	18
total Xylenes	U	U	18
1,3-Dichlorobenzene	U	U	14
1,4-Dichlorobenzene	U	U	10
1,2-Dichlorobenzene	U	U	30

ug/l = micrograms/liter or ppb
ND: Not Determined.
IND: Indeterminable.
U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
ALI

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 5, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - ACID FRACTION ANALYSIS BY GC/MS
PLUS 10 PEAKS

Lab Number: 302655 Data File: >F3385
Client: DEXTER CHEMICAL
Sample source: Whittier St. Plant
Sample ID: Composite
Sample date: 12/11/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
2-Chlorophenol	U	U	10
2-Nitrophenol	U	U	10
Phenol	U	U	18
2,4-Dimethylphenol	U	U	10
2,4-Dichlorophenol	U	U	10
2,4,6-Trichlorophenol	U	U	10
Pentachlorophenol	U	U	10
2,4-Dinitrophenol	U	U	36
4,6-Dinitro-2-methylphenol	U	U	10
4-Nitrophenol	U	U	10
4-Chloro-3-methylphenol	U	U	10
4-Methylphenol	U	U	10
2,4,5-Trichlorophenol	U	U	10
2-Methylphenol	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
PAU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 5, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - BASE/NEUTRAL FRACTION ANALYSIS BY GC/MS
PLUS 15 PEAKS

Lab Number: 302655 Data File: >F3385
Client: DEXTER CHEMICAL
Sample source: Whittier St. Plant
Sample ID: Composite
Sample date: 12/11/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
bis(2-Chloroethyl)ether	U	U	10
1,3-Dichlorobenzene	U	U	24
1,4-Dichlorobenzene	U	U	23
1,2-Dichlorobenzene	U	U	24
bis(2-Chloroisopropyl)ether	U	U	12
N-Nitroso-di-n-propylamine	U	U	10
Hexachloroethane	U	U	29
Nitrobenzene	U	U	10
Isophorone	U	U	10
bis(2-Chloroethoxy)methane	U	U	10
1,2,4-Trichlorobenzene	U	U	23
Naphthalene	U	U	20
4-Chloroaniline	U	U	10
Hexachlorobutadiene	U	U	10
2-Methylnaphthalene	U	U	21
Hexachlorocyclopentadiene	U	U	15
2-Chloronaphthalene	U	U	20
2-Nitroaniline	U	U	10
Dimethyl phthalate	U	U	46
Acenaphthylene	U	U	15
2,6-Dinitrotoluene	U	U	10
3-Nitroaniline	U	U	10
Acenaphthene	U	U	19
Dibenzofuran	U	U	15
2,4-Dinitrotoluene	U	U	10
Diethyl phthalate	U	U	23
4-Chlorophenyl phenyl ether	U	U	20
Fluorene	U	U	17
4-Nitroaniline	U	U	10
N-Nitrosodiphenylamine	U	U	10
4-Bromophenyl phenyl ether	U	U	19
Hexachlorobenzene	U	U	19
Phenanthrene	U	U	9
Anthracene	U	U	8

(continued on next page)

(continued from previous page)

Lab Number: 302655 Data File: >F3385
Client: DEXTER CHEMICAL

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Di-n-butylphthalate	U	U	25
Fluoranthene	U	U	6
Pyrene	U	U	5
Butyl benzylphthalate	U	U	12
3,3'-Dichlorobenzidine	U	U	10
Benzo(a)anthracene	U	U	5
Chrysene	U	U	5
bis(2-Ethylhexyl)phthalate	32	U	30
Di-n-octylphthalate	U	U	10
Benzo(b)fluoranthene	U	U	7
Benzo(k)fluoranthene	U	U	7
Benzo(a)pyrene	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	11
Dibenz(a,h)anthracene	U	U	5
Benzo(g,h,i)perylene	U	U	5
Carbazole	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
PAU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302655
Client: DEXTER CHEMICAL
Sample source: Whittier St. Plant
Sample ID: Composite
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Lead	U	U	0.004	1	12/16/98
Zinc	0.042	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302656
Client: DEXTER CHEMICAL
Sample Source: Whittier St. Plant
Sample ID: Grab
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

ARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
ıromium, Hexavalent	1	U	U	0.010	12/12/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number:	302657
Client:	DEXTER CHEMICAL
Sample Source:	Whittier St. Plant
Sample ID:	Evening
Sample matrix:	LIQUID (AQUEOUS)
Sample date:	12/11/98
Sampled by:	Customer
At lab date:	12/11/98

ARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
yanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302658
Client: DEXTER CHEMICAL
Sample Source: Whittier St. Plant
Sample ID: Afternoon
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302659
Client: DEXTER CHEMICAL
Sample Source: Whittier St. Plant
Sample ID: Morning
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302660
Client: DEXTER CHEMICAL
Sample source: Whittier St. Plant
Sample ID: Trap (HT)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit		Analysis Date
Cadmium	U	U	0.005	1	12/16/98
Copper	0.027	U	0.005	1	12/16/98
Lead	U	U	0.004	1	12/16/98
Mercury	U	U	0.0002	1	12/22/98
Molybdenum	U	U	0.010	1	12/16/98
Nickel	U	U	0.005	1	12/16/98
Silver	U	U	0.005	1	12/16/98
Zinc	0.034	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

DECEMBER 24, 1998

TARGET COMPOUND LIST - VOLATILE ANALYSIS BY GC/MS

Lab Number: 302543 Data File: >G9119
Client: DEXTER CHEMICAL
Sample source: Whitter St. Plant
Sample ID: Composite
Sample date: 12/10/98
Sampled by: Customer Analysis Date: 12/23/98 Column: DB-624
At lab date: 12/11/98 Dilution Factor: 20
Matrix: Water Init Sample volume= 0.25ml Final volume= 5ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Chloromethane	U	U	92
Bromomethane	U	U	76
Vinyl chloride	U	U	34
Chloroethane	U	U	36
Methylene chloride	U	U	54
Acetone	U	U	90
Carbon disulfide	U	U	34
1,1-Dichloroethene	U	U	34
1,1-Dichloroethane	U	U	28
trans-1,2-Dichloroethene	U	U	34
cis-1,2-Dichloroethene	U	U	34
Chloroform	U	U	32
1,2-Dichloroethane	U	U	38
2-Butanone	U	U	48
1,1,1-Trichloroethane	U	U	10
Carbon tetrachloride	U	U	12
Bromodichloromethane	U	U	12
1,2-Dichloropropane	U	U	12
cis-1,3-Dichloropropene	U	U	10
Trichloroethene	U	U	12
Dibromochloromethane	U	U	12
1,1,2-Trichloroethane	U	U	10
Benzene	22	U	10
trans-1,3-Dichloropropene	U	U	12
Bromoform	U	U	16
4-Methyl-2-pentanone	U	U	22
2-Hexanone	U	U	24
Tetrachloroethene	U	U	14
1,1,2,2-Tetrachloroethane	U	U	10
Toluene	U	U	16
Chlorobenzene	U	U	12
Ethylbenzene	U	U	14
Styrene	U	U	20
p&m-Xylene	U	U	18
o-Xylene	U	U	18
total Xylenes	U	U	18
1,3-Dichlorobenzene	U	U	14
1,4-Dichlorobenzene	U	U	10
1,2-Dichlorobenzene	U	U	30

ug/l = micrograms/liter or ppb
ND: Not Determined.
IND: Indeterminable.
U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LOU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab
JANUARY 5, 1999

TARGET COMPOUND LIST - ACID FRACTION ANALYSIS BY GC/MS

Lab Number: 302543 Data File: >F3383
Client: DEXTER CHEMICAL
Sample source: Whitter St. Plant
Sample ID: Composite
Sample date: 12/10/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
2-Chlorophenol	U	U	10
2-Nitrophenol	U	U	10
Phenol	U	U	18
2,4-Dimethylphenol	U	U	10
2,4-Dichlorophenol	U	U	10
2,4,6-Trichlorophenol	U	U	10
Pentachlorophenol	U	U	10
2,4-Dinitrophenol	U	U	36
4,6-Dinitro-2-methylphenol	U	U	10
4-Nitrophenol	U	U	10
4-Chloro-3-methylphenol	U	U	10
4-Methylphenol	U	U	10
2,4,5-Trichlorophenol	U	U	10
2-Methylphenol	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
PAU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 5, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - BASE/NEUTRAL FRACTION ANALYSIS BY GC/MS

Lab Number: 302543 Data File: >F3383
Client: DEXTER CHEMICAL
Sample source: Whitter St. Plant
Sample ID: Composite
Sample date: 12/10/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
bis(2-Chloroethyl)ether	U	U	10
1,3-Dichlorobenzene	U	U	24
1,4-Dichlorobenzene	U	U	23
1,2-Dichlorobenzene	U	U	24
bis(2-Chloroisopropyl)ether	U	U	12
N-Nitroso-di-n-propylamine	U	U	10
Hexachloroethane	U	U	29
Nitrobenzene	U	U	10
Isophorone	U	U	10
bis(2-Chloroethoxy)methane	U	U	10
1,2,4-Trichlorobenzene	U	U	23
Naphthalene	U	U	20
4-Chloroaniline	U	U	10
Hexachlorobutadiene	U	U	10
2-Methylnaphthalene	U	U	21
Hexachlorocyclopentadiene	U	U	15
2-Chloronaphthalene	U	U	20
2-Nitroaniline	U	U	10
Dimethyl phthalate	U	U	46
Acenaphthylene	U	U	15
2,6-Dinitrotoluene	U	U	10
3-Nitroaniline	U	U	10
Acenaphthene	U	U	19
Dibenzofuran	U	U	15
2,4-Dinitrotoluene	U	U	10
Diethyl phthalate	U	U	23
4-Chlorophenyl phenyl ether	U	U	20
Fluorene	U	U	17
4-Nitroaniline	U	U	10
N-Nitrosodiphenylamine	U	U	10
4-Bromophenyl phenyl ether	U	U	19
Hexachlorobenzene	U	U	19
Phenanthrene	U	U	9
Anthracene	U	U	8

(continued on next page)

(continued from previous page)

Lab Number: 302543
Client: DEXTER CHEMICAL

Data File: >F3383

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Di-n-butylphthalate	U	U	25
Fluoranthene	U	U	6
Pyrene	U	U	5
Butyl benzylphthalate	18	U	12
3,3'-Dichlorobenzidine	U	U	10
Benzo(a)anthracene	U	U	5
Chrysene	U	U	5
bis(2-Ethylhexyl)phthalate	420	U	30
Di-n-octylphthalate	U	U	10
Benzo(b)fluoranthene	U	U	7
Benzo(k)fluoranthene	U	U	7
Benzo(a)pyrene	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	11
Dibenz(a,h)anthracene	U	U	5
Benzo(g,h,i)perylene	U	U	5
Carbazole	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
PAU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302543
Client: DEXTER CHEMICAL
Sample source: Whitter St. Plant
Sample ID: Composite
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Lead	U	U	0.004	1	12/16/98
Zinc	0.025	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302544
Client: DEXTER CHEMICAL
Sample Source: Whitter St. Plant
Sample ID: Grab
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98

ARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
ıromium, Hexavalent	1	U	U	0.010	12/11/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302545
Client: DEXTER CHEMICAL
Sample Source: Whitter St. Plant
Sample ID: Evening
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302546
Client: DEXTER CHEMICAL
Sample Source: Whitter St. Plant
Sample ID: Morning
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302547
Client: DEXTER CHEMICAL
Sample Source: Whitter St. Plant
Sample ID: Afternoon
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302548
Client: DEXTER CHEMICAL
Sample source: Whitter St. Plant
Sample ID: Trap
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Cadmium	U	U	0.005	1	12/16/98
Copper	0.055	U	0.005	1	12/16/98
Lead	U	U	0.004	1	12/16/98
Mercury	U	U	0.0002	1	12/18/98
Molybdenum	U	U	0.010	1	12/16/98
Nickel	U	U	0.005	1	12/16/98
Silver	U	U	0.005	1	12/16/98
Zinc	0.040	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

DECEMBER 31, 1998

TARGET COMPOUND LIST - VOLATILE ANALYSIS BY GC/MS

Lab Number: 302799 Data File: >G9175
Client: DEXTER CHEMICAL
Sample source: Edgewater Plant
Sample ID: Composite
Sample date: 12/15/98
Sampled by: Customer Analysis Date: 12/29/98 Column: DB-624
At lab date: 12/16/98 Dilution Factor: 50
Matrix: Water Init Sample volume= 0.1ml Final volume= 5ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Chloromethane	U	U	230
Bromomethane	U	U	190
Vinyl chloride	U	U	85
Chloroethane	U	U	90
Methylene chloride	U	U	140
Acetone	U	U	230
Carbon disulfide	U	U	85
1,1-Dichloroethene	U	U	85
1,1-Dichloroethane	U	U	70
trans-1,2-Dichloroethene	U	U	85
cis-1,2-Dichloroethene	U	U	85
Chloroform	U	U	80
1,2-Dichloroethane	U	U	95
2-Butanone	U	U	120
1,1,1-Trichloroethane	U	U	25
Carbon tetrachloride	U	U	30
Bromodichloromethane	U	U	30
1,2-Dichloropropane	U	U	30
cis-1,3-Dichloropropene	U	U	25
Trichloroethene	U	U	30
Dibromochloromethane	U	U	30
1,1,2-Trichloroethane	U	U	25
Benzene	U	U	25
trans-1,3-Dichloropropene	U	U	30
Bromoform	U	U	40
4-Methyl-2-pentanone	U	U	55
2-Hexanone	U	U	60
Tetrachloroethene	U	U	35
1,1,2,2-Tetrachloroethane	U	U	25
Toluene	U	U	40
Chlorobenzene	U	U	30
Ethylbenzene	U	U	35
Styrene	U	U	50
p&m-Xylene	U	U	45
o-Xylene	U	U	45
total Xylenes	U	U	45
1,3-Dichlorobenzene	U	U	35
1,4-Dichlorobenzene	U	U	25
1,2-Dichlorobenzene	U	U	75

ug/l = micrograms/liter or ppb
ND: Not Determined.
IND: Indeterminable.
U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LOU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

JANUARY 5, 1999

TARGET COMPOUND LIST - ACID FRACTION ANALYSIS BY GC/MS

Lab Number: 302799 Data File: >F3386
Client: DEXTER CHEMICAL
Sample source: Edgewater Plant
Sample ID: Composite
Sample date: 12/15/98 Extracted Date: 12/21/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/16/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
2-Chlorophenol	U	U	10
2-Nitrophenol	U	U	10
Phenol	U	U	18
2,4-Dimethylphenol	U	U	10
2,4-Dichlorophenol	U	U	10
2,4,6-Trichlorophenol	U	U	10
Pentachlorophenol	U	U	10
2,4-Dinitrophenol	U	U	36
4,6-Dinitro-2-methylphenol	U	U	10
4-Nitrophenol	U	U	10
4-Chloro-3-methylphenol	U	U	10
4-Methylphenol	U	U	10
2,4,5-Trichlorophenol	U	U	10
2-Methylphenol	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
TRO

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 5, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - BASE/NEUTRAL FRACTION ANALYSIS BY GC/MS

Lab Number: 302799 Data File: >F3386
Client: DEXTER CHEMICAL
Sample source: Edgewater Plant
Sample ID: Composite
Sample date: 12/15/98 Extracted Date: 12/21/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/16/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
bis(2-Chloroethyl)ether	U	U	10
1,3-Dichlorobenzene	U	U	24
1,4-Dichlorobenzene	U	U	23
1,2-Dichlorobenzene	U	U	24
bis(2-Chloroisopropyl)ether	U	U	12
N-Nitroso-di-n-propylamine	U	U	10
Hexachloroethane	U	U	29
Nitrobenzene	U	U	10
Isophorone	U	U	10
bis(2-Chloroethoxy)methane	U	U	10
1,2,4-Trichlorobenzene	U	U	23
Naphthalene	U	U	20
4-Chloroaniline	U	U	10
Hexachlorobutadiene	U	U	10
2-Methylnaphthalene	U	U	21
Hexachlorocyclopentadiene	U	U	15
2-Chloronaphthalene	U	U	20
2-Nitroaniline	U	U	10
Dimethyl phthalate	U	U	46
Acenaphthylene	U	U	15
2,6-Dinitrotoluene	U	U	10
3-Nitroaniline	U	U	10
Acenaphthene	U	U	19
Dibenzofuran	U	U	15
2,4-Dinitrotoluene	U	U	10
Diethyl phthalate	U	U	23
4-Chlorophenyl phenyl ether	U	U	20
Fluorene	U	U	17
4-Nitroaniline	U	U	10
N-Nitrosodiphenylamine	U	U	10
4-Bromophenyl phenyl ether	U	U	19
Hexachlorobenzene	U	U	19
Phenanthrene	U	U	9
Anthracene	U	U	8

(continued on next page)

(continued from previous page)

Lab Number: 302799 Data File: >F3386
Client: DEXTER CHEMICAL

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Di-n-butylphthalate	U	U	25
Fluoranthene	U	U	6
Pyrene	U	U	5
Butyl benzylphthalate	U	U	12
3,3'-Dichlorobenzidine	U	U	10
Benzo(a)anthracene	U	U	5
Chrysene	U	U	5
bis(2-Ethylhexyl)phthalate	U	U	30
Di-n-octylphthalate	U	U	10
Benzo(b)fluoranthene	U	U	7
Benzo(k)fluoranthene	U	U	7
Benzo(a)pyrene	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	11
Dibenz(a,h)anthracene	U	U	5
Benzo(g,h,i)perylene	U	U	5
Carbazole	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
TRO

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 30, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302799
Client: DEXTER CHEMICAL
Sample source: Edgewater Plant
Sample ID: Composite
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Lead	U	U	0.004	1	12/29/98
Zinc	0.031	U	0.020	1	12/29/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LYN

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302800
Client: DEXTER CHEMICAL
Sample Source: Edgewater Plant
Sample ID: Grab
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Chromium, Hexavalent	1	U	U	0.010	12/16/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302801
Client: DEXTER CHEMICAL
Sample Source: Edgewater Plant
Sample ID: Evening
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/24/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302802
Client: DEXTER CHEMICAL
Sample Source: Edgewater Plant
Sample ID: Morning
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/24/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 29, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302803
Client: DEXTER CHEMICAL
Sample Source: Edgewater Plant
Sample ID: Afternoon
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/24/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 30, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302804
Client: DEXTER CHEMICAL
Sample source: Edgewater Plant
Sample ID: Trap
Sample date: 12/15/98
Sampled by: Customer
At lab date: 12/16/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Cadmium	U	U	0.005	1	12/29/98
Copper	0.028	U	0.005	1	12/29/98
Lead	U	U	0.004	1	12/29/98
Mercury	U	U	0.0002	1	12/23/98
Molybdenum	U	U	0.010	1	12/29/98
Nickel	U	U	0.005	1	12/29/98
Silver	U	U	0.005	1	12/29/98
Zinc	0.039	U	0.020	1	12/29/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LYN

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
201-584-0330

NJ DEP and PA DER Certified.
NJ DEP Lab ID# 14116
US EPA CLP Lab

CONFORMANCE/NONCONFORMANCE SUMMARY CHECKLIST

Lab Numbers: 302662 -667

Volatile Organics: Analyzed ✓ Not Analyzed ____

All tunes were run in required frequency. Yes ✓ No ____

All tune m/z ratios met criteria. Yes ✓ No ____

All initial and/or continuing calibrations were run in required frequency. Yes ✓ No ____

All calibration SPCCs and CCCs met criteria. Yes ____ No ____ NA

Surrogate recoveries met QC criteria. Yes ✓ No ____

All method blanks met contamination criteria. Yes ✓ No ____

All samples were analyzed within the required holding times. Yes ✓ No ____

Comments: _____

Semi-volatile Organics: Analyzed ✓ Not Analyzed ____

All tunes were run in required frequency. Yes ✓ No ____

All tune m/z ratios met criteria. Yes ✓ No ____

All initial and/or continuing calibrations were run in required frequency. Yes ✓ No ____

All calibration SPCCs and CCCs met criteria. Yes ____ No ____ NA

Surrogate recoveries met QC criteria. Yes ✓ No ____

All method blanks met contamination criteria. Yes ✓ No ____

All samples were extracted and analyzed within the required holding times. Yes ✓ No ____

Comments: _____

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
201-584-0330

NJ DEP and PA DER Certified.
NJ DEP Lab ID# 14116
US EPA CLP Lab

CONFORMANCE/NONCONFORMANCE SUMMARY CHECKLIST

Lab Numbers: 302662-667

Pesticides/PCBs: Analyzed____ Not Analyzed✓

All method blanks met contamination criteria. Yes____ No____

All samples were extracted and analyzed within the required holding times. Yes____ No____

Comments:_____

Metals: Analyzed✓ Not Analyzed____

All method blanks met contamination criteria. Yes✓ No____

All samples were analyzed within the required holding times. Yes✓ No____

Comments:_____

Petroleum Hydrocarbons: Analyzed____ Not Analyzed✓

All samples were extracted and analyzed within the required holding times. Yes____ No____

Comments:_____

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
201-584-0330

NJ DEP and PA DER Certified.
NJ DEP Lab ID# 14116
US EPA CLP Lab

CONFORMANCE/NONCONFORMANCE SUMMARY CHECKLIST

Lab Numbers: 302662 - 667

General Chemistry: Analyzed ✓ Not Analyzed ____

All samples were analyzed within the required holding times.
Yes ✓ No ____

Comments: _____

Katie Santacana
Quality Control Coordinator

1/21/99
Date

Volatiles
*40 Code of Federal Regulations
**Method 624

semi-volatiles
*40 Code of Federal Regulations
**Method 625

C/MS Extraction - Separatory Funnel Extraction
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3510B

ead
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

inc
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

hromium, Hexavalent
*Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992
**Method 3500-Cr D

yanide (Automated)
*EPA Methods for Chemical Analysis of Water and Wastes, March 1983
**Method 335.3

Mercury
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 7470A

Cadmium
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

Copper
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

Nickel
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

ilver
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

olybdenum
*Test Methods for Evaluating Solid Wastes, SW846, 3rd edition
**Method 3050A/6010A

* Indicates reference.
* Indicates method.

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

DECEMBER 23, 1998

TARGET COMPOUND LIST - VOLATILE ANALYSIS BY GC/MS
PLUS 10 PEAKS

Lab Number: 302662 Data File: >G9043
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd Plant
Sample ID: Composite
Sample date: 12/11/98
Sampled by: Customer Analysis Date: 12/18/98 Column: DB-624
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 0.5ml Final volume= 5ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Chloromethane	U	U	46
Bromomethane	U	U	38
Vinyl chloride	U	U	17
Chloroethane	U	U	18
Methylene chloride	U	U	27
Acetone	U	U	45
Carbon disulfide	U	U	17
1,1-Dichloroethene	U	U	17
1,1-Dichloroethane	U	U	14
trans-1,2-Dichloroethene	U	U	17
cis-1,2-Dichloroethene	U	U	17
Chloroform	U	U	16
1,2-Dichloroethane	U	U	19
2-Butanone	U	U	24
1,1,1-Trichloroethane	U	U	5
Carbon tetrachloride	U	U	6
Bromodichloromethane	U	U	6
1,2-Dichloropropane	U	U	6
cis-1,3-Dichloropropene	U	U	5
Trichloroethene	U	U	6
Dibromochloromethane	U	U	6
1,1,2-Trichloroethane	U	U	5
Benzene	U	U	5
trans-1,3-Dichloropropene	U	U	6
Bromoform	U	U	8
4-Methyl-2-pentanone	U	U	11
2-Hexanone	U	U	12
Tetrachloroethene	U	U	7
1,1,2,2-Tetrachloroethane	U	U	5
Toluene	U	U	8
Chlorobenzene	U	U	6
Ethylbenzene	U	U	7
Styrene	U	U	10
p&m-Xylene	U	U	9
o-Xylene	U	U	9
total Xylenes	U	U	9
1,3-Dichlorobenzene	U	U	7
1,4-Dichlorobenzene	U	U	5
1,2-Dichlorobenzene	U	U	15

ug/l = micrograms/liter or ppb
ND: Not Determined.
IND: Indeterminable.
U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
ALI

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

JANUARY 7, 1999

TARGET COMPOUND LIST - ACID FRACTION ANALYSIS BY GC/MS
PLUS 10 PEAKS

Lab Number: 302662 Data File: >F3388
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd Plant
Sample ID: Composite
Sample date: 12/11/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/99 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 50
Matrix: Water Init Sample volume= 1000ml Final volume= 50ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
2-Chlorophenol	U	U	50
2-Nitrophenol	U	U	50
Phenol	U	U	90
2,4-Dimethylphenol	U	U	50
2,4-Dichlorophenol	U	U	50
2,4,6-Trichlorophenol	U	U	50
Pentachlorophenol	U	U	50
2,4-Dinitrophenol	U	U	180
4,6-Dinitro-2-methylphenol	U	U	50
4-Nitrophenol	U	U	50
4-Chloro-3-methylphenol	U	U	50
4-Methylphenol	U	U	50
2,4,5-Trichlorophenol	U	U	50
2-Methylphenol	U	U	50

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
NEE

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 7, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - BASE/NEUTRAL FRACTION ANALYSIS BY GC/MS
PLUS 15 PEAKS

Lab Number: 302662 Data File: >F3388
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd Plant
Sample ID: Composite
Sample date: 12/11/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/99 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 50
Matrix: Water Init Sample volume= 1000ml Final volume= 50ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
bis(2-Chloroethyl)ether	U	U	50
1,3-Dichlorobenzene	U	U	120
1,4-Dichlorobenzene	U	U	120
1,2-Dichlorobenzene	U	U	120
bis(2-Chloroisopropyl)ether	U	U	60
N-Nitroso-di-n-propylamine	U	U	50
Hexachloroethane	U	U	150
Nitrobenzene	U	U	50
Isophorone	U	U	50
bis(2-Chloroethoxy)methane	U	U	50
1,2,4-Trichlorobenzene	U	U	120
Naphthalene	U	U	100
4-Chloroaniline	U	U	50
Hexachlorobutadiene	U	U	50
2-Methylnaphthalene	U	U	110
Hexachlorocyclopentadiene	U	U	75
2-Chloronaphthalene	U	U	100
2-Nitroaniline	U	U	50
Dimethyl phthalate	U	U	230
Acenaphthylene	U	U	75
2,6-Dinitrotoluene	U	U	50
3-Nitroaniline	U	U	50
Acenaphthene	U	U	95
Dibenzofuran	U	U	75
2,4-Dinitrotoluene	U	U	50
Diethyl phthalate	U	U	120
4-Chlorophenyl phenyl ether	U	U	100
Fluorene	U	U	85
4-Nitroaniline	U	U	50
N-Nitrosodiphenylamine	U	U	50
4-Bromophenyl phenyl ether	U	U	95
Hexachlorobenzene	U	U	95
Phenanthrene	U	U	45
Anthracene	U	U	40

(continued on next page)

(continued from previous page)

Lab Number: 302662 Data File: >F3388
Client: DEXTER CHEMICAL

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Di-n-butylphthalate	U	U	130
Fluoranthene	U	U	30
Pyrene	U	U	25
Butyl benzylphthalate	U	U	60
3,3'-Dichlorobenzidine	U	U	50
Benzo(a)anthracene	U	U	25
Chrysene	U	U	25
bis(2-Ethylhexyl)phthalate	U	U	150
Di-n-octylphthalate	U	U	50
Benzo(b)fluoranthene	U	U	35
Benzo(k)fluoranthene	U	U	35
Benzo(a)pyrene	U	U	25
Indeno(1,2,3-cd)pyrene	U	U	55
Dibenz(a,h)anthracene	U	U	25
Benzo(g,h,i)perylene	U	U	25
Carbazole	U	U	50

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
NEE

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302662
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd Plant
Sample ID: Composite
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Lead	U	U	0.004	1	12/16/98
Zinc	0.036	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302663
Client: DEXTER CHEMICAL
Sample Source: Edgewater Rd Plant
Sample ID: Grab
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

ARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
hromium, Hexavalent	1	U	U	0.010	12/12/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302664
Client: DEXTER CHEMICAL
Sample Source: Edgewater Rd Plant
Sample ID: Evening
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302665
Client: DEXTER CHEMICAL
Sample Source: Edgewater Rd Plant
Sample ID: Afternoon
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

ARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
yanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302666
Client: DEXTER CHEMICAL
Sample Source: Edgewater Rd Plant
Sample ID: Morning
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98

ARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
yanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302667
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd Plant
Sample ID: Trap (HT)
Sample date: 12/11/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Cadmium	U	U	0.005	1	12/16/98
Copper	0.045	U	0.005	1	12/16/98
Lead	U	U	0.004	1	12/16/98
Mercury	U	U	0.0002	1	12/22/98
Molybdenum	U	U	0.010	1	12/16/98
Nickel	U	U	0.005	1	12/16/98
Silver	U	U	0.005	1	12/16/98
Zinc	0.034	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

DECEMBER 29, 1998

TARGET COMPOUND LIST - VOLATILE ANALYSIS BY GC/MS

Lab Number: 302552 Data File: >G9121
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd. Plant
Sample ID: Composite
Sample date: 12/10/98
Sampled by: Customer Analysis Date: 12/23/98 Column: DB-624
At lab date: 12/11/98 Dilution Factor: 20
Matrix: Water Init Sample volume= 0.25ml Final volume= 5ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Chloromethane	U	U	92
Bromomethane	U	U	76
Vinyl chloride	U	U	34
Chloroethane	U	U	36
Methylene chloride	U	U	54
Acetone	U	U	90
Carbon disulfide	U	U	34
1,1-Dichloroethene	U	U	34
1,1-Dichloroethane	U	U	28
trans-1,2-Dichloroethene	U	U	34
cis-1,2-Dichloroethene	U	U	34
Chloroform	31J	U	32
1,2-Dichloroethane	U	U	38
2-Butanone	U	U	48
1,1,1-Trichloroethane	U	U	10
Carbon tetrachloride	U	U	12
Bromodichloromethane	U	U	12
1,2-Dichloropropane	U	U	12
cis-1,3-Dichloropropene	U	U	10
Trichloroethene	U	U	12
Dibromochloromethane	U	U	12
1,1,2-Trichloroethane	U	U	10
Benzene	61	U	10
trans-1,3-Dichloropropene	U	U	12
Bromoform	U	U	16
4-Methyl-2-pentanone	U	U	22
2-Hexanone	U	U	24
Tetrachloroethene	U	U	14
1,1,2,2-Tetrachloroethane	U	U	10
Toluene	U	U	16
Chlorobenzene	U	U	12
Ethylbenzene	U	U	14
Styrene	U	U	20
p&m-Xylene	U	U	18
o-Xylene	U	U	18
total Xylenes	U	U	18
1,3-Dichlorobenzene	U	U	14
1,4-Dichlorobenzene	U	U	10
1,2-Dichlorobenzene	U	U	30

ug/l = micrograms/liter or ppb
ND: Not Determined.
IND: Indeterminable.
U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
LOU

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 5, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - ACID FRACTION ANALYSIS BY GC/MS

Lab Number: 302552 Data File: >F3384
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd. Plant
Sample ID: Composite
Sample date: 12/10/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
2-Chlorophenol	U	U	10
2-Nitrophenol	U	U	10
Phenol	U	U	18
2,4-Dimethylphenol	U	U	10
2,4-Dichlorophenol	U	U	10
2,4,6-Trichlorophenol	U	U	10
Pentachlorophenol	U	U	10
2,4-Dinitrophenol	U	U	36
4,6-Dinitro-2-methylphenol	U	U	10
4-Nitrophenol	U	U	10
4-Chloro-3-methylphenol	U	U	10
4-Methylphenol	U	U	10
2,4,5-Trichlorophenol	U	U	10
2-Methylphenol	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
TRO

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
JANUARY 5, 1999

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

TARGET COMPOUND LIST - BASE/NEUTRAL FRACTION ANALYSIS BY GC/MS

Lab Number: 302552 Data File: >F3384
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd. Plant
Sample ID: Composite
Sample date: 12/10/98 Extracted Date: 12/14/98
Sampled by: Customer Analysis Date: 01/05/98 Column: 30m SPB-5
At lab date: 12/11/98 Dilution Factor: 10
Matrix: Water Init Sample volume= 1000ml Final volume= 10ml

Conc. in Sample = (Conc. on Quant Report/Initial Volume)*Final Volume*1000

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
bis(2-Chloroethyl)ether	U	U	10
1,3-Dichlorobenzene	U	U	24
1,4-Dichlorobenzene	U	U	23
1,2-Dichlorobenzene	U	U	24
bis(2-Chloroisopropyl)ether	U	U	12
N-Nitroso-di-n-propylamine	U	U	10
Hexachloroethane	U	U	29
Nitrobenzene	U	U	10
Isophorone	U	U	10
bis(2-Chloroethoxy)methane	U	U	10
1,2,4-Trichlorobenzene	U	U	23
Naphthalene	U	U	20
4-Chloroaniline	U	U	10
Hexachlorobutadiene	U	U	10
2-Methylnaphthalene	U	U	21
Hexachlorocyclopentadiene	U	U	15
2-Chloronaphthalene	U	U	20
2-Nitroaniline	U	U	10
Dimethyl phthalate	U	U	46
Acenaphthylene	U	U	15
2,6-Dinitrotoluene	U	U	10
3-Nitroaniline	U	U	10
Acenaphthene	U	U	19
Dibenzofuran	U	U	15
2,4-Dinitrotoluene	U	U	10
Diethyl phthalate	U	U	23
4-Chlorophenyl phenyl ether	U	U	20
Fluorene	U	U	17
4-Nitroaniline	U	U	10
N-Nitrosodiphenylamine	U	U	10
4-Bromophenyl phenyl ether	U	U	19
Hexachlorobenzene	U	U	19
Phenanthrene	U	U	9
Anthracene	U	U	8

(continued on next page)

(continued from previous page)

Lab Number: 302552 Data File: >F3384
Client: DEXTER CHEMICAL

Parameter	Result ug/l	Method Blank ug/l	Minimum Detection Limit ug/l
Di-n-butylphthalate	U	U	25
Fluoranthene	U	U	6
Pyrene	U	U	5
Butyl benzylphthalate	U	U	12
3,3'-Dichlorobenzidine	U	U	10
Benzo(a)anthracene	U	U	5
Chrysene	U	U	5
bis(2-Ethylhexyl)phthalate	U	U	30
Di-n-octylphthalate	U	U	10
Benzo(b)fluoranthene	U	U	7
Benzo(k)fluoranthene	U	U	7
Benzo(a)pyrene	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	11
Dibenz(a,h)anthracene	U	U	5
Benzo(g,h,i)perylene	U	U	5
Carbazole	U	U	10

ug/l = micrograms/liter or ppb

ND: Not Determined.
IND: Indeterminable.

U: Indicates a compound was analyzed for but not detected at the MDL.
J: Indicates an estimated value. It is utilized when a reported value meets the identification criteria but the result is less than the specified detection limit but greater than zero.
B: Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
TRO

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY(DOH)
NJ #14116 NY #11376
US EPA CLP Lab

INORGANIC LABORATORY ANALYSIS

Lab Number: 302552
Client: DEXTER CHEMICAL
Sample source: Edgewater Rd. Plant
Sample ID: Composite
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98
Matrix: WATER
Results in mg/l (ppm).

Parameter	Sample Result	Method Blank Analysis	Minimum Detection Limit	Dilution Factor	Analysis Date
Lead	U	U	0.004	1	12/16/98
Zinc	0.027	U	0.020	1	12/16/98

U = Not Detected

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.
Copyright ANAlab Inc. 1998.
All rights reserved.
KAT

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number:	302553
Client:	DEXTER CHEMICAL
Sample Source:	Edgewater Rd. Plant
Sample ID:	Grab
Sample matrix:	LIQUID (AQUEOUS)
Sample date:	12/10/98
Sampled by:	Customer
At lab date:	12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Chromium, Hexavalent	1	U	U	0.010	12/11/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number:	302554
Client:	DEXTER CHEMICAL
Sample Source:	Edgewater Rd. Plant
Sample ID:	Evening
Sample matrix:	LIQUID (AQUEOUS)
Sample date:	12/10/98
Sampled by:	Customer
At lab date:	12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number:	302555
Client:	DEXTER CHEMICAL
Sample Source:	Edgewater Rd. Plant
Sample ID:	Morning
Sample matrix:	LIQUID (AQUEOUS)
Sample date:	12/10/98
Sampled by:	Customer
At lab date:	12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ANAlab, Inc. - Randolph Facility
1152 Route 10
Randolph, NJ 07869
973-584-0330, FAX: 973-584-0515
DECEMBER 23, 1998

Certified for: NJ, PA, DE, CT, NY
NJ #14116 NY #11376
US EPA CLP Lab

LABORATORY ANALYSIS

All results are reported in mg/l (ppm) unless otherwise stated.

Lab Number: 302556
Client: DEXTER CHEMICAL
Sample Source: Edgewater Rd. Plant
Sample ID: Afternoon
Sample matrix: LIQUID (AQUEOUS)
Sample date: 12/10/98
Sampled by: Customer
At lab date: 12/11/98

PARAMETER	DILUTION FACTOR	RESULT	METHOD BLANK	MINIMUM DETECTION LIMIT	ANALYSIS DATE
Cyanide, Total	1	U	U	0.010	12/21/98

< = Less than
> = Greater than
U= Not detected, NA= Not applicable.

ANAlab, Inc. - Randolph Facility
Thomas Mancuso, Lab Mgr.

Copyright ANAlab Inc 1998.
All rights reserved.
ROB

ATTACHMENT 2

HEALTH AND SAFETY PLAN

THE WHITMAN COMPANIES, INC.
HEALTH AND SAFETY PLAN
PROJECT NO. 97-09-10

***Project Name:**	Dexter Chemical LLC
***Project No.:**	97-09-10
***Site Location:**	845 Edgewater Road, Bronx, New York
***Mark Out Reference #**	
***Client:**	Dexter Chemical LLC

***Contact:**	Len Sitver, Ken Ballan	***Telephone:**	718-542-7700
***Project Manager:**	Tom Peter	***Telephone:**	732-390-5858
	Ira Whitman	**Fax Number:**	732-390-9496
***Date:**	July 23, 1999		

Describe Objectives of Field Project	**Tasks: Check all applicable**	**Task No.**
	(X) Drilling	1
	(X) Soil Sampling	2
	(X) Monitor Well Installation	3
	(X) Monitor Well Sampling	4
	( ) Test Pit Installation	___
	( ) Drum Sampling and Consolidation	___
	( ) UST Removal	___
	( ) Waste Pile Classification	___
	(x) Remediation O&M of Systems	___
	( ) Spill Response	___
	( )Soil Excavation/Removal	___
	( ) Other (Backfilling & Grading)	___

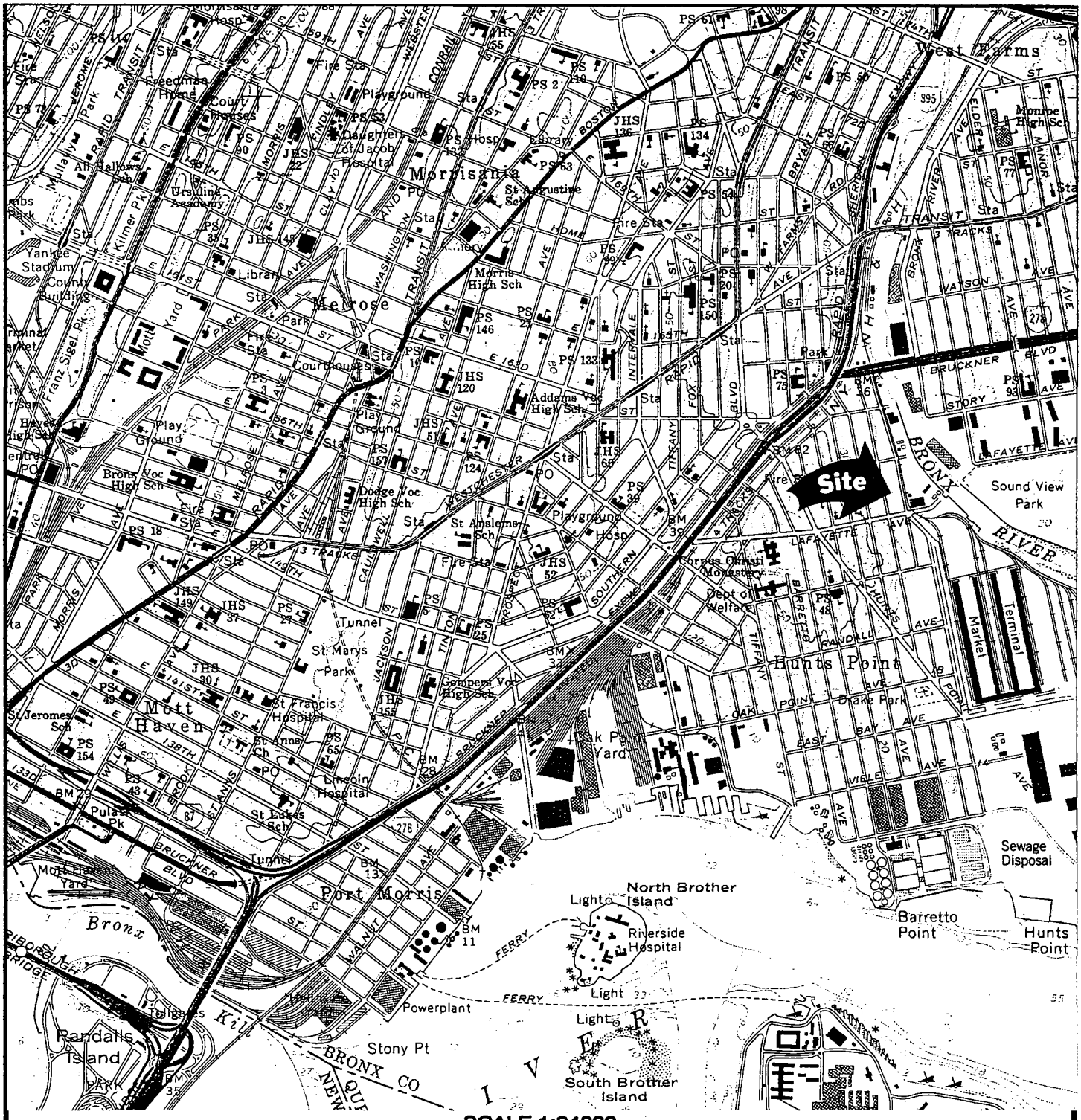
***Surrounding Area**

(X) Residential (X) Industrial ( ) Vacant Land (X) Commercial ( ) Other:

* This plan is provided to subcontractors for informational purposes only. The information contained herein is the best information available to Whitman Companies' personnel at the time of the project. Not withstanding anything to the contrary herein, all subcontractors are solely and independently responsible for insuring that their health and safety plans adequately address federal and state requirements.

SITE LOCATION

See attached U.S.G.S. topographic quadrangle map.



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

.5 .25 0 .5 KILOMETER

MN GN

10 1/2° 167 MILES EAST 2 MILES

UTM GRID AND 1961 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

NEW YORK

QUADRANGLE LOCATION

THE WHITMAN COMPANIES, INC.

DEXTER CHEMICAL CORP.
845 EDGEWATER ROAD
BRONX, NEW YORK

SITE LOCATION ON USGS
CENTRAL PARK, N.Y. QUADRANGLE

ORIGINAL BY:	DRAWN BY:	DRAWING NO:
CC	A Scarf	970910A
CHECKED BY:	DATE:	FIGURE NO:
CC	APRIL 1998	1

JOB-SITE HAZARDS

Physical State of Contaminants:

( ) Liquid (X) Solid ( ) Gas/Vapor ( ) Sludge (X) Unknown ( ) Other, specify:

Characteristics of Contaminants:

( ) Corrosive	( ) Reactive	( ) Explosive	( ) Flammable	(x) Irritant
(X) Toxic	(X) Unknown	( ) Biological	( ) Radiological	(x) Volatile
( ) Other, specify:				

Principal Hazards on Job-Site:

(X) Heat Stress	( ) Cold Stress	(X) Physical Hazards
(X) Noise	(X) Organic Chemicals	(X) Inorganic Chemicals
( ) Explosive/Flammable	( ) Oxygen Deficient	( ) Radiological
( ) Biological	( ) Confined Space*	( ) Electrical
( ) Cutting/Welding	(X) Heavy Equipment	( ) Excavation
( ) Other, specify:		( ) Overhead Hazards

** Caution: Forklift activity at site.

Location of On-site Hazardous Materials:

( ) Underground Storage Tanks	( ) Drums	( ) Pit or Lagoon
( ) Landfill	( ) Lined Sump	( ) Unlined Sump
( ) Above Ground Tanks	( ) Open Dump	(X) Unknown
( ) Other, specify:	(X) Surface Discharge	(X) Subsurface Discharge

**If confined space entry is required, proper permitting and lock-out tag-out procedures must be followed.*

CONTAMINANT DATA*

Known Contaminant(s)	Highest Site Conc.	PEL ppm/mg/m³	IDLH ppm/mg/m³	Symptoms/Effects of Acute Exposure	LEL
Benzene	430 ppb	1 ppm	500 ppm	Irritated eyes, skin, nose, nausea, headache	1.2%
Chlorobenzene	7,200 ppb	75 ppm	1,000 ppm	Irritated eyes, skin, nose, drowsiness	1.3%
Toluene	51 ppb (water)	200 ppm	500 ppm	Irritated eyes, skin, nose, confusion, dizziness, headaches	1.1%
Xylene	26,000 ppb	100 ppm	900 ppm	Irritated eyes, skin, nose, throat, dizziness, excitement, drowsiness	0.9 to 1.1%
1,3-Dichlorobenzene	1,900 ppb	NE	NE		NE
1,4-Dichlorobenzene	14,000 ppb	NE	NE		NE
1,2,4-Trichlorobenzene	110,000 ppb	NE	ND	Irritated eyes, skin, nose	302°F
Naphthalene	28,000 ppb	10 ppm	250 ppm	Irritated eyes, skin, nose, nausea, vomiting, confusion, headaches, profuse sweating, abdominal pain	0.9%
Benzo(a)anthracene	6,800 ppb	NE	NE		NE
Chrysene	7,700 ppb	0.2 mg/m³	80 mg/m³	Dermatitis	NA
Benzo(b)fluoranthene	7,600 ppb	NE	NE		NE
Benzo(k)fluoranthene	3,000 ppb	NE	NE		NE
Benzo(a)pyrene	5,700 ppb	0.2 mg/m³	80 mg/m³	Dermatitis	NA
Dibenz(a,h)anthracene	830 ppb	NE	NE		NE
Arsenic	46.7 ppm	0.5 mg/m³	ND	Irritated skin, respiratory distress, diarrhea, dermatitis	NA
Beryllium	1.1 ppm	0.002 mg/m³	4 mg/m³	Chronic exposure effects only	NA
Chromium	51.8 ppm	1 mg/m³	250 mg/m³	Irritated eyes, skin and dermatitis	NA
Copper	194 ppm	NE	100 mg/m³	Irritated eyes, nose, pharynx, metallic taste	NA
Nickel	46 ppm	1 mg/m³	10 mg/m³	Dermatitis, allergic asthma	NA
Zinc	361 ppm	NE	NE		NE

NA = Not Available ND = Not Determined NE = None Established U = Unknown

*** - NIOSH listings for some of the contaminants are included in Attachment HASP-2.**

Toxic Material Concentration/Exposure Potential:

(X) Low	( ) Medium	( ) High	( ) Unknown

Fire/Explosion Potential:

(X) Low	( ) Medium	( ) High	( ) Unknown

Overall Hazard Evaluation:

(X) Low	( ) Medium	( ) High	( ) Unknown

Justification: OSHA & MSDS emphasize skin protection and respiratory protection for the above contaminants with special emphasis on skin protection.

Required Training for Site Personnel:

- 40-hr OSHA for field technicians & supervisors with 8 hours annual update.

Task Description (Describe Major Tasks from Page One - Attach additional pages if necessary.)

#1 Drilling

#2 GeoProbe Soil Boring Sampling

#3 Monitoring Well Installation

#4 Monitoring Well Sampling

Personal Protective Equipment Required for Tasks Described Above.

Task	Level (Circle One)
#1	A B C **D**
#2	A B C **D**
#3	A B C **D**
#4	A B C **D**
#5	A B C **D**

Description of PPE included in Attachment HASP 3.

**Note: Dexter Chemical requires that hard hats and goggles be worn inside all buildings.

Field Monitoring Equipment (Check under appropriate column.)

Task #	Not Needed	LEL Meter	PID/FID	Personal Sampling Pump	Detector Tubes	Other (Describe)
#1			X			
#2			X			
#3			X			
#4			X			

Action Levels for PPE Upgrade (Describe):

If liquid is encountered and splashing occurs, upgrade to level C (i.e. suit and goggles) to increase skin protection. If PID readings exceed 5 ppm for the ambient air, than upgrade to full/half face respirator with appropriate cartridge may be deemed necessary.

DECONTAMINATION INFORMATION

Attach Site map indicating exclusion, decontamination, and support zones.

Personnel Decontamination (Describe/or attach diagram.) ( ) Not Needed

Hand washing may be necessary for proper decontamination, especially before taking breaks, lunch, and leaving the site. Water will be available on site.

Sampling Equipment Decontamination (Describe/or attach diagram.) ( ) Not Needed

Drilling/GeoProbe equipment will be decontaminated by the subcontractor. Sampling equipment used by Whitman will be decontaminated between each sample.

Heavy Equipment Decontamination (Describe/or attach diagram) ( ) Not Needed

Drilling equipment will be decontaminated between samples. Decontamination of heavy equipment will be performed by Subcontractor.

Disposal Method for Liquids and Solids (Describe/or attach diagram) ( ) Not Needed

Testing and disposal of soil (drill cuttings) and water will be handled by the Client (Dexter Chemical). All soil and water will be contained in 55-gallon drums prior to disposal.

* Decontamination procedures are outlined in Attachment HASP-4.

CONTINGENCY INFORMATION

Site Emergency Contact to be Notified:

Location of Nearest Telephone:

Local Emergency Response Contacts:	**Name**	**Phone**
Ambulance/EMS:		911
Fire Department: Bronx Fire Department		911
Sheriff/Police Dept: NYPD – Bronx		911
Whitman Project Manager: Ira Whitman		(732) 390-5858
New York State Department of Environmental Spills Hotline		(518) 457-7362
USEPA Environmental Response Team		(202)-321-6660
USEPA RCRA Hotline		(800) 424-9346
CHEMTREC		(800)-424-9300
National Response Center		(800) 424-8802
Substance Identification (CAS)		(800) 848-6538
Nearest Local Hospital: Bronx Lebanon Hospital		(718) 588-2997
Hospital Address: 1276 Fulton Avenue, Bronx, New York		
Route to Hospital: See Attachment HASP-1		

Contingency Plans - Summarize Below

In case of emergency, all Whitman staff and subcontractors will meet at the entrance of 895 Edgewater Road, Dexter Chemical office. Dexter Chemical LLC principals' e.g., Len Sitver or Ken Ballan must be notified of site specific emergencies.

PERSONAL HYGIENE

The Whitman Companies or Contractors personnel have the following personal hygiene requirement:

1. No eating, drinking, smoking, gum or tobacco chewing is allowed in the active work zone.
2. Wash hands and face before leaving work area.
3. Contact with contaminated surface or surfaces suspected of being contaminated will be avoided while unprotected.
4. Any person under a physician's care and/or taking medication must inform the site supervisor.
5. Personnel using respirators must be fit tested, clean shaven and trained in respiratory protection.

MEDICAL SURVEILLANCE PROGRAM

See Health and Safety Officer for Standard list of medical surveillance program.

EMERGENCY/PROBLEMS CHAIN-OF-COMMAND

If a release, emergency or other unexpected situation arises onsite, The Whitman Companies should be notified immediately. If The Whitman Companies, Inc. is not on site when the event occurs, please use the following contact list.

Name	Office # and Address	Home #
Dr. Ira Whitman, Principal	The Whitman Companies, Inc. 44 West Ferris Street East Brunswick, NJ 08816 (732) 390-5858	(732) 390-3235
	The Whitman Companies, Inc. 44 West Ferris Street East Brunswick, NJ 08816 (732) 390-5858	(732) 833-0373

Active Work Zone Emergencies

Fire/Explosion: A severe emergency such as a fire or explosion could require immediate evacuation of the site. The emergency response notification process should take place as soon as an incident occurs.

In the event of an evacuation of the Active Work Area, affected personnel will leave immediately, go through decontamination if time permits and reassemble at the closest street. The signal for an evacuation is three (3) long bursts of an air or vehicle horn. Contact local emergency services if needed and contact The Whitman Companies.

Emergency Spill Containment/Control Plan

Spill/Release: Upon a detected spill or release of a hazardous substance or waste, there must be notification to the state (NJDEP), Local Authorities, client, and The Whitman Companies. Spills/Releases should be contained where possible by diking or otherwise isolating the spill/release. If necessary, an emergency response contractor

will be contacted to provide assistance. If product is encountered during soil investigation activities, there must be notification to The Whitman Companies.

In the event of a spill or leak of a liquid chemical or hazardous waste, personnel in the area of the spill will do the following:

- Inform the Site Supervisor immediately
- Determine if adequate protective equipment is available to enter area of the spill i.e., IDLH conditions
- Get spill kit materials
- Identify source of spill
- Contain, absorb and recover spilled substance in proper containers
- Dispose of spilled materials properly, according to local, state and federal regulations

Spill Prevention

The prevention of spills through good work practice is the most important aspect of the spill containment/control plan. The following standard work practices for material handling will minimize the potential for spills.

- All drums and containers used during the cleanup shall meet the appropriate DOT, OSHA and EPA regulations for the wastes that they will contain.
- Drums and containers shall be inspected and their integrity assured prior to moving them. Drums or containers that cannot be inspected before being moved because of storage conditions shall be positioned in an accessible location and inspected prior to further handling.
- Operations on site will be organized so as to minimize the amount of drum or container movement.
- Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment will be stationed in the immediate area. The spill containment program must be sufficient to contain and isolate the entire volume of hazardous substances being transferred.
- Drums or containers that cannot be moved without rupture, leakage, or spills, shall be emptied into a sound container.
- Fire extinguishing equipment meeting 29 CFR 1910 Subpart L shall be on hand ready for use to control fires.

PLAN REVISIONS

The site Health and Safety Plan will be revised whenever the following events occur:

1. The Plan fails in an emergency
2. New physical or chemical hazards are discovered
3. Changes occur in telephone numbers, personnel, etc.

All personnel will be briefed when pertinent changes occur.

Project Manager Approval _____ Date: _____

HEALTH & SAFETY SUMMARY SHEET

1. ACTIVITIES

Installation of two (2) monitoring wells, one (1) grab ground water sample location and twelve (12) soil boring locations.

2. PRINCIPAL HAZARDS

Physical Hazards: cement chips from jackhammer or drill, dust and noise.
Chemical Hazards: decon chemicals, known contaminated soil areas and unknown chemicals in the ground.

3. PPE EQUIPMENT

Eye protection (safety goggles), hearing protection (ear plugs), safety boots, hard hat and latex gloves.

4. HOSPITAL & EMERGENCY NUMBERS

Bronx Lebanon Hospital
1276 Fulton Avenue, Bronx, New York
(718) 588-2997

5. H & S BRIEFING

The Whitman Field Supervisor will coordinate a health & safety briefing prior to the beginning of the day's work activities. This briefing must be given to **all** Whitman personnel **and** Whitman subcontractors working on-site and will include a summary of all the information contained in this Health & Safety Plan.

6. SIGNOFF SHEETS

All personnel attending the health and safety briefing will sign the Health & Safety Plan Signoff Sheet. Copies of the completed Signoff Sheet must be forwarded to the Whitman Office Safety & Health Coordinator and to the main Whitman file on the project.

ATTACHMENT HASP 1

ROUTE TO HOSPITAL

ATTACHMENT HASP 2

NIOSH LISTINGS FOR CHEMICALS (PARTIAL LISTING)

NIOSH Pocket Guide to Chemical Hazards

Arsenic (inorganic compounds, as As)	**CAS** 7440-38-2 (metal)
As (metal)	**RTECS** CG0525000 (metal)
Synonyms & Trade Names Arsenic metal: Arsenia Other synonyms vary depending upon the specific As compound. [Note: OSHA considers "Inorganic Arsenic" to mean copper acetoarsenite & all inorganic compounds containing arsenic except ARSINE.]	**DOT ID & Guide** 1558 152 (metal) 1562 152 (dust)

Exposure Limits	NIOSH REL: Ca C 0.002 mg/m^3 [15-minute] See Appendix A
	OSHA PEL: [1910.1018] TWA 0.010 mg/m^3

IDLH Ca [5 mg/m^3 (as As)] See: IDLH INDEX	**Conversion**

Physical Description
Metal: Silver-gray or tin-white, brittle, odorless solid.

MW: 74.9	BP: Sublimes	MLT: 1135°F (Sublimes)	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 5.73 (metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame.

Incompatibilities & Reactivities
Strong oxidizers, bromine azide [Note: Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.]

Measurement Method
Filter; Acid; Hydride generation atomic absorption spectrometry; IV [#7900] [Also #7300, Elements] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated/Daily Remove: When wet or contaminated Change: Daily Provide: Eyewash, Quick drench	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, skin and/or eye contact ingestion

Symptoms Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, [Potential occupational carcinogen]

Target Organs Liver, kidneys, skin, lungs, lymphatic system

NIOSH Pocket Guide to Chemical Hazards

Benzene	**CAS** 71-43-2
C_6H_6	**RTECS** CY1400000
Synonyms & Trade Names Benzol, Phenyl hydride	**DOT ID & Guide** 1114 130

Exposure Limits	NIOSH REL: Ca TWA 0.1 ppm ST 1 ppm See Appendix A
	OSHA PEL: [1910.1028] TWA 1 ppm ST 5 ppm See Appendix F
IDLH Ca [500 ppm] See: 71432	**Conversion** 1 ppm = 3.19 mg/m^3

Physical Description
Colorless to light-yellow liquid with an aromatic odor. [Note: A solid below 42°F.]

MW: 78.1	BP: 176°F	FRZ: 42°F	Sol: 0.07%
VP: 75 mmHg	IP: 9.24 eV		Sp.Gr: 0.88
Fl.P: 12°F	UEL: 7.8%	LEL: 1.2%	

Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.

Incompatibilities & Reactivities
Strong oxidizers, many fluorides & perchlorates, nitric acid

Measurement Method
Charcoal tube; CS_2; Gas chromatography/Flame ionization detection; IV [#1500, Hydrocarbons]
[Also #3700, #1501] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: N.R. Provide: Eyewash, Quick drench	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, nose, respiratory system; giddiness; headache, nausea, staggered gait; fatigue, anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depressant/depression; [Potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, blood, central nervous system, bone marrow

Cancer Site [leukemia]

NIOSH Pocket Guide to Chemical Hazards

Beryllium & beryllium compounds (as Be)	**CAS** 7440-41-7 (metal)
Be (metal)	**RTECS** DS1750000 (metal)
Synonyms & Trade Names Beryllium metal: Beryllium Other synonyms vary depending upon the specific beryllium compound.	**DOT ID & Guide** 1566 154 (compounds) 1567 134 (powder)

Exposure Limits	NIOSH REL: Ca Not to exceed 0.0005 mg/m^3 See Appendix A
	OSHA PEL: TWA 0.002 mg/m^3 C 0.005 mg/m^3 0.025 mg/m^3 [30-minute maximum peak]

IDLH Ca [4 mg/m^3 (as Be)] See: IDLH INDEX	**Conversion**

Physical Description
Metal: A hard, brittle, gray-white solid.

MW: 9.0	BP: 4532°F	MLT: 2349°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 1.85 (metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of a powder or dust.

Incompatibilities & Reactivities
Acids, caustics, chlorinated hydrocarbons, oxidizers, molten lithium

Measurement Method
Filter; Acid; Graphite furnace atomic absorption spectrometry; IV [#7102] [Also #7300, Elements] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: Daily Remove: When wet or contaminated Change: Daily Provide: Eyewash	**First Aid** (See procedures) Eye: Irrigate immediately Breathing: Fresh air

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin and/or eye contact

Symptoms Berylliosis (chronic exposure): anorexia, weight loss, weakness, chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation eyes; dermatitis; [Potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system

Cancer Site [lung cancer]

See also: INTRODUCTION

NIOSH Pocket Guide to Chemical Hazards

Chlorobenzene	**CAS** 108-90-7
C_6H_5Cl	**RTECS** CZ0175000
Synonyms & Trade Names Benzene chloride, Chlorobenzol, MCB, Monochlorobenzene, Phenyl chloride	**DOT ID & Guide** 1134 130

Exposure Limits	NIOSH REL: See Appendix D
	OSHA PEL: TWA 75 ppm (350 mg/m^3)

IDLH 1000 ppm See: 108907	**Conversion** 1 ppm = 4.61 mg/m^3

Physical Description
Colorless liquid with an almond-like odor.

MW: 112.6	BP: 270°F	FRZ: -50°F	Sol: 0.05%
VP: 9 mmHg	IP: 9.07 eV		Sp.Gr: 1.11
Fl.P: 82°F	UEL: 9.6%	LEL: 1.3%	

Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.

Incompatibilities & Reactivities
Strong oxidizers

Measurement Method
Charcoal tube; CS_2; Gas chromatography/Flame ionization detection; IV [#1003, Halogenated Hydrocarbons] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: N.R.	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Respirator Recommendations OSHA
Up to 1000 ppm: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode[£]/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)[£]/(APF = 50) Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s)/(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, nose; drowsiness, incoordination; central nervous system depressant/depression; in animals: liver, lung, kidney injury

NIOSH Pocket Guide to Chemical Hazards

Chromium(II) compounds (as Cr)	CAS
	RTECS
Synonyms & Trade Names Synonyms vary depending upon the specific Chromium(II) compound. [Note: Chromium(II) compounds include soluble chromous salts.]	DOT ID & Guide

Exposure Limits	
	NIOSH REL: TWA 0.5 mg/m^3 See Appendix C
	OSHA PEL: TWA 0.5 mg/m^3 See Appendix C
IDLH 250 mg/m^3 [as Cr(II)] See: IDLH INDEX	**Conversion**

Physical Description
Appearance and odor vary depending upon the specific compound.

Properties vary depending upon the specific compound.			

Incompatibilities & Reactivities
Varies

Measurement Method
Filter; Acid; Flame atomic absorption spectrometry; IV [#7024, Chromium] See: NMAM INDEX

Personal Protection & Sanitation	First Aid (See procedures)
Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet or contaminated Change: N.R.	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Respiratory Recommendations NIOSH/OSHA

Up to 2.5 mg/m^3: (APF = 5) Any dust and mist respirator*

Up to 5 mg/m^3: (APF = 10) Any dust and mist respirator except single-use and quarter-mask respirators*/(APF = 10) Any supplied-air respirator*

Up to 12.5 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode*/(APF = 25) Any powered, air-purifying respirator with a dust and mist filter*

Up to 25 mg/m^3: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter*/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece

Up to 250 mg/m^3: (APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination

Chromium Page 2

with an auxiliary self-contained positive-pressure breathing apparatus Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus
Exposure Routes inhalation, ingestion, skin and/or eye contact
Symptoms irritation eyes; sensitization dermatitis
Target Organs Eyes, skin
See also: INTRODUCTION

NIOSH Pocket Guide to Chemical Hazards

Coal tar pitch volatiles

CAS 65996-93-2

RTECS GF8655000

Synonyms & Trade Names
Synonyms vary depending upon the specific compound (e.g., pyrene, phenanthrene, acridine, chrysene, anthracene & benzo(a)pyrene). [Note: NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products.]

DOT ID & Guide

Exposure Limits

NIOSH REL: Ca TWA 0.1 mg/m^3 (cyclohexane-extractable fraction) See Appendix A See Appendix C

OSHA PEL: TWA 0.2 mg/m^3 (benzene-soluble fraction) [1910.1002] See Appendix C

IDLH Ca [80 mg/m^3] See: 65996932

Conversion

Physical Description
Black or dark-brown amorphous residue.

Properties vary depending upon the specific compound.			

Combustible Solids

Incompatibilities & Reactivities
Strong oxidizers

Measurement Method
Filter; Benzene; Gravimetric; OSHA [#58] See: NMAM INDEX

Personal Protection & Sanitation
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: N.R.
Change: Daily

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin and/or eye contact

Symptoms dermatitis, bronchitis, [Potential occupational carcinogen]

Target Organs respiratory system, skin, bladder, kidneys

Cancer Site [lung, kidney & skin cancer]

See also: INTRODUCTION See MEDICAL TESTS: 0054

NIOSH Pocket Guide to Chemical Hazards

Copper (dusts and mists, as Cu)	**CAS** 7440-50-8
Cu	**RTECS** GL5325000
Synonyms & Trade Names Copper metal dusts, Copper metal fumes	**DOT ID & Guide**

Exposure Limits	NIOSH REL*: TWA 1 mg/m^3 [*Note: The REL also applies to other copper compounds (as Cu) except Copper fume.]
	OSHA PEL*: TWA 1 mg/m^3 [*Note: The PEL also applies to other copper compounds (as Cu) except copper fume.]

IDLH 100 mg/m^3 (as Cu) See: 7440508	**Conversion**

Physical Description
Reddish, lustrous, malleable, odorless solid.

MW: 63.5	BP: 4703°F	MLT: 1981°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 8.94
Fl.P: NA	UEL: NA	LEL: NA	

Noncombustible Solid in bulk form, but powdered form may ignite.

Incompatibilities & Reactivities
Oxidizers, alkalis, sodium azide, acetylene

Measurement Method
Filter; Acid; Flame atomic absorption spectrometry; IV [#7029] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet or contaminated Change: Daily	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Respirator Recommendations NIOSH/OSHA

Up to 5 mg/m^3: (APF = 5) Any dust and mist respirator*

Up to 10 mg/m^3: (APF = 10) Any dust and mist respirator except single-use and quarter-mask respirators*^/(APF = 10) Any supplied-air respirator*

Up to 25 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode*/(APF = 25) Any powered, air-purifying respirator with a dust and mist filter*

Up to 50 mg/m^3: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter*/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece

Up to 100 mg/m^3: (APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination

Copper Page 2

with an auxiliary self-contained positive-pressure breathing apparatus Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus
Exposure Routes inhalation, ingestion, skin and/or eye contact
Symptoms irritation eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis; in animals: lung, liver, kidney damage; anemia
Target Organs Eyes, skin, respiratory system, liver, kidneys (increase(d) risk with Wilson's disease)
See also: INTRODUCTION See ICSC CARD: 0240 See MEDICAL TESTS: 0057

NIOSH Pocket Guide to Chemical Hazards

Naphthalene	**CAS** 91-20-3
$C_{10}H_8$	**RTECS** QJ0525000
Synonyms & Trade Names Naphthalin, Tar camphor, White tar	**DOT ID & Guide** 1334 133 (crude or refined) 2304 133 (molten)

Exposure Limits	NIOSH REL: TWA 10 ppm (50 mg/m^3) ST 15 ppm (75 mg/m^3)
	OSHA PEL†: TWA 10 ppm (50 mg/m^3)
IDLH 250 ppm See: 91203	**Conversion** 1 ppm = 5.24 mg/m^3

Physical Description
Colorless to brown solid with an odor of mothballs. [Note: Shipped as a molten solid.]

MW: 128.2	BP: 424°F	MLT: 176°F	Sol: 0.003%
VP: 0.08 mmHg	IP: 8.12 eV		Sp.Gr: 1.15
Fl.P: 174°F	UEL: 5.9%	LEL: 0.9%	

Combustible Solid, but will take some effort to ignite.

Incompatibilities & Reactivities
Strong oxidizers, chromic anhydride

Measurement Method
Charcoal tube; CS_2; Gas chromatography/Flame ionization detection; IV [#1501, Aromatic Hydrocarbons] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet or contaminated Change: Daily	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Molten flush immediately/solid-liquid soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Respirator Recommendations NIOSH/OSHA
Up to 100 ppm: (APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s) in combination with a dust and mist filter*/(APF = 10) Any supplied-air respirator*
Up to 250 ppm: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode*/(APF = 50) Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s) in combination with a high-efficiency particulate filter/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s) in combination with a dust and mist filter*/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having a high-efficiency particulate filter/Any appropriate

escape-type, self-contained breathing apparatus
Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact
Symptoms irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), hemoglobinuria, renal shutdown; dermatitis, optical neuritis, corneal damage
Target Organs Eyes, skin, blood, liver, kidneys, central nervous system
See also: INTRODUCTION See MEDICAL TESTS: 0152

NIOSH Pocket Guide to Chemical Hazards

Nickel metal and other compounds (as Ni)	**CAS** 7440-02-0 (Metal)
Ni (Metal)	**RTECS** QR5950000 (Metal)
Synonyms & Trade Names Nickel metal: Elemental nickel, Nickel catalyst Synonyms of other nickel compounds vary depending upon the specific compound.	**DOT ID & Guide**

Exposure Limits	NIOSH REL*: Ca TWA 0.015 mg/m^3 See Appendix A [*Note: The REL does not apply to Nickel carbonyl.]
	OSHA PEL*†: TWA 1 mg/m^3 [*Note: The PEL does not apply to Nickel carbonyl.]

IDLH Ca [10 mg/m^3 (as Ni)] See: IDLH INDEX	**Conversion**

Physical Description
Metal: Lustrous, silvery, odorless solid.

MW: 58.7	BP: 5139°F	MLT: 2831°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 8.90 (Metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Combustible Solid; nickel sponge catalyst may ignite SPONTANEOUSLY in air.

Incompatibilities & Reactivities
Strong acids, sulfur, selenium, wood & other combustibles, nickel nitrate

Measurement Method
Filter; Acid; Inductively coupled plasma; IV [#7300, Elements] See: NMAM INDEX

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: N.R. Wash skin: When contaminated/Daily Remove: When wet or contaminated Change: Daily	**First Aid** (See procedures) Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms sensitization dermatitis, allergic asthma, pneumonitis; [Potential occupational carcinogen]

Target Organs Nasal cavities, lungs, skin

Cancer Site [lung and nasal cancer]

See also: INTRODUCTION

ATTACHMENT HASP 3
PERSONAL PROTECTIVE EQUIPMENT LEVELS

ATTACHMENT HASP 3

PERSONAL PROTECTIVE EQUIPMENT LEVELS

LEVEL D Includes:

1. Boots/shoes, chemical-resistant steel toe and shank.
2. Boots, outer, chemical-resistant (disposable).*
3. Safety glasses or chemical splash goggles.
4. Coveralls.*
5. Hard hat.
6. Escape mask.*
7. Face Shield.*

LEVEL C Includes:

1. All of Level D equipment.
2. Full-face or half-mask, air purifying respirators (NIOSH approved).
3. Hooded chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical-resistant overalls).
4. Gloves, outer, chemical-resistant.
5. Gloves, inner, chemical-resistant.

LEVEL B Includes:

1. Positive pressure, full-facepiece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (NIOSH approved).
2. Hooded chemical-resistant clothing (overalls and long-sleeved jacket; coveralls; one or two-piece chemical-splash suit; disposable chemical-resistant overalls).
3. Coveralls. *
4. Gloves, outer, chemical-resistant.
5. Gloves, inner, chemical-resistant.
6. Boots, outer, chemical-resistant, steel toe and shank.
7. Boot-covers, outer, chemical resistant (disposable).*
8. Hard hat.
9. Face shield.*

LEVEL A Includes:

1. All of level B equipment.
2. Totally encapsulating chemical-protective suit.
3. Long underwear.*

* optional equipment (Project Managers decision).

ATTACHMENT HASP 4

DECONTAMINATION PROCEDURES

ATTACHMENT 4

DECONTAMINATION PROCEDURES

A. NON-AQUEOUS SAMPLING EQUIPMENT[1]

1. Detergent and tap water - scrub to remove visual contamination.
2. Generous tap water rinse.
3. Distilled and deionized water rinse.

B. AQUEOUS SAMPLING EQUIPMENT

1. Detergent and tap water wash.
2. Generous tap water rinse.
3. Distilled and deionized water rinse.
4. 10% nitric acid rinse[2].
5. Distilled and deionized water rinse[1].
6. Acetone rinse[3].
7. Total air dry or nitrogen blow out[3].
8. Distilled and deionized water rinse[2].

[1] – If visual contamination persists or gross contamination is suspected, the full 8 step decontamination procedure in Item B is required.

[2] - Only if sample is to be analyzed for metals.

[3] - Only if sample is to be analyzed for organics.

HEALTH AND SAFETY PLAN
SIGNOFF SHEET

SITE NAME/PROJECT NUMBER: Dexter Chemical/97-09-10

LOCATION: 845 Edgewater Avenue, Bronx, New York

WHITMAN FIELD SUPERVISOR: _____

I have read, understood, and agreed to comply with the provisions of the above referenced job site Health and Safety Plan for work activities on this site.

Name (Print)	Signature	Date

This HASP was prepared by: Cheryl L. Coffee