

COMPUTER CIRCUITS

152034

02/01/06



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**CASTLE
FINANCIAL ADVISORS**

Build & Fortify Your Financial Castle

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Engineering Solutions

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FINAL

Remedial Investigation Report

FORMER COMPUTER CIRCUITS SUPERFUND SITE

145 Marcus Boulevard
Hauppauge
Suffolk County, New York

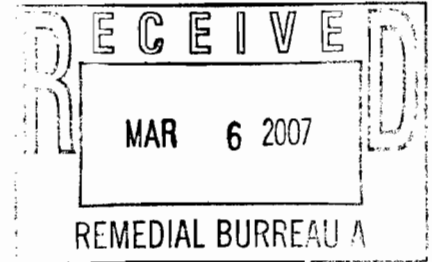
VOLUME 3 of 4



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February 9, 2007

P.W. GROSSER CONSULTING INC.
PROJECT No. TED0001



FINAL
REMEDIAL INVESTIGATION
REPORT
FORMER COMPUTER CIRCUITS SUPERFUND SITE

145 Marcus Boulevard
HAUPPAUGE, NEW YORK

FEBRUARY 9, 2007

VOLUME 3 of 4
APPENDIX I through Q (minus N)

Kris Almskog
Project Manager
P.W. Grosser Consulting, Inc.

James P. Rhodes, C.P.G.
Vice President
P.W. Grosser Consulting, Inc.

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Note: Appendix N - Laboratory Data Summary Sheets (Form 1) located in Volume 4

Appendix I

Chemical Inventory Disposal - Waste Manifests

PRIVATE
NON-HAZARDOUS
DOCUMENT OF CARGO

N.Y. State 364 Permit No. 1A-033

RGM ID # _____

Truck License Number _____

IDENTIFICATION

Company name, mailing address and telephone number

Generator:

Computer Ckts - 145 Marcus Blvd. Hempstead NY 11788

Transporter:

Rgm Earthcare 972 Nichols Rd Deer Park NY 11729 631-586-0002TSDf Treatment
Storage or Dis-
posal Facility:Rgm Earthcare 972 Nichols Rd Deer Park NY 11729 631-586-0002

WASTE INFORMATION

Description	Containers No. Type	Total Quantity	Unit Wt/Vol	RGM Code #
Storm Drain Material	1 d/o	4 yds	yds	

I hereby certify that the above waste description is complete and accurate, and that no component exist in the wastes which render it hazardous as defined by 6 NY CRR Section 371 and 372.

Generator's Signature_____
Date_____
Transporter's Signature_____
Date_____
TSDf Signature_____
Date

NYH0244161

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS



HAZARDOUS WASTE MANIFEST
P.O. Box 12820, Albany, New York 12212

Use type or print. Do not staple.

(Rev. 3/97)

NY State Department of Environmental Conservation (518) 457-7362

In case of spill or leak immediately call the National Response Center (800) 424-8802 or

In case of fire

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. NYR00010561944161		Manifest Doc. No.		2. Page 1 of 1		Information within heavy bold line is not required by Federal Law.							
3. Generator's Name and Mailing Address 145 MARCUS BLVD. CORP. 145 MARCUS BLVD. HAUPPAUGE, NEW YORK 11788						A. NYH0244161									
4. Generator's Telephone Number 631 325-2700						B. Generator's ID									
5. Transporter 1 (Company Name) CHEMICAL POLLUTION CONTROL						C. State Transporter's ID 231781A									
6. US EPA ID Number NYD082785429						D. Transporter's Telephone 631 586-0333									
7. Transporter 2 (Company Name)						E. State Transporter's ID									
8. US EPA ID Number						F. Transporter's Telephone									
9. Designated Facility Name and Site Address CHEMICAL POLLUTION CONTROL 120 SOUTH FOURTH STREET BAY SHORE, NEW YORK 11706						G. State Facility ID									
10. US EPA ID Number NYD082785429						H. Facility Telephone 631 586-0333									
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)						12. Containers Number Type		13. Total Quantity		14. Unit Wt/Vol		I. Waste No.			
a. WASTE AEROSOL, FLAMMABLE 2.1, UN1950, PG N/A						001 DM00010 P						EPA STATE D001			
b. WASTE TOXIC LIQUID, ORGANIC, NOS 6.1, UN2810, PGII						001 DM00025 S						EPA STATE U228			
c. WASTE PAINT RELATED MATERIAL 3, UN1263, PGIII						003 DM00075 S						EPA STATE D001			
d.												EPA STATE			
J. Additional Descriptions for Materials listed Above						K. Handling Codes for Wastes Listed Above									
a. 4/P						a. T									
b. 4/P						b. B									
c.						c.									
d.						d.									
15. Special Handling Instructions and Additional Information 11A) 11B) U210 11C) D035						EMERGENCY CONTACT 1-800-424-9300									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.															
Printed/Typed Name John J. O'Neil						Signature <i>[Signature]</i>						Mo. Day Year 01 12 02			
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name TH Smith						Signature <i>[Signature]</i>		Mo. Day Year 01 12 02	
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name						Signature		Mo. Day Year	
19. Discrepancy Indication Space															
20. Facility Owner or Operator: Certification of Receipt of hazardous materials covered by this manifest except as noted in Item 19.															
Printed/Typed Name						Signature						Mo. Day Year			

NYH 0284625

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS



HAZARDOUS WASTE MANIFEST
P.O. Box 12820, Albany, New York 12212

use type or print. Do not staple.

(Rev. 3/97)

NY Department of Environmental Conservation (518) 457-7362
In case of a spill or spill immediately call the National Response Center (800) 424-8802 or (518) 457-7362

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA No. NYR000105619		Manifest Doc. No. 54625		2. Page 1 of 1		Information within heavy bold line is not required by Federal Law.									
3. Generator's Name and Mailing Address 145 MARCUS BLVD. HAUPPAUGE NY 11788						A. NYH0284625											
4. Generator's Telephone Number 631 325-2700						B. Generator's ID SAME											
5. Transporter 1 (Company Name) CHEMICAL POLLUTION CONTROL INC						C. State Transporter's ID 231357A											
6. US EPA ID Number NYR0082785429						D. Transporter's Telephone () 631 586-0333											
7. Transporter 2 (Company Name)						E. State Transporter's ID											
8. US EPA ID Number						F. Transporter's Telephone ()											
9. Designated Facility Name and Site Address CHEMICAL POLLUTION CONTROL 120 SOUTH FOURTH ST. BAYSHORE NY 11706						G. State Facility ID											
10. US EPA ID Number NYR0082785429						H. Facility Telephone () 631 586-0333											
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number) RG WASTE ISOPROPYL ALCOHOL, 3, UN1219, PG II, (D001)						12. Containers Number Type		13. Total Quantity		14. Unit Wt/Vol		I. Waste No.					
						001 DF		00.6.15		G		EPA D001 STATE					
b. RG WASTE TOXIC, LIQUIDS, ORGANIC, N.O.S., 6.1, UN2810, PG III, (D1.1.1)-TRICHLOROETHANE						001 DF		000.5		H		EPA U226 STATE					
c. RG HAZARDOUS WASTE, LIQUID, N.O.S., 9, NA3082, PG III, (D008)						001 DF		000.5		H		EPA D008 STATE					
d.												EPA STATE					
J. Additional Descriptions for Materials listed Above						K. Handling Codes for Wastes Listed Above											
a. L 508148						c. L 508149		a. B		c. B							
b. L 508150						d.		b. B		d.							
15. Special Handling Instructions and Additional Information U210, U228						EMERGENCY PHONE											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.																	
Printed/Typed Name M. F. A. Agent for Generator						Signature [Signature]				Mo. Day Year 05 16 97							
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name [Signature]				Signature [Signature]				Mo. Day Year 05 16 97			
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name				Signature				Mo. Day Year			
19. Discrepancy Indication Space																	
20. Facility Owner or Operator: Certification of Receipt of hazardous materials covered by this manifest except as noted in Item 19.																	
Printed/Typed Name						Signature				Mo. Day Year							

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

N/A

Manifest Doc. No.

—

2. Page 1
of 1

3. Generator's Name and Mailing Address

145 Marcus Blvd Corp
145 Marcus Blvd
Hempstead NY

4. Generator's Phone ()

5. Transporter 1 Company Name

Terrace Transportation N/A

6. US EPA ID Number

N/A

A. Transporter's Phone

718-981-4600

7. Transporter 2 Company Name

8. US EPA ID Number

N/A

B. Transporter's Phone

9. Designated Facility Name and Site Address

Clean Water of NY
3849 Richmond TR
SI, NY

10. US EPA ID Number

N/A

C. Facility's Phone

718-981-4600

11. Waste Shipping Name and Description

a. NON-RCRA, NON-DOT used oil

12. Containers

No. Type

13. Total
Quantity

14. Unit
Wt/Vol

XXI DM 5.5 G

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Customer: Eastern Env. Sols.

Emergency response # 718-981-4600 ext 10

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

M. Flynn

Signature

[Signature]

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Thomas King

Signature

[Signature]

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

[Signature]

Signature

[Signature]

Month Day Year

05/24/02

TRANSPORTER #1

Former Computer Circuits Site
Waste Disposal Inventory

		Qty	Contents	Size	Container Type
Drum # 2	55 gallons	1	Waste TCE w/ solder slag	5 gal	metal
		1	PCE	1 pint	plastic
		1	PCE	5 gal	metal
		1	Waste PCE	1/2 pint	plastic
		2	Waste TCE w/ solder slag	1 pint	glass
		1	TCE	1 gal	metal
		3	Mixed chlorinated solvents PCE/TCE/TCA	2 oz	glass
		1	Carbon Tetrachloride	6 oz	glass
Drum # 3A	55 gallons	1	Oil Based Paint	5 gal	plastic
		1	Floor Adhesive	5 gal	plastic
		3	Fiberglass Resin	1 gal	metal
		10	Oil Based Paint	1 quart	metal
		3	Oil Based Paint	1 gal	metal
		2	adhesive glue	1/2 pint	metal
Drum# 3B	55 gallons	2	Oil Based Paint	5 gal	metal
		2	Paint Thinner	1 gal	metal
		3	Paint Thinner	1 quart	metal
		8	Resin compound	1 quart	metal
		1	Laquer Thinner	1 pint	metal
		6	Circuit board coating resin	1 gal	metal
Drum# 3C	55 gallons	10	Oil Based Paint	1 gal	metal
		2	Circuit board coating clearcoat	1 gal	metal
		6	Circuit board coating clearcoat	1 quart	plastic
		2	Thinner	1 pint	metal
		2	Circuit board repair resin	1 gal	metal
Drum# 4	55 gallons	10	Aresol anti-static coating spary	large	metal
		4	Spray Paint	small	metal
		1	Brake Cleaner	small	metal

Appendix J

Indoor Ambient Air Sampling Plan

P. W. GROSSER

CONSULTING, INC



P. W. GROSSER

CONSULTING

ENGINEER &

HYDROGEOLOGIST, P.C. NYSDOH - Bureau of Environmental Exposure
547 River Street, Room 300
Troy, New York 12180-2216

June 20, 2002

630

JOHNSON

AVENUE

SUITE 7

BOHEMIA

NEW YORK

11716-2618

PHONE:

589-6353

FAX:

631-589-8705

VISIT US AT:

www.pwgrosser.com

**Re: Ambient Air Sampling Plan
Former Computer Circuits Site
Hauppauge, New York**

Dear Ms. Kuehner:

Attached please find the Indoor Ambient Air Sampling Plan prepared by PWGC for the Computer Circuits site and submitted for your review. As you know the building's most recent tenant, APACE, Inc., essentially vacated the premises in March, 2002 and the building remains unoccupied at the present.

Efforts to inventory and remove products containing VOCs, which were left behind by APACE, were largely completed on April 23-24, 2002. Common "household" items, which do not require special disposal arrangements, were placed in plastic bags and are still present in the loading dock area. It is anticipated that these items will be removed shortly.

We would like to complete the air sampling as soon as possible, while the building is still vacant, to simplify the collection procedure and avoid potential obstacles.

Mr. Mark Dannenburg of the USEPA has indicated that addressing NYSDOH comments on the proposed plan will be the primary influence in receiving approval to initiate the work.

If there are any questions or comments, please contact me at my office at (631) 589-6353.

Very truly yours,

Charles B. Sosik, P.G.
Project Manager

Cc: M. Dannenburg, EPA
H. Bishop, DEC



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1990

**Former Computer Circuits
145 Marcus Blvd., Hauppauge, NY**

Indoor Air Sampling Procedure

Indoor ambient air sampling will be in accordance with the procedures described in USEPA SOP # 2008 General Air Sampling Guidelines, and the NYSDOH "Indoor Air Sampling & Analysis Protocol". A general outline of the air sampling procedures which are specifically adapted to the former Computer Circuits property is presented below.

Chemical Inventory

The most recent tenant to occupy the building was Algorex Power and Control Electronics (APACE). APACE was an electronics manufacturing and design company which manufactured a line of power and motion control modules for fielded weapons systems and the International Space Station. In an attempt to diversify it's client base, APACE began developing advanced Energy Storage Systems (ESS) for the heavy vehicle market. The company went bankrupt and vacated the premises in March 2002, leaving behind a considerable amount of equipment and supplies.

A chemical inventory of the building contents performed on April 23, 2002, included the following items:

• Waste TCE w/solder slag	• Circuit board coating resin
• Waste PCE	• Circuit board repairing resin
• PCE (virgin)	• Fiberglass resin
• TCE (virgin)	• Floor adhesive
• Carbon tetrachloride	• Circuit board clear coating
• Oil Based paint	• Spray paint
• Paint thinner	• Brake cleaner
• Laquer thinner	• Isopropanol

These materials were packed into disposal containers on April 23 and 24, 2002 and removed from the premises on May 20, 2002. Common "household" type materials not requiring special disposal arrangements were placed in plastic trash bags on April 23 and 24, 2002 and are being currently stored within the loading dock area. This material is to be placed in the on-site trash receptacle as soon as this service is restored to the site.

Ventilation

To remove residual vapors associated with the chemical inventory, the building will be ventilated prior to collecting the indoor ambient air samples. Ventilation will be accomplished by opening the five exterior doors, loading dock bay door and office windows, and operating the building's climate control system for a minimum of two hours. All exterior doors and windows will then be closed and the climate control system turned off a minimum of 24 hours prior to sample collection.

To simulate normal working conditions within the building, all office, storage room and assembly room doors will remain open and all equipment room doors will be closed immediately following the ventilation procedure and during the sampling event. The climate control system will be turned on the morning of the scheduled sampling event, and remain at a setting of 70 degrees, to simulate normal occupancy conditions, during sampling.

To prevent interference from vapors associated with the degreaser room and the furnace room, the doors to these rooms will be closed and sealed with duct tape during sample collection. See **Figure 1** for details on the interior floor plan of the building.

Sample Collection and Analysis

Ambient air samples will be collected from three locations within the building and one location outside of the building. The primary interior locations include AS1; the storage room located in the north side of the building where elevated TCE concentrations were detected in both the soil beneath the slab (SB15) and in soil gas samples collected along the exterior wall (DEC, 1996), and AS2; the store room north of PWGC's field lab which is also adjacent to an area of elevated soil gas detections (DEC, 1996). To check for potential interferences in the interior samples, a third interior location, AS3, located within the southwest "office area" of the building, will be sampled. A single exterior location (AS4) situated "upwind" of the building will be sampled to provide information on background air quality.

Collected samples will be analyzed by H2M laboratories in Melville, NY, using a modified USEPA Method TO1/TO2. H2M is a NYSDOH certified analytical laboratory approved by the USEPA for off-site analytical services at the former Computer Circuits site. Sorbent tube preparation, sample collection and analysis will be in accordance with H2M's SOP 3.1.3 *Air and Gas* provided as Attachment A.

ATTACHMENT A
H2M Laboratories
SOP 3.1.3 Air and Gas

STANDARD OPERATING PROCEDURES MANUAL

SECTION 3.1.3. AIR AND GAS

3.1.3 AIR AND GAS SORBENT TUBE PROCEDURES

There are two basic methods to collect gaseous samples for volatile analysis. The gas itself can be brought to the laboratory in glass sampling bulbs, tedlar bags, burrets, or stainless steel summa canisters, or passed through a tube with adsorbent at the site for collection of the contaminants.

In the ~~The~~ "whole air" ^{procedure the} sample is not brought to the laboratory, but only the contaminants are collected by passing known volumes through tubes filled with adsorbent. In the laboratory the tubes are then either leached with solvent or heat desorbed for analysis.

Solvent leaching is used for NIOSH methods (Reference #19) and Method 310-11 by the New York State Department of Health (Reference #20). Even though volumes of several liters are sampled, the methods involving solvent leaching are not suitable for trace analysis. The sensitivity is lost, because only an aliquot (e.g. 20ul or less) of at least one ml of total leachate is injected into the GC. These methods are generally employed when high levels of contaminants are encountered, or for prescreening.

The method of choice for low level work is collection on a sorbent, followed by heat desorption in the laboratory, to release the compounds into the instrument. Depending on the source of the air or gas, two different types of sorbent tube analyses by heat desorption can be performed: sorbent tube analysis for ambient or indoor air or vort tube analysis.

3.1.3.1 SORBENT TUBES FOR AMBIENT/INDOOR AIR

Straight sorbent tubes of 1/4-inch diameter and length of eight inches are used for collection of ambient air or indoor air. The procedure for ambient air analysis is based on the EPA Methods TO-1 and TO-2 (Reference #21). H2M has further developed this method, incorporating information obtained from in-house experience. The drawback of Methods TO-1 and TO-2 is that two independent samples have to be obtained, with one analyzed for highly volatile and the other for higher molecular weight compounds. In our procedure both scans have been combined into one analysis by introduction of several layers of packing material into the sorbent tubes. Light as well as heavier compounds are both efficiently trapped and desorbed. The composition of the sorbent tubes follows recommendations by Envirochem. Efficiency of trapping and desorption were verified during method development.

The CLP protocol by EPA for ambient air analysis (Reference #24) offers ~~multiple~~ sorbent tubes as an alternative option. The same tubes are also utilized for indoor air analysis by EPA Method 1P-1B (Reference #16).

3.1.3.1.1 SORBENT TUBE ANALYSIS WITH HEAT DESORPTION

The procedure was designed for the analysis of low levels of volatile organics. It has been applied for the compounds targeted in the Purge and Trap Method 624, and the additional compounds listed in the Targeted Compound List (TCL) of the CLP, as well as the 58 volatile compounds, targeted in the EPA Superfund Method (Reference #24). The application could be expanded to comprise other analytes (e.g. petroleum hydrocarbons with a chain length larger than propane. (Methane and ethane are not analyzable with this method.) Suitability for other compounds of interest has to be established, if requested.

This procedure is applicable for the determination of the volatile organics in raw landfill gas, process gas as well as ambient air. It is designed to meet the monitoring requirements of gas producing industries, the Gas Research Institute, and state and federal regulatory agencies.

Sorbent tube collection with heat desorption covers the broadest range of concentrations. For a sample volume of one liter this method is capable of detecting the same concentration levels as the Summa Canister Method, of one part billions. If lower quantification limits are required, larger volumes are collected. On the other hand, if high levels are to be analyzed, or unknown samples have to be prescreened for the concentration level, the volume collected has to be scaled down appropriately, in order not to overload the analytical system. However, this would sacrifice sensitivity at the same time.

3.1.3.1.1 SORBENT TUBE SAMPLINGMaterial and Equipment:

- Field sampling unit - capable of maintaining a consistent flow rate, needed to collect the desired flow volume over a reasonable collection time. The unit is to consist of portable pump, power supply, fine metering valves, dual range flow meter.
- Sample trap - 1/4" OD x 8" glass tubes packed with glass beads, Tenax-TA, Ambersorb XE-340, and activated charcoal.
- Trap storage container with carbon bed and trap holders.
- Container that can be environmentally controlled, if temperature rises above 80°F.
- Miscellaneous tools and Swagelok fittings. Connector for sorbent tube to sampling port.
- Field data forms.

Sampling Procedure: For inlet gas, ambient air and surface gas, a sampling train, including a pump, is needed. Product gas is under positive pressure and no pump is required for sampling, but the gas flow has to be controlled by a regulator.

Flow adjustment: The pressure on the sampling ports vary,

and the settings on the valves have to be adjusted for each sample port to achieve the desired flow rate. A dummy tube of equal back pressure is used for this purpose prior to sampling.

Sample Collection: After the correct flow rate has been established, the sample tube is connected and the gas (or air) passed through the sorbent for the duration necessary to collect the desired flow volume. The flow has to be monitored on the flow meter during sampling and maintained throughout the sampling time.

Data Logging: All data pertaining to the sampling site and the parameters for the individual sample have to be recorded on field data forms. The sorbent tubes are clearly labeled with numbers, which have to be referenced in the records on the data forms.

3.1.3.1.2 STORAGE PRESERVATION AND HANDLING

The chain of custody (COC) should be as streamlined as possible. All traps and sampling devices should be subject to similar handling and storage conditions. COC from sample trap preparation through analysis and recycling must be established and strictly enforced. Storage of sorbent traps should be in a contamination-free area at or below 4 °C. At temperatures exceeding 25 °C during sampling and shipping, the sample containers have to be stored in a cooler.

3.1.3.1.3 SUMMARY OF SAMPLE ANALYSIS

The samples are analyzed by GC/MS on widebore capillary column. The instrument is calibrated by internal standard method. Internal standards, and as required surrogate standards, are automatically added to all sample tubes by the Walsh-O-Matic connected to the Environchem autosampler. The autosampler then heat desorbs the sample tubes, and the released compounds are carried with an inert gas onto the analytical trap of a Tekmar concentrator. From there, they are transferred to the GC/MS system. Analysis occurs on a quadropole MS (HP5996), and data are reduced on a HP data system.

Modifications:

(1) If samples exhibit very high moisture contents that could generate problems in the cryotrap, e.g. if waterdrops are noticeable in the tubes, the gas stream carrying the desorbed sample from the autosampler to the concentrator can be led through a vial containing 2 ml of water, to achieve condensation of excess water. This is only necessary in extreme cases. Minor amounts of water are effectively removed in the moisture control module of the Tekmar concentrator.

(2) Instead of utilizing the autosampler, samples can be mounted singly directly in a special heater accessory of the Tekmar concentrator. In this mode of operation the sample is desorbed directly onto the GC/MS inlet system. In this manual

operation the tube is still spiked with surrogate and internal standard(s) in the Walsh-O-Matic, before they are mounted on the concentrator heater assembly.

3.1.3.1.4 CALIBRATION

The following operations will be performed routinely: Documentation of mass calibration and abundance pattern, documentation of GC/MS RF stability of response factors (RF) against internal standards, and internal standard response and retention time monitoring.

It is important that the initial calibration is performed with the same instrument parameters as the samples are analyzed. This applies to settings for the GC and MS as well as thermal desorption parameters.

Tuning and Mass Calibration: Prior to initiating data collection, it is necessary to establish that the instrument meets the standard mass spectral abundance criteria. The instrument is hardware tuned with calibration gas (PFTBA) and then the mass calibration is checked by analysis of 50 ng bromofluorobenzene (BFB). BFB must be analyzed every 12 hour period and USEPA abundance criteria must be met.

BFB MASS ABUNDANCE CRITERIA

<u>Mass</u>	<u>m/z Abundance Criteria</u>
50	15 to 40% of mass 95
75	30 to 66% of mass 95
95	Base peak, 100% relative abundance
96	5 to 9% of mass 95
173	<2% of mass 174
174	greater than 50% of mass 95
175	5 to 9% of mass 174
176	95 to 101% of mass 174
177	5 to 9% of mass 176

The results are supplied in the form of a bar graph and mass abundance listing. Results of the BFB analyses have to be filed by the analyst.

Initial Calibration: Prior to the analysis of samples and after tuning criteria have been met, the GC/MS system must be initially calibrated at a minimum of three (five for CLP) concentrations to determine the response curve for all targeted compounds and surrogate standards. Average response factors are computed for the linear range. Typically levels between five and 1000 ng are analyzed.

Five ng correspond to about 1/2 to 2 ppb(v), depending on the molecular weight of the compound. For low level work, calibration down to 2ng (<1ppb) can be performed.

Working calibration curves are used, or average RFs can be employed, if the response is constant over the working range.

For that, the RSD has to be under 35 percent (25 percent for CLP).

The internal standard method of analysis is used. For routine ambient and indoor air samples all tubes are spiked with 1,4-difluorobenzene as reference. For CLP protocol the internal standards used are bromochloromethane, 1,4-difluorobenzene and chlorobenzene-d₅. The area response of the characteristic m/z against the concentration for each compound and internal standard is tabulated and RF for each compound is calculated using the following equation:

$$RF = \frac{(As) (CIS)}{(AIS) (CS)}$$

Where: AS = Area of characteristics m/z for the analyte
AIS = Area of the characteristics m/z for the internal standard
CIS = Concentration of internal standard
CS = Concentration of the internal standard parameter to be measured

Continuing Calibration: A calibration standard, containing all targeted priority volatile compounds as well as surrogates (if used) and internal standards, is analyzed each day. This check is used to verify the RF derived from the initial calibration. Acceptance criterion, according to the CLP protocol, is 25 percent difference. If all responses are within the acceptable range, the analysis can begin. If certain analytes do not meet, those analytes must be re-analyzed. If upon re-analysis the criteria are still not met, a new calibration curve must be prepared.

Preparation of Standard Tubes for Calibration

Introduction by Flash Evaporation Unit: The unit consists of an empty tube with heater jacket, equipped with a septum injection port and connection to helium supply. The clean sorbent tube, to be spiked (with calibration standard), is attached with a union to the outlet of the evaporation tube. Microliter volumes of the methanol standard solution are then injected, evaporated and carried with the helium stream onto the sorbent tube. The flow of helium of approximately 40 ml should be maintained for about one min., to assure quantitative transfer of the compounds onto the calibration tube.

A drawback of the methanol spiking is quenching of the responses for the early eluting analytes. If early compounds (gases) are targeted, the response factors of the purge and trap introduction procedure have to be used. Ideally gas standards should be used. The flash evaporation unit can also be utilized for the introduction of milliliter quantities of gas standards onto the calibration tubes. Gas standards can be obtained in cylinders commercially, by utilizing permeation

tubes, or preparing the standards from the neat compound. For this purpose microliter quantities of the neat volatile compound are injected into a known volume of clean air or inert gas in a gas sampling bulb with septum. Note that these gas standards in bulbs cannot be held longer than 24 hours and that dilution occurs, once a certain amount of milliliters are withdrawn.

Introduction by Purge and Trap Procedure: The calibration sorbent tube is connected at the outlet of a sampling vessel of a Tekmar ALS16. Methanol solutions containing the compounds are spiked into two ml water, which is loaded with a syringe through a Hamilton valve into a purge and trap sampling vessel. "Load" an additional 1/2 ml of water or air through the valve to quantitatively introduce the 2ml solution. Alternatively gas standards (ml quantities) are added to the sampling vessel through the same valve, as needed.

Purging the two ml water for 11 minutes at 40 ml/minute transfers the compounds from the sparge vessel to the sorbents of the tube without causing breakthrough. If chloromethane or bromomethane are analyzed, the purge gas volume cannot exceed 500 ml. Some lowered response for the polar, heavy and brominated compounds are observed for this mode of introduction due to poor purge efficiency. For heavy and polar compounds flash evaporation is therefore the preferred introduction technique.

3.1.3.1.5 SAMPLE PREPARATION

The sorbent tubes are loaded on a 16 position autosampler from Envirochem, connected to a Tekmar LSC-2000 concentrator, after calibration tubes, spiked with the calibration standard, and a clean tube serving as "mounting blank." Internal standards and surrogate, if required, are spiked into all tubes by a special assessor system the Walsh-O-Matic, that incorporates a gas sampling loop, fed by a cylinder of a certified gas or mixture of gases. Heat desorption of the sample tubes, trapping on the analytical trap in the concentrator, and introduction into the GC/MS are programmed into the system to follow a coordinated sequence. After desorbing, the compounds are carried through heated lines from the sample tube to an analytical trap and then to the GC/MS inlet system. Band narrowing, i.e. focusing of the analytes, is accomplished by a liquid nitrogen cryotrap in the GC/MS, before the sample is introduced in the analytical column.

3.1.3.1.6 QUALITATIVE ANALYSIS OF TARGETED COMPOUNDS

Compound identification is based on the computer algorithms for matches of the sample spectra with the library spectra, developed in-house from standard injection (Reverse library search). All ions in the standard mass spectrum of a relative intensity greater than 10 percent of the most abundant ion must

be present. The relative intensities of the ions must agree within 20± percent. The ions greater than 10 percent in the sample, but not in the standard, must be accounted for. As an aid in identification of compounds, the relative retention time of the sample peak is compared with that in the standard analysis. The relative retention times should not deviate by more than six percent.

3.1.3.1.7 COMPUTER IDENTIFICATION OF UNKNOWN COMPOUNDS

Non-targeted compounds can be tentatively identified compounds (TIC) by matching their spectra to spectra in the NIST library, by computer search (Forward Search). The algorithms for the match are based on the USEPA criteria:

The major ions in the reference spectra, greater than 10 percent of the most abundant ion, must be present. The relative intensities must agree. The molecular ions present in the reference spectra must be in the sample spectra. Ions present in the sample spectra, but not in the reference spectra, are reviewed for contamination or coelution. Ions contributed by background and unresolved compounds can be subtracted by the computer software. Ions present in the reference spectra greater than 10 percent must be found in the sample spectra.

If the above criteria are not met, the mass spectral interpretation analyst will report the compound as an "unknown." If more information about the type of the unknown is available (e.g. aromatic hydrocarbon), this information will be reported. Retention time information can be used as an aid in the identification process.

3.1.3.8 QUANTITATIVE ANALYSIS

If the reverse library search establishes a positive targeted analyte, the concentration of the analyte is computed by the software program with the relative response factors established in the multipoint calibration. The data system is capable of computing the reportable sample concentration if the appropriate parameters are entered according to the following:

$$\text{Conc. (ug/l)} = \frac{(A_x) \times (I_s)}{(A_{is}) \times (RRF) \times (V_o)}$$

where: A_x = Area of sample ion
 A_{is} = Area of internal standard ion
 I_s = ng of internal standard
 V_o = Volume of air collected (ml)
 RRF = Relative Response Factor

This applies if data are reported as ug/l. If ppb units (by volume) are required for the results, the concentrations are converted according to the formula:

$$1000 \text{ ppb (volume)} = \frac{\text{MW}}{24.5} \text{ ug/l}$$

where: MW = Molecular weight of compound in gram
24.5 = Volume of one mole of an inert gas at
appx. 25°C

For TICs, the concentrations are estimated using the area counts from the total ion chromatograms for both the analyte and the internal standard. A RRF of one (1) is assumed.

3.1.3.1.9 QA/QC PROCEDURES

Most of the monitoring requirements involve the tracking of potential secondary contamination. Conditioning blanks and field blanks are tested with each batch, to assure contamination-free tubes at the onset of sampling, and to ensure that no contamination was introduced during transport and storage. "Mounting blanks" are analyzed in the laboratory daily. They permit identification of contaminations picked up during mounting of tubes for the desorption process. They also show contaminations that can be traced back to the instrument, stemming from carryover due to "out-gassing" of the transfer lines. Other checks related to analysis are verification of the calibration, sensitivity checks for the analytical system by analyzing MDL level standards, and leak checks of the desorption systems.

Trap Preparation: Traps packed in the laboratory must be checked for uniformity of packing by checking the back pressure. Tubes purchased from Envirochem are subject to their QC procedure. All traps have to be conditioned in a contamination free area at 180°C for 10 minutes with a nitrogen flow of at least 40 ml/minute. This temperature should not be exceeded to avoid Tenax decomposition. After cool down, under gas flow, the tubes are immediately sealed in screw-top tube holders, and stored in capped wide-mouth jars over a bed of carbon. The carbon has to be replaced for each batch. Holding times shall until sampling shall not exceed seven days.

Duplicates: If samples cannot be resampled, it is advisable to collect the sorbent tubes in duplicate so that a spare sample is available in the event of an instrument malfunctioning. Duplicates should also be collected to assess the precision of the technique. Parallel samples can be taken at the same source for simultaneous sampling by attaching a splitter for the two traps. The volumes, and therefore the concentration measured, will vary slightly based on slightly different back pressures of the traps. Sequentially collected samples might not be representative, if the concentration of the sample cannot be assumed to be constant.

Back-up Tubes for Breakthrough Studies: Recovery studies in the laboratory have been limited to flow volumes of one liter. At this volume, no breakthrough has been detected. The expected breakthrough volumes are expected to resemble those of the NIOSH carbon tubes listed in the NIOSH sampling procedures. If large volumes are to be collected, back-up tubes should be collected in tandem to check for breakthrough. In very wet

conditions, the capacity of the collection tubes is decreased due to the moisture retained on the carbon. It is then advisable to check for breakthrough for any volumes exceeding one liter.

System Leak Checks: In order to check for leaks, the GC/MS scans are acquired, including the masses of nitrogen and oxygen. They have to be under a certain empirical ratio to the masses of the tuning compound (i.e. under 10 percent).

Mounting Blank: A contamination-free sorbent tube is analyzed to verify that the instrument is contaminant-free. This could be a previously desorbed tube, which is briefly taken off and remounted.

Conditioning Blank: One trap of each conditioning batch has to be analyzed for contaminations, before the batch is released for collection of samples.

Trip Blank: Each batch of tubes for sample collection is accompanied by two blank tubes sealed and stored in the same manner as the sample tubes. They are shipped back to the laboratory together with the exposed sample tubes for analysis. Analytes found on these traps indicate contamination introduced during shipping and storage and render positives of the same analytes in the sample tubes questionable.

Field Blank: A sorbent tube can be taken out of the storage container in the field and either opened for the same amount of time as the sample sorbent tube, or ambient air is passed through the tube to determine a contamination that may be picked up from the sampling site.

Method Detection Limit (MDL): On a yearly basis, or when instrument parameters are changed, or new compounds are included in the procedure, an MDL study is performed. Seven sorbent tubes are charged with levels one to two times the estimated reporting levels and analyzed. The results are summarized and statistically evaluated to determine the MDL.

Surrogate Recoveries: To monitor recovery of analytes, the sorbent tubes can be spiked with the surrogate compounds bromofluorobenzene, toluene-d8 and 1,2-dichloroethane-d4. This, however, is not a requirement for methods T01, T02 or the equivalent EPA indoor air methods. Acceptance limits are computed statistically evaluating at least 20 sample results. Even though samples cannot be reanalyzed if QC limits are exceeded, these limits still can be used to assess potential problems with the data.

Internal Standards: The internal standard areas and retention times are monitored. Due to addition of the spikes by the automated system, the spike amounts are extremely reproducible. Any significant deviation of areas indicates either leaks or changes in the sensitivity of the GC/MS. The areas should not deviate by more than 50%, and to satisfy CLP criteria, no more than 40% from the areas of the daily calibration standard. For sorbent tube analysis with heat desorption, the test cannot be repeated. Therefore, if data exceed the QC limit, the non-compliant values are flagged, and results of positives that are calculated with internal standards that do not meet criteria, have to be qualified.

The retention times of the internal standards are also monitored. The required limits are ± 0.5 minutes. Samples cannot be re-analyzed if limits are exceeded, but remedial action has to be taken, before further analyses can be performed. Non-compliant data are flagged.

3.1.3.10 FILING AND STORAGE OF DATA

All BFB standards, blanks, calibrations and samples are logged in the instrument run book. All raw data are archived on magnetic tapes shortly after data acquisition is complete. Magnetic tapes are kept for a period of three years.

3.1.3.1.1 SORBENT TUBE ANALYSIS WITH HEAT DESORPTION

The procedure was designed for the analysis of low levels of volatile organics. It has been applied for the compounds targeted in the Purge and Trap Method 624, and the additional compounds listed in the Targeted Compound List (TCL) of the CLP, as well as the 58 volatile compounds, targeted in the EPA Superfund Method (Reference #24). The application could be expanded to comprise other analytes (e.g. petroleum hydrocarbons with a chain length larger than propane. (Methane and ethane are not analyzable with this method.) Suitability for other compounds of interest has to be established, if requested.

This procedure is applicable for the determination of the volatile organics in raw landfill gas, process gas as well as ambient air. It is designed to meet the monitoring requirements of gas producing industries, the Gas Research Institute, and state and federal regulatory agencies.

Sorbent tube collection with heat desorption covers the broadest range of concentrations. For a sample volume of one liter this method is capable of detecting the same concentration levels as the Summa Canister Method, of one part billions. If lower quantification limits are required, larger volumes are collected. On the other hand, if high levels are to be analyzed, or unknown samples have to be prescreened for the concentration level, the volume collected has to be scaled down appropriately, in order not to overload the analytical system. However, this would sacrifice sensitivity at the same time.

3.1.3.1.1 SORBENT TUBE SAMPLINGMaterial and Equipment:

- Field sampling unit - capable of maintaining a consistent flow rate, needed to collect the desired flow volume over a reasonable collection time. The unit is to consist of portable pump, power supply, fine metering valves, dual range flow meter.
- Sample trap - 1/4" OD x 8" glass tubes packed with glass beads, Tenax-TA, Ambersorb XE-340, and activated charcoal.
- Trap storage container with carbon bed and trap holders.
- Container that can be environmentally controlled, if temperature rises above 80°F.
- Miscellaneous tools and Swagelok fittings. Connector for sorbent tube to sampling port.
- Field data forms.

Sampling Procedure: For inlet gas, ambient air and surface gas, a sampling train, including a pump, is needed. Product gas is under positive pressure and no pump is required for sampling, but the gas flow has to be controlled by a regulator.

Flow adjustment: The pressure on the sampling ports vary,

and the settings on the valves have to be adjusted for each sample port to achieve the desired flow rate. A dummy tube of equal back pressure is used for this purpose prior to sampling.

Sample Collection: After the correct flow rate has been established, the sample tube is connected and the gas (or air) passed through the sorbent for the duration necessary to collect the desired flow volume. The flow has to be monitored on the flow meter during sampling and maintained throughout the sampling time.

Data Logging: All data pertaining to the sampling site and the parameters for the individual sample have to be recorded on field data forms. The sorbent tubes are clearly labeled with numbers, which have to be referenced in the records on the data forms.

3.1.3.1.2 STORAGE PRESERVATION AND HANDLING

The chain of custody (COC) should be as streamlined as possible. All traps and sampling devices should be subject to similar handling and storage conditions. COC from sample trap preparation through analysis and recycling must be established and strictly enforced. Storage of sorbent traps should be in a contamination-free area at or below 4 °C. At temperatures exceeding 25 °C during sampling and shipping, the sample containers have to be stored in a cooler.

3.1.3.1.3 SUMMARY OF SAMPLE ANALYSIS

The samples are analyzed by GC/MS on widebore capillary column. The instrument is calibrated by internal standard method. Internal standards, and as required surrogate standards, are automatically added to all sample tubes by the Walsh-O-Matic connected to the Environchem autosampler. The autosampler then heat desorbs the sample tubes, and the released compounds are carried with an inert gas onto the analytical trap of a Tekmar concentrator. From there, they are transferred to the GC/MS system. Analysis occurs on a quadropole MS (HP5996), and data are reduced on a HP data system.

Modifications:

(1) If samples exhibit very high moisture contents that could generate problems in the cryotrap, e.g. if waterdrops are noticeable in the tubes, the gas stream carrying the desorbed sample from the autosampler to the concentrator can be led through a vial containing 2 ml of water, to achieve condensation of excess water. This is only necessary in extreme cases. Minor amounts of water are effectively removed in the moisture control module of the Tekmar concentrator.

(2) Instead of utilizing the autosampler, samples can be mounted singly directly in a special heater accessory of the Tekmar concentrator. In this mode of operation the sample is desorbed directly onto the GC/MS inlet system. In this manual

operation the tube is still spiked with surrogate and internal standard(s) in the Walsh-O-Matic, before they are mounted on the concentrator heater assembly.

3.1.3.1.4 CALIBRATION

The following operations will be performed routinely: Documentation of mass calibration and abundance pattern, documentation of GC/MS RF stability of response factors (RF) against internal standards, and internal standard response and retention time monitoring.

It is important that the initial calibration is performed with the same instrument parameters as the samples are analyzed. This applies to settings for the GC and MS as well as thermal desorption parameters.

Tuning and Mass Calibration: Prior to initiating data collection, it is necessary to establish that the instrument meets the standard mass spectral abundance criteria. The instrument is hardware tuned with calibration gas (PFTBA) and then the mass calibration is checked by analysis of 50 ng bromofluorobenzene (BFB). BFB must be analyzed every 12 hour period and USEPA abundance criteria must be met.

BFB MASS ABUNDANCE CRITERIA

<u>Mass</u>	<u>m/z Abundance Criteria</u>
50	15 to 40% of mass 95
75	30 to 66% of mass 95
95	Base peak, 100% relative abundance
96	5 to 9% of mass 95
173	<2% of mass 174
174	greater than 50% of mass 95
175	5 to 9% of mass 174
176	95 to 101% of mass 174
177	5 to 9% of mass 176

The results are supplied in the form of a bar graph and mass abundance listing. Results of the BFB analyses have to be filed by the analyst.

Initial Calibration: Prior to the analysis of samples and after tuning criteria have been met, the GC/MS system must be initially calibrated at a minimum of three (five for CLP) concentrations to determine the response curve for all targeted compounds and surrogate standards. Average response factors are computed for the linear range. Typically levels between five and 1000 ng are analyzed.

Five ng correspond to about 1/2 to 2 ppb(v), depending on the molecular weight of the compound. For low level work, calibration down to 2ng (<1ppb) can be performed.

Working calibration curves are used, or average RFs can be employed, if the response is constant over the working range.

For that, the RSD has to be under 35 percent (25 percent for CLP).

The internal standard method of analysis is used. For routine ambient and indoor air samples all tubes are spiked with 1,4-difluorobenzene as reference. For CLP protocol the internal standards used are bromochloromethane, 1,4-difluorobenzene and chlorobenzene-d₅. The area response of the characteristic m/z against the concentration for each compound and internal standard is tabulated and RF for each compound is calculated using the following equation:

$$RF = \frac{(AS) (CIS)}{(AIS) (CS)}$$

Where: AS = Area of characteristics m/z for the analyte
AIS = Area of the characteristics m/z for the internal standard
CIS = Concentration of internal standard
CS = Concentration of the internal standard parameter to be measured

Continuing Calibration: A calibration standard, containing all targeted priority volatile compounds as well as surrogates (if used) and internal standards, is analyzed each day. This check is used to verify the RF derived from the initial calibration. Acceptance criterion, according to the CLP protocol, is 25 percent difference. If all responses are within the acceptable range, the analysis can begin. If certain analytes do not meet, those analytes must be re-analyzed. If upon re-analysis the criteria are still not met, a new calibration curve must be prepared.

Preparation of Standard Tubes for Calibration

Introduction by Flash Evaporation Unit: The unit consists of an empty tube with heater jacket, equipped with a septum injection port and connection to helium supply. The clean sorbent tube, to be spiked (with calibration standard), is attached with a union to the outlet of the evaporation tube. Microliter volumes of the methanol standard solution are then injected, evaporated and carried with the helium stream onto the sorbent tube. The flow of helium of approximately 40 ml should be maintained for about one min., to assure quantitative transfer of the compounds onto the calibration tube.

A drawback of the methanol spiking is quenching of the responses for the early eluting analytes. If early compounds (gases) are targeted, the response factors of the purge and trap introduction procedure have to be used. Ideally gas standards should be used. The flash evaporation unit can also be utilized for the introduction of milliliter quantities of gas standards onto the calibration tubes. Gas standards can be obtained in cylinders commercially, by utilizing permeation

tubes, or preparing the standards from the neat compound. For this purpose microliter quantities of the neat volatile compound are injected into a known volume of clean air or inert gas in a gas sampling bulb with septum. Note that these gas standards in bulbs cannot be held longer than 24 hours and that dilution occurs, once a certain amount of milliliters are withdrawn.

Introduction by Purge and Trap Procedure: The calibration sorbent tube is connected at the outlet of a sampling vessel of a Tekmar ALS16. Methanol solutions containing the compounds are spiked into two ml water, which is loaded with a syringe through a Hamilton valve into a purge and trap sampling vessel. "Load" an additional 1/2 ml of water or air through the valve to quantitatively introduce the 2ml solution. Alternatively gas standards (ml quantities) are added to the sampling vessel through the same valve, as needed. Purging the two ml water for 11 minutes at 40 ml/minute transfers the compounds from the sparge vessel to the sorbents of the tube without causing breakthrough. If chloromethane or bromomethane are analyzed, the purge gas volume cannot exceed 500 ml. Some lowered response for the polar, heavy and brominated compounds are observed for this mode of introduction due to poor purge efficiency. For heavy and polar compounds flash evaporation is therefore the preferred introduction technique.

3.1.3.1.5 SAMPLE PREPARATION

The sorbent tubes are loaded on a 16 position autosampler from Envirochem, connected to a Tekmar LSC-2000 concentrator, after calibration tubes, spiked with the calibration standard, and a clean tube serving as "mounting blank." Internal standards and surrogate, if required, are spiked into all tubes by a special assessor system the Walsh-O-Matic, that incorporates a gas sampling loop, fed by a cylinder of a certified gas or mixture of gases. Heat desorption of the sample tubes, trapping on the analytical trap in the concentrator, and introduction into the GC/MS are programmed into the system to follow a coordinated sequence. After desorbing, the compounds are carried through heated lines from the sample tube to an analytical trap and then to the GC/MS inlet system. Band narrowing, i.e. focusing of the analytes, is accomplished by a liquid nitrogen cryotrap in the GC/MS, before the sample is introduced in the analytical column.

3.1.3.1.6 QUALITATIVE ANALYSIS OF TARGETED COMPOUNDS

Compound identification is based on the computer algorithms for matches of the sample spectra with the library spectra, developed in-house from standard injection (Reverse library search). All ions in the standard mass spectrum of a relative intensity greater than 10 percent of the most abundant ion must

be present. The relative intensities of the ions must agree within 20+ percent. The ions greater than 10 percent in the sample, but not in the standard, must be accounted for. As an aid in identification of compounds, the relative retention time of the sample peak is compared with that in the standard analysis. The relative retention times should not deviate by more than six percent.

3.1.3.1.7 COMPUTER IDENTIFICATION OF UNKNOWN COMPOUNDS

Non-targeted compounds can be tentatively identified compounds (TIC) by matching their spectra to spectra in the NIST library, by computer search (Forward Search). The algorithms for the match are based on the USEPA criteria:

The major ions in the reference spectra, greater than 10 percent of the most abundant ion, must be present. The relative intensities must agree. The molecular ions present in the reference spectra must be in the sample spectra. Ions present in the sample spectra, but not in the reference spectra, are reviewed for contamination or coelution. Ions contributed by background and unresolved compounds can be subtracted by the computer software. Ions present in the reference spectra greater than 10 percent must be found in the sample spectra.

If the above criteria are not met, the mass spectral interpretation analyst will report the compound as an "unknown." If more information about the type of the unknown is available (e.g. aromatic hydrocarbon), this information will be reported. Retention time information can be used as an aid in the identification process.

3.1.3.8 QUANTITATIVE ANALYSIS

If the reverse library search establishes a positive targeted analyte, the concentration of the analyte is computed by the software program with the relative response factors established in the multipoint calibration. The data system is capable of computing the reportable sample concentration if the appropriate parameters are entered according to the following:

$$\text{Conc. (ug/l)} = \frac{(Ax) \times (Is)}{(Ais) \times (RRF) \times (Vo)}$$

where: Ax = Area of sample ion
Ais = Area of internal standard ion
Is = ng of internal standard
Vo = Volume of air collected (ml)
RRF = Relative Response Factor

This applies if data are reported as ug/l. If ppb units (by volume) are required for the results, the concentrations are converted according to the formula:

$$1000 \text{ ppb (volume)} = \frac{\text{MW}}{24.5} \text{ ug/l}$$

where: MW = Molecular weight of compound in gram
24.5 = Volume of one mole of an inert gas at
appx. 25°C

For TICs, the concentrations are estimated using the area counts from the total ion chromatograms for both the analyte and the internal standard. A RRF of one (1) is assumed.

3.1.3.1.9 QA/QC PROCEDURES

Most of the monitoring requirements involve the tracking of potential secondary contamination. Conditioning blanks and field blanks are tested with each batch, to assure contamination-free tubes at the onset of sampling, and to ensure that no contamination was introduced during transport and storage. "Mounting blanks" are analyzed in the laboratory daily. They permit identification of contaminations picked up during mounting of tubes for the desorption process. They also show contaminations that can be traced back to the instrument, stemming from carryover due to "out-gassing" of the transfer lines. Other checks related to analysis are verification of the calibration, sensitivity checks for the analytical system by analyzing MDL level standards, and leak checks of the desorption systems.

Trap Preparation: Traps packed in the laboratory must be checked for uniformity of packing by checking the back pressure. Tubes purchased from Envirochem are subject to their QC procedure. All traps have to be conditioned in a contamination free area at 180°C for 10 minutes with a nitrogen flow of at least 40 ml/minute. This temperature should not be exceeded to avoid Tenax decomposition. After cool down, under gas flow, the tubes are immediately sealed in screw-top tube holders, and stored in capped wide-mouth jars over a bed of carbon. The carbon has to be replaced for each batch. Holding times shall until sampling shall not exceed seven days.

Duplicates: If samples cannot be resampled, it is advisable to collect the sorbent tubes in duplicate so that a spare sample is available in the event of an instrument malfunctioning. Duplicates should also be collected to assess the precision of the technique. Parallel samples can be taken at the same source for simultaneous sampling by attaching a splitter for the two traps. The volumes, and therefore the concentration measured, will vary slightly based on slightly different back pressures of the traps. Sequentially collected samples might not be representative, if the concentration of the sample cannot be assumed to be constant.

Back-up Tubes for Breakthrough Studies: Recovery studies in the laboratory have been limited to flow volumes of one liter. At this volume, no breakthrough has been detected. The expected breakthrough volumes are expected to resemble those of the NIOSH carbon tubes listed in the NIOSH sampling procedures. If large volumes are to be collected, back-up tubes should be collected in tandem to check for breakthrough. In very wet

conditions, the capacity of the collection tubes is decreased due to the moisture retained on the carbon. It is then advisable to check for breakthrough for any volumes exceeding one liter.

System Leak Checks: In order to check for leaks, the GC/MS scans are acquired, including the masses of nitrogen and oxygen. They have to be under a certain empirical ratio to the masses of the tuning compound (i.e. under 10 percent).

Mounting Blank: A contamination-free sorbent tube is analyzed to verify that the instrument is contaminant-free. This could be a previously desorbed tube, which is briefly taken off and remounted.

Conditioning Blank: One trap of each conditioning batch has to be analyzed for contaminations, before the batch is released for collection of samples.

Trip Blank: Each batch of tubes for sample collection is accompanied by two blank tubes sealed and stored in the same manner as the sample tubes. They are shipped back to the laboratory together with the exposed sample tubes for analysis. Analytes found on these traps indicate contamination introduced during shipping and storage and render positives of the same analytes in the sample tubes questionable.

Field Blank: A sorbent tube can be taken out of the storage container in the field and either opened for the same amount of time as the sample sorbent tube, or ambient air is passed through the tube to determine a contamination that may be picked up from the sampling site.

Method Detection Limit (MDL): On a yearly basis, or when instrument parameters are changed, or new compounds are included in the procedure, an MDL study is performed. Seven sorbent tubes are charged with levels one to two times the estimated reporting levels and analyzed. The results are summarized and statistically evaluated to determine the MDL.

Surrogate Recoveries: To monitor recovery of analytes, the sorbent tubes can be spiked with the surrogate compounds bromofluorobenzene, toluene-d8 and 1,2-dichloroethane-d4. This, however, is not a requirement for methods T01, T02 or the equivalent EPA indoor air methods. Acceptance limits are computed statistically evaluating at least 20 sample results. Even though samples cannot be reanalyzed if QC limits are exceeded, these limits still can be used to assess potential problems with the data.

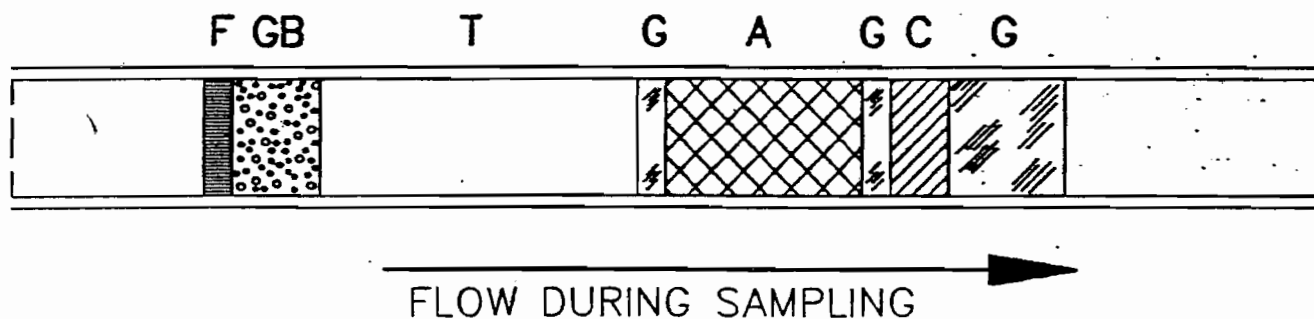
Internal Standards: The internal standard areas and retention times are monitored. Due to addition of the spikes by the automated system, the spike amounts are extremely reproducible. Any significant deviation of areas indicates either leaks or changes in the sensitivity of the GC/MS. The areas should not deviate by more than 50%, and to satisfy CLP criteria, no more than 40% from the areas of the daily calibration standard. For sorbent tube analysis with heat desorption, the test cannot be repeated. Therefore, if data exceed the QC limit, the non-compliant values are flagged, and results of positives that are calculated with internal standards that do not meet criteria, have to be qualified.

The retention times of the internal standards are also monitored. The required limits are ± 0.5 minutes. Samples cannot be re-analyzed if limits are exceeded, but remedial action has to be taken, before further analyses can be performed. Non-compliant data are flagged.

3.1.3.10 FILING AND STORAGE OF DATA

All BFB standards, blanks, calibrations and samples are logged in the instrument run book. All raw data are archived on magnetic tapes shortly after data acquisition is complete. Magnetic tapes are kept for a period of three years.

FIGURE 1
MIXED BED SORBENT TUBES
FROM H2M - LABS



F = Frit

GB = Glassbeads $3/8"$

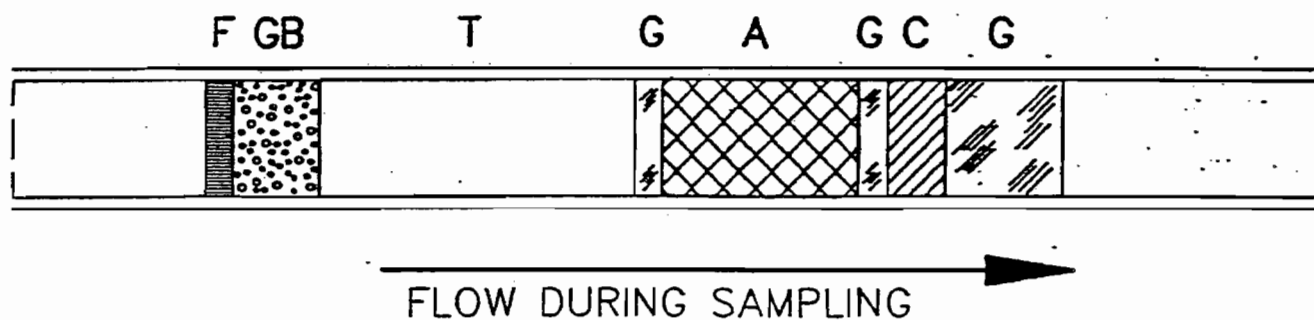
T = Tenax TA 20-35 mesh
 $1\frac{3}{8}"$, 75mg

G = Glasswool

C = Charcoal $1/4"$

A = Ambersorb $7/8"$

FIGURE 1
MIXED BED SORBENT TUBES
FROM H2M - LABS



F = Frit

GB = Glassbeads $\frac{3}{8}$ "

T = Tenax TA 20-35 mesh
 $1\frac{3}{8}$ " , 75mg

G = Glasswool

C = Charcoal $\frac{1}{4}$ "

A = Ambersorb $\frac{7}{8}$ "

**Former Computer Circuits Site
Hauppague, New York**

**Ambient Air Sampling
Data Collection Parameters**

Sample	Start Flow mL/min	End Flow mL/min	Avg. Flow mL/min	Start Time	End Time	Total Time	Total Volume L
AS-1	102	101	101.5	13:29	15:12	1:43	10.45
AS-2	160	160	160	15:20	16:25	1:05	10.4
AS-3	109	108	108.5	11:38	13:18	1:40	10.85
AS-4	100	98.5	99.25	9:40	11:20	1:40	9.93

Appendix K

Aquifer Test Data

Former Computer Circuits Site
145 Marcus Blvd. Hauppauge, NY

Aquifer Test (Rising Head Slug Test)
Summary

Well ID	Test No.	Total Well Depth ft.	Saturated Screen Length ft.	Well Saturated Thickness ft.	Aquifer Saturated Thickness ft.	Depth to Water ft.	Hydraulic Conductivity ft/min	Hydraulic Conductivity ft/day
MW4	1	107.4	5.7	5.7	98.3	101.7	0.0751	108.14
	2						0.1230	177.12
MW5	1	109.8	7.05	7.05	97.25	102.75	0.1070	154.08
	2						0.0949	136.66
MW7	1	152.6	5	48.46	95.86	104.14	0.0934	134.50
	2						0.1070	154.08
MW11	1	117.1	5	26.28	109.18	90.82	0.0931	134.06
	2						0.0712	102.53
MW10	1	105	12.12	12.12	107.12	92.88	0.0356	51.26
	2						0.1000	144.00

GW Gradient (ft/ft)		01/23/2002	11/01/2001
		0.0011	0.001
GW Seepage Velocity (ft/day)			
		Minimum	0.23
		Maximum	0.78
		Mean	0.57

Minimum	51.26
Maximum	177.12
Median	135.58
Mean	129.64

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slug/bail test analysis
BOUWER-RICE's method

Date: 5/9/02 Page 1

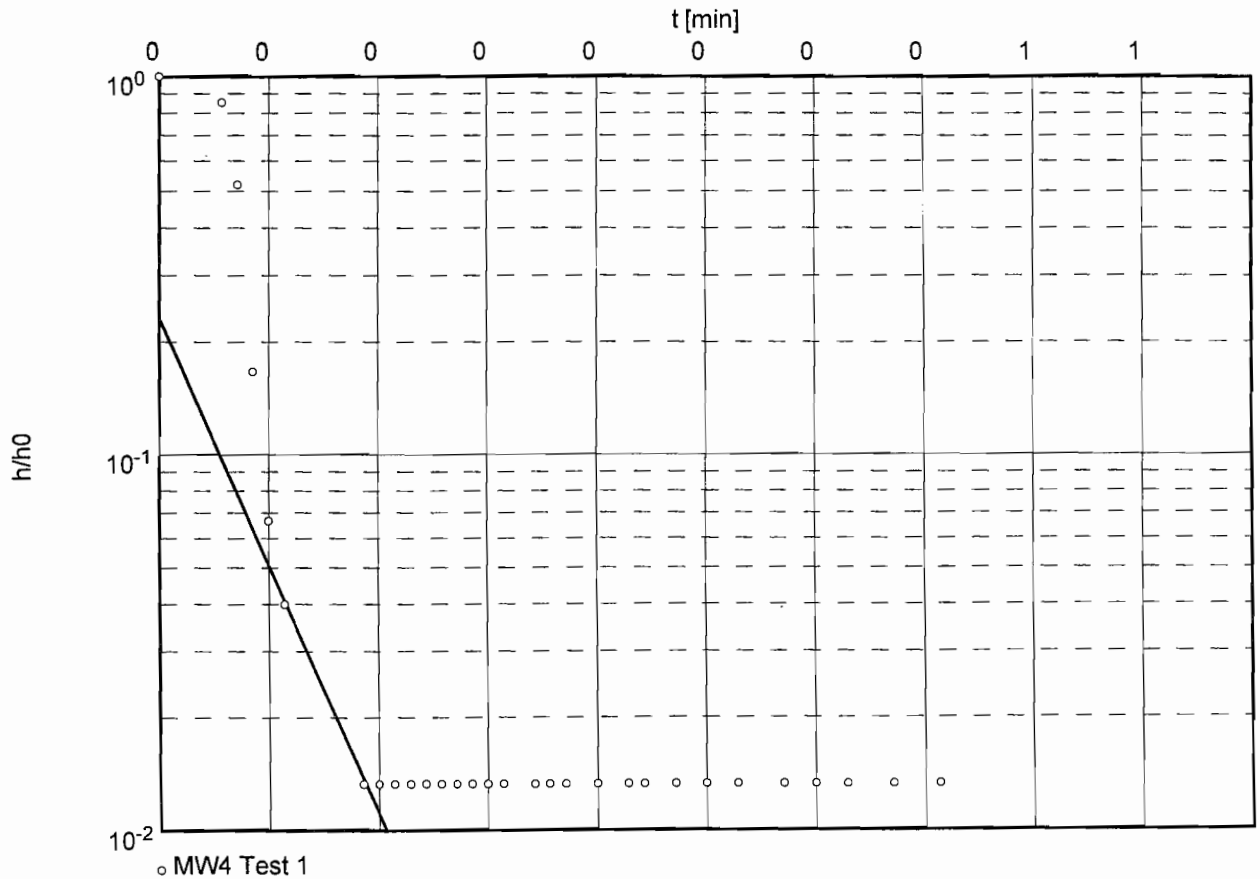
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 1

Test conducted on: 4/4/02

MW4



Hydraulic conductivity [ft/min]: 7.51×10^{-2}

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BOUWER-RICE's method

Date: 5/9/02

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Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 1

Test conducted on: 4/4/02

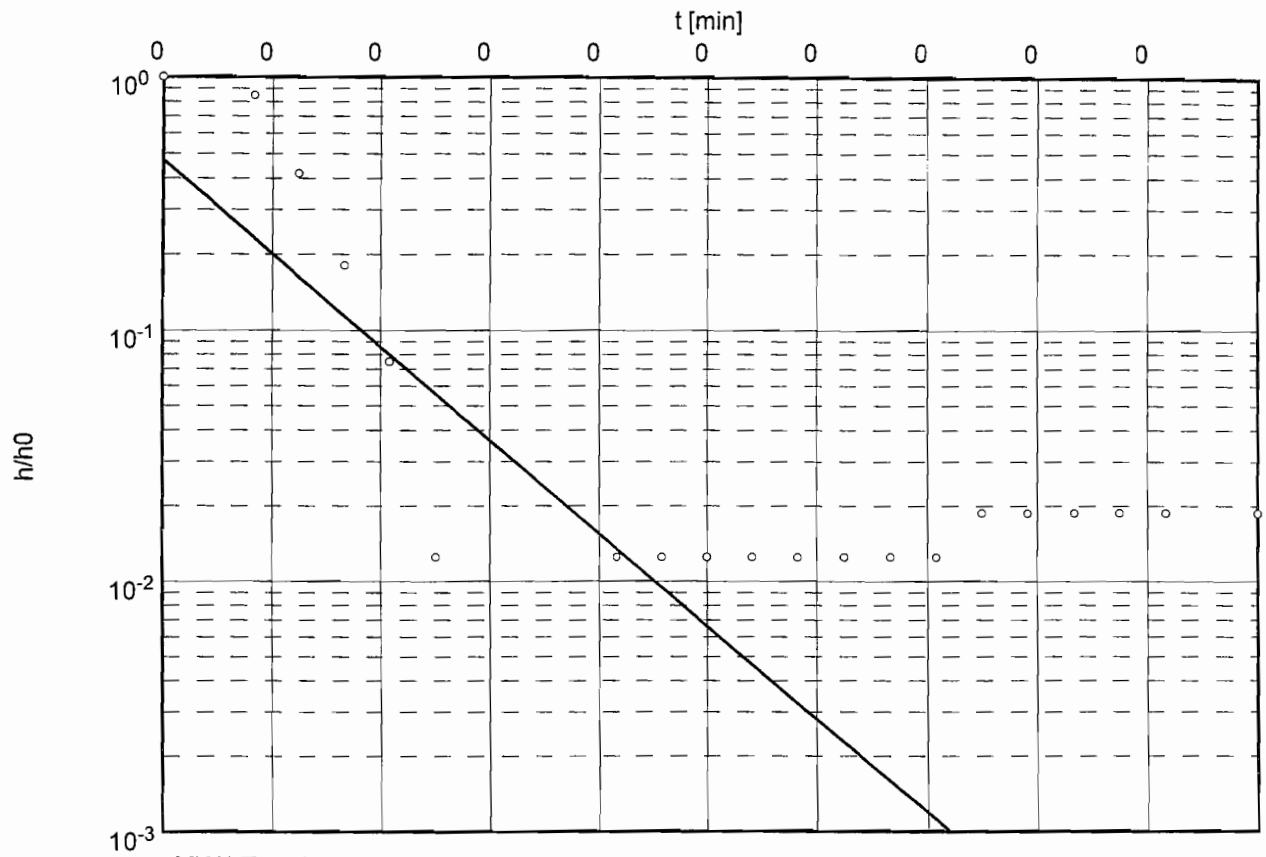
MV4

MW4 Test 1

Static water level: 0.00 ft below datum

[illegible]

Slug Test No. 2	Test conducted on: 4/4/02
MW4	



Hydraulic conductivity [ft/min]: 1.23 x 10⁻¹

Slug Test No. 2

Test conducted on: 4/4/02

MV4

MW4 Test 2

Static water level: 0.00 ft below datum

	Pumping test duration	Water level	Drawdown	
	[min]	[ft]	[ft]	
1	0.00	-1.60	-1.60	
2	0.02	-1.36	-1.36	
3	0.03	-0.67	-0.67	
4	0.04	-0.29	-0.29	
5	0.05	-0.12	-0.12	
6	0.06	-0.02	-0.02	
7	0.10	0.02	0.02	
8	0.11	0.02	0.02	
9	0.12	0.02	0.02	
10	0.13	0.02	0.02	
11	0.14	0.02	0.02	
12	0.15	0.02	0.02	
13	0.16	0.02	0.02	
14	0.17	0.02	0.02	
15	0.18	0.03	0.03	
16	0.19	0.03	0.03	
17	0.20	0.03	0.03	
18	0.21	0.03	0.03	
19	0.22	0.03	0.03	
20	0.24	0.03	0.03	
21	0.25	0.03	0.03	
22	0.26	0.03	0.03	
23	0.28	0.03	0.03	
24	0.30	0.03	0.03	
25	0.31	0.03	0.03	
26	0.33	0.03	0.03	
27	0.35	0.03	0.03	
28	0.37	0.03	0.03	
29	0.40	0.03	0.03	
30	0.42	0.03	0.03	
31	0.44	0.03	0.03	
32	0.47	0.03	0.03	
33	0.50	0.03	0.03	
34	0.52	0.03	0.03	
35	0.55	0.03	0.03	
36	0.59	0.03	0.03	
37	0.62	0.03	0.03	
38	0.66	0.03	0.03	
39	0.70	0.03	0.03	
40	0.74	0.03	0.03	
41	0.78	0.03	0.03	
42	0.83	0.03	0.03	
43	0.88	0.03	0.03	
44	0.93	0.03	0.03	
45	0.98	0.03	0.03	
46	1.04	0.03	0.03	
47	1.10	0.03	0.03	

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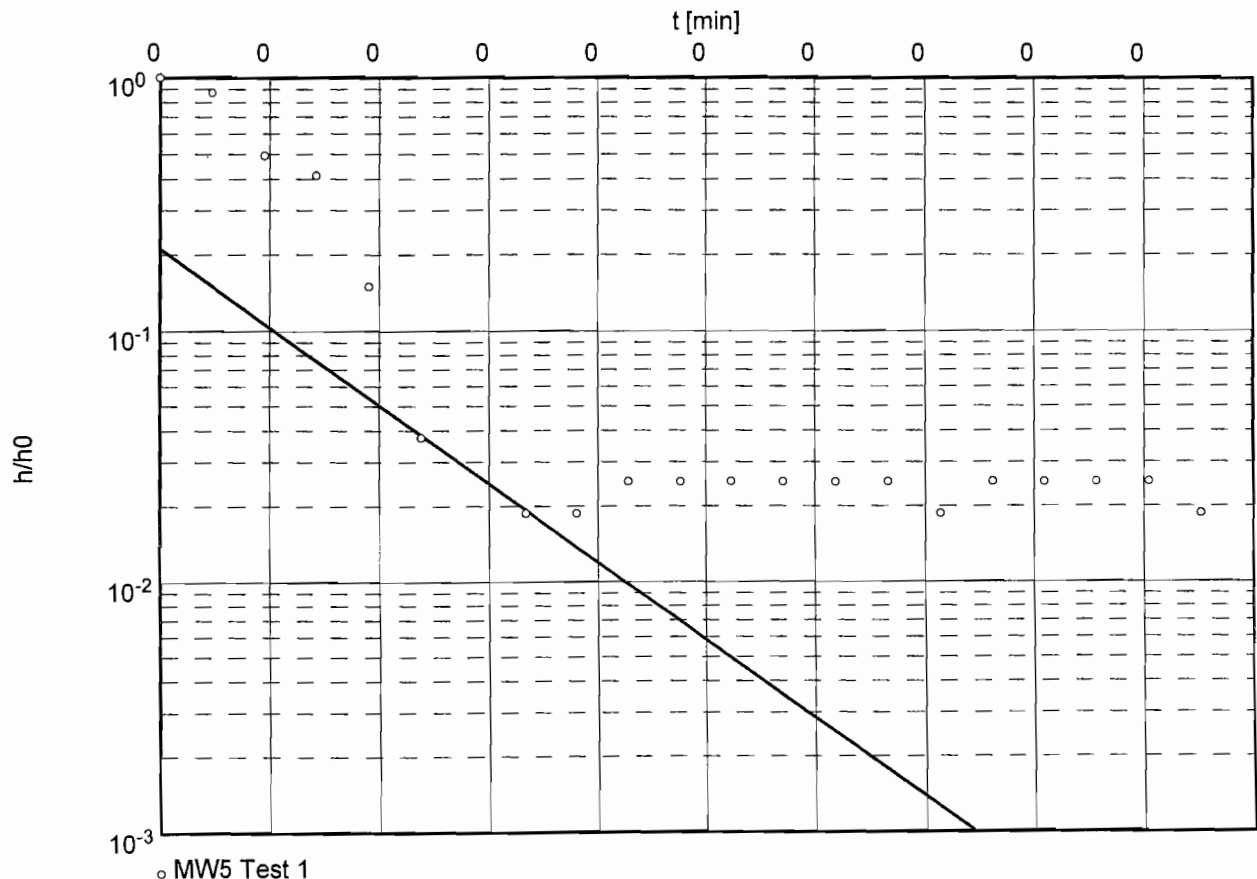
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 1

Test conducted on: 4/4/02

MW5

Hydraulic conductivity [ft/min]: 1.07×10^{-1}

MW5 Test 1

[illegible]

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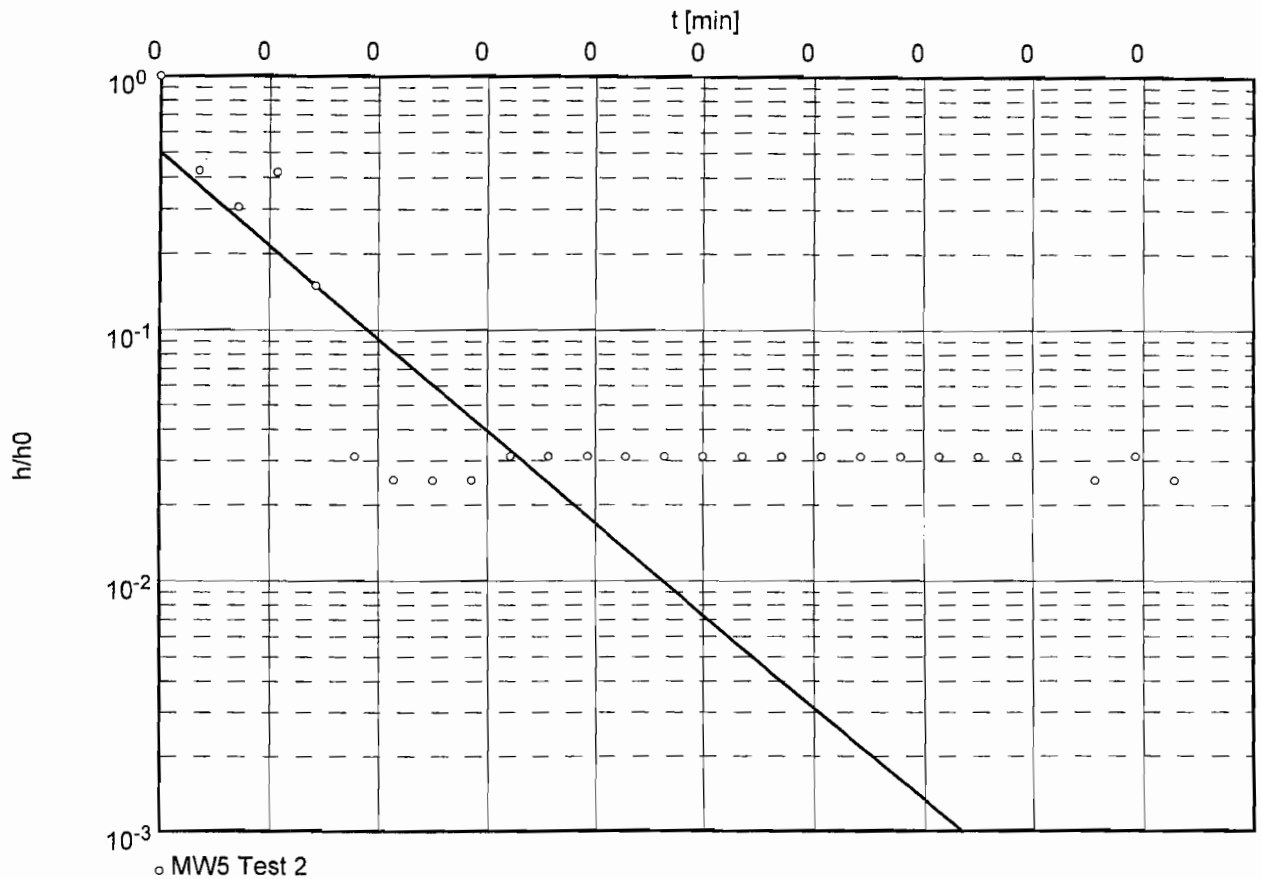
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 2

Test conducted on: 4/4/02

MW5



Hydraulic conductivity [ft/min]: 9.49×10^{-2}

Test conducted on: 4/4/02

MW5 Test 2

[illegible]

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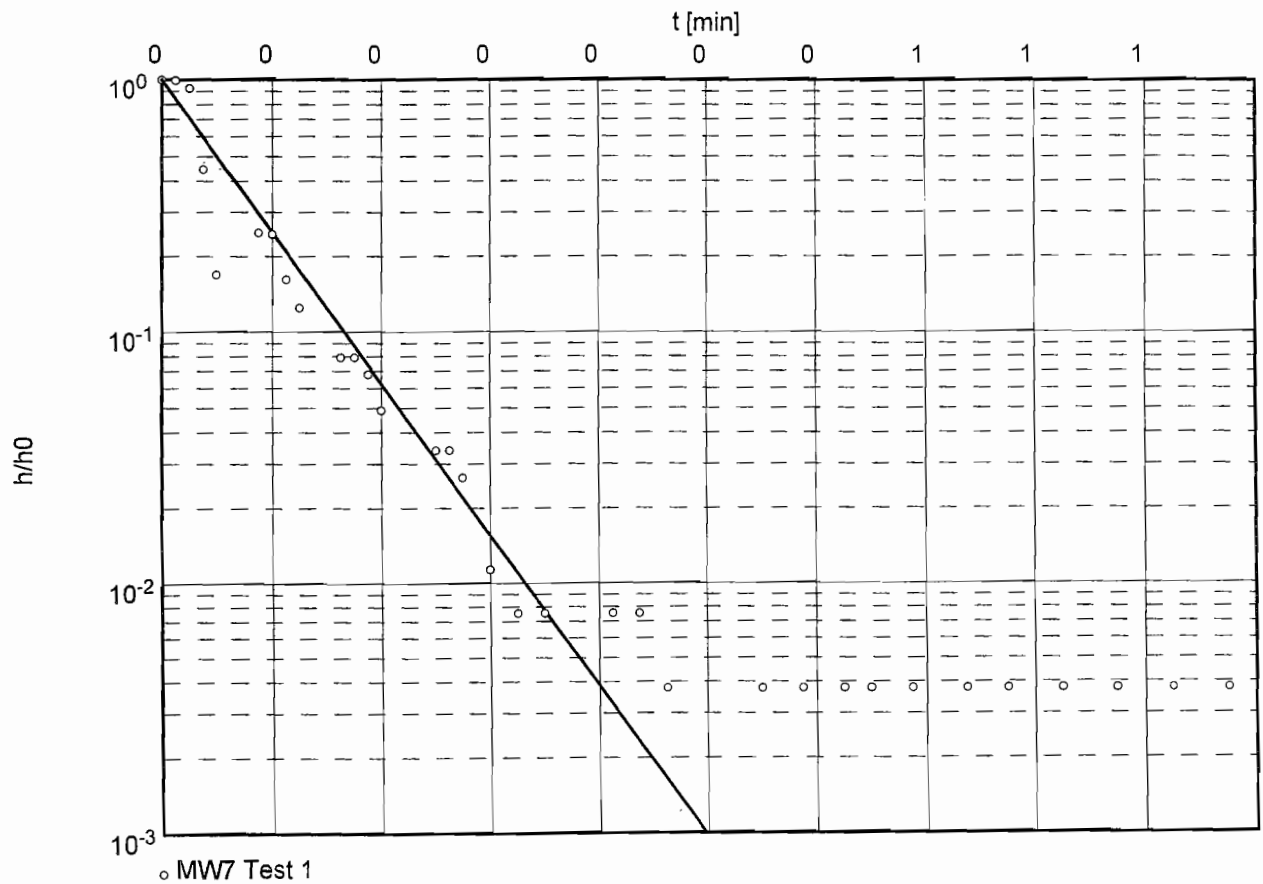
slug/bail test analysis
BOUWER-RICE's method

Date: 5/9/02 Page 1
Project: Computer Circuits
Evaluated by: C. Sosik

Slug Test No. 1

Test conducted on: 4/4/02

MW7



Hydraulic conductivity [ft/min]: 9.34×10^{-2}

MW7 Test 1

Static water level: 0.00 ft below datum

[illegible]

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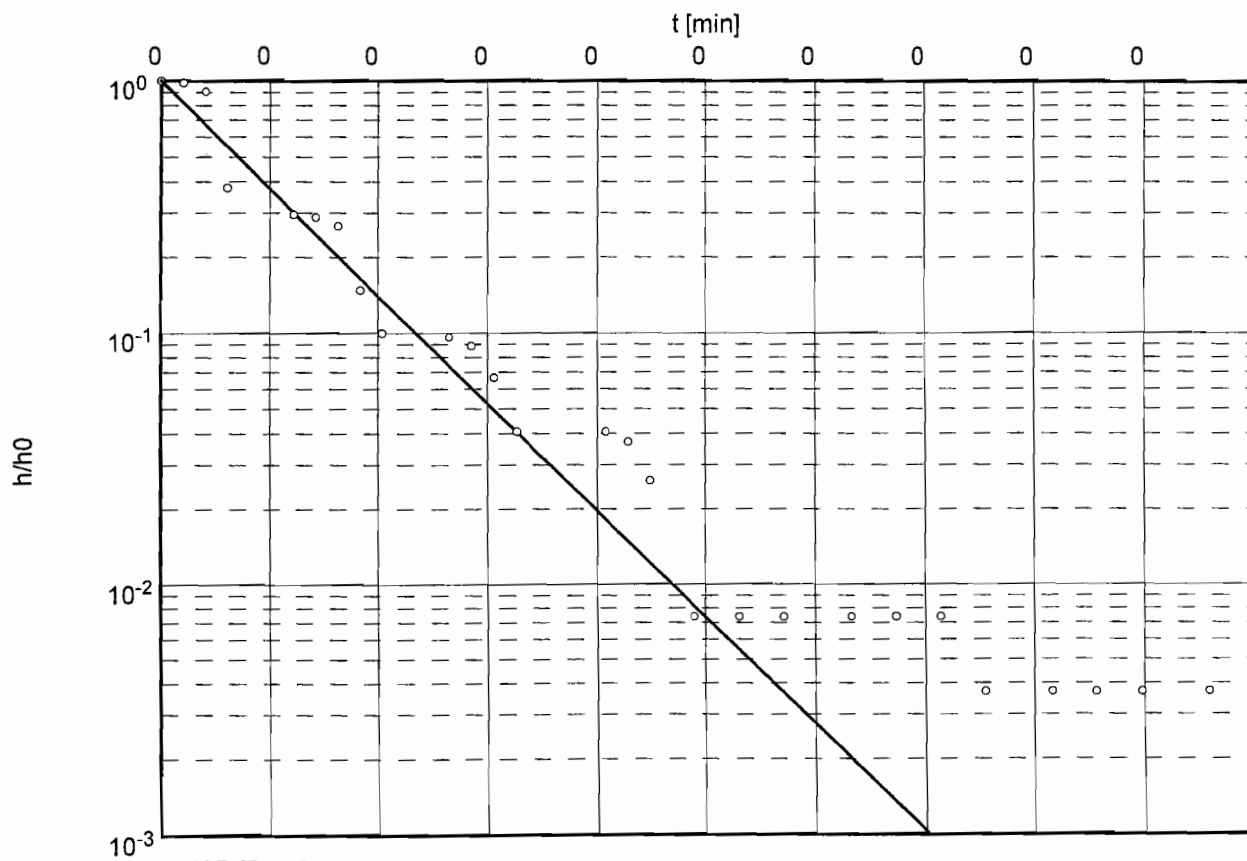
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 2

Test conducted on: 4/4/02

MW7

Hydraulic conductivity [ft/min]: 1.07×10^{-1}

[illegible]

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BOUWER-RICE's method

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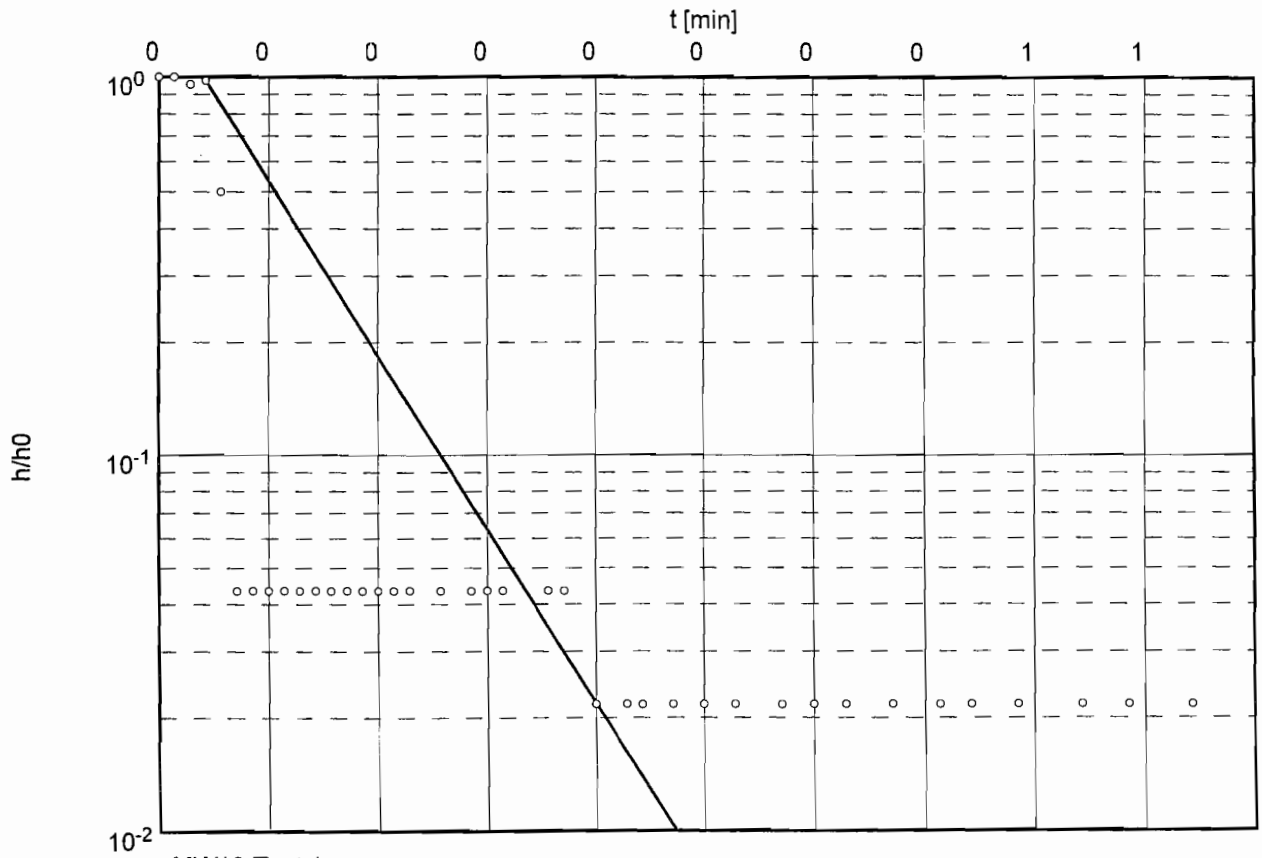
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 1

Test conducted on: 4/4/02

MW10



Hydraulic conductivity [ft/min]: 3.56×10^{-2}

[illegible]

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BOUWER-RICE's method

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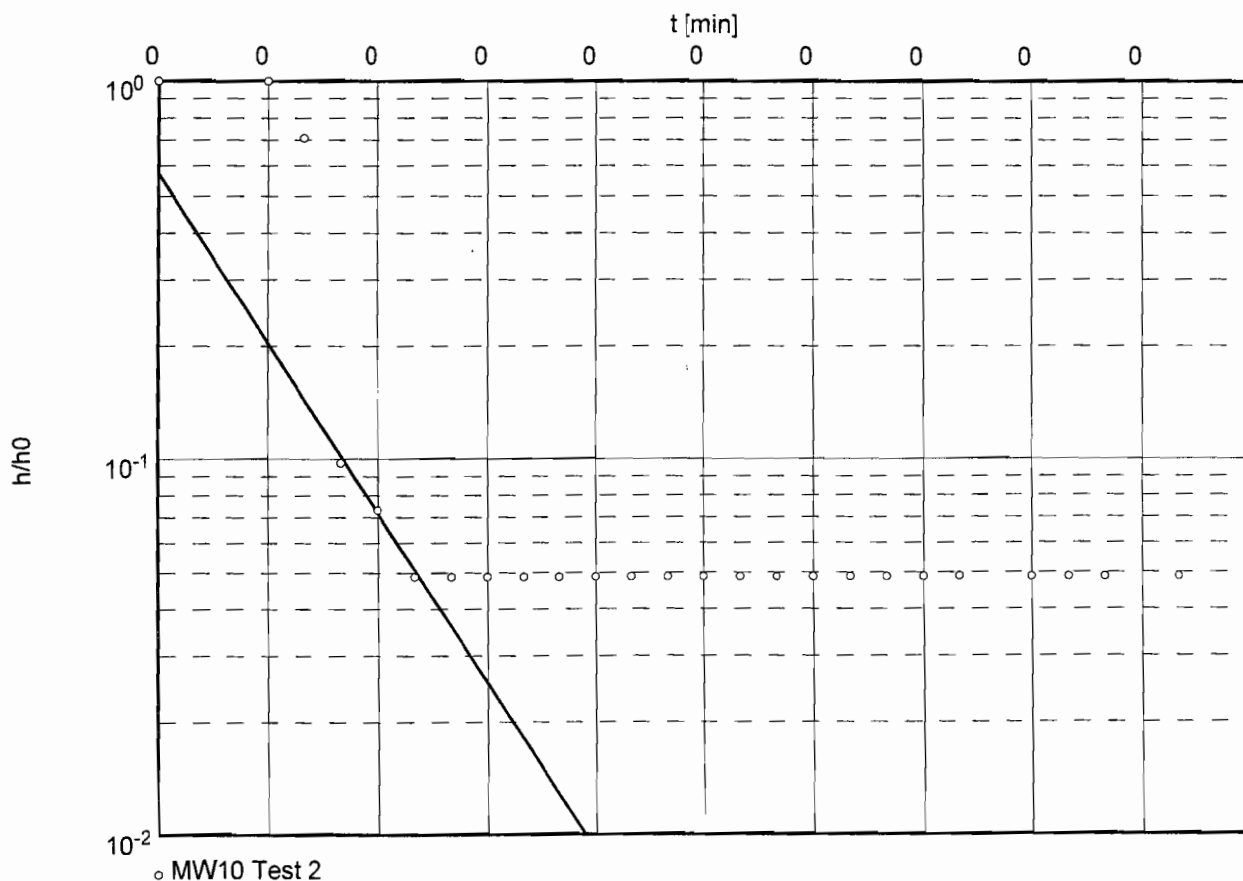
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 2

Test conducted on: 4/4/02

MW10

Hydraulic conductivity [ft/min]: 1.00×10^{-1}

[illegible]

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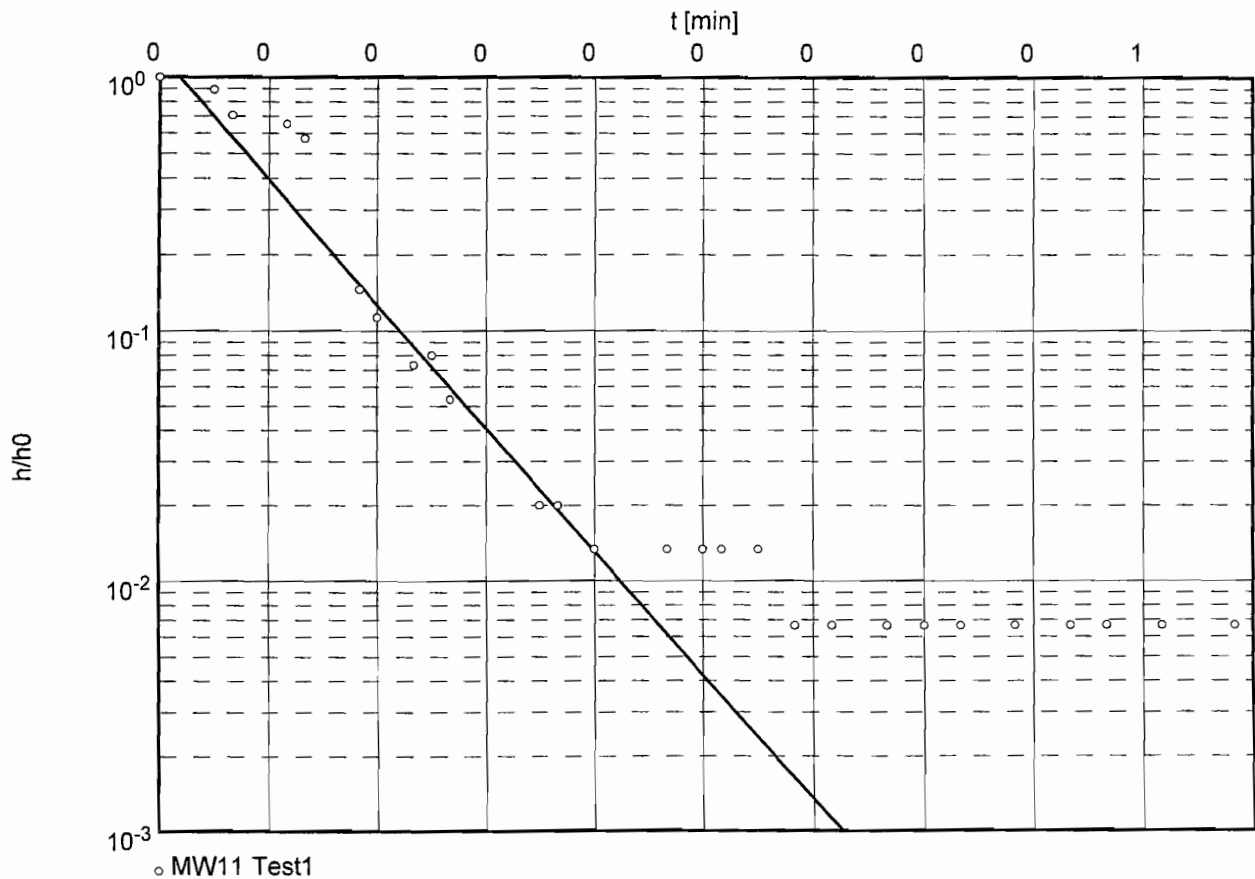
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 1

Test conducted on: 4/4/02

MW11



Hydraulic conductivity [ft/min]: 9.69×10^{-2}

[illegible]

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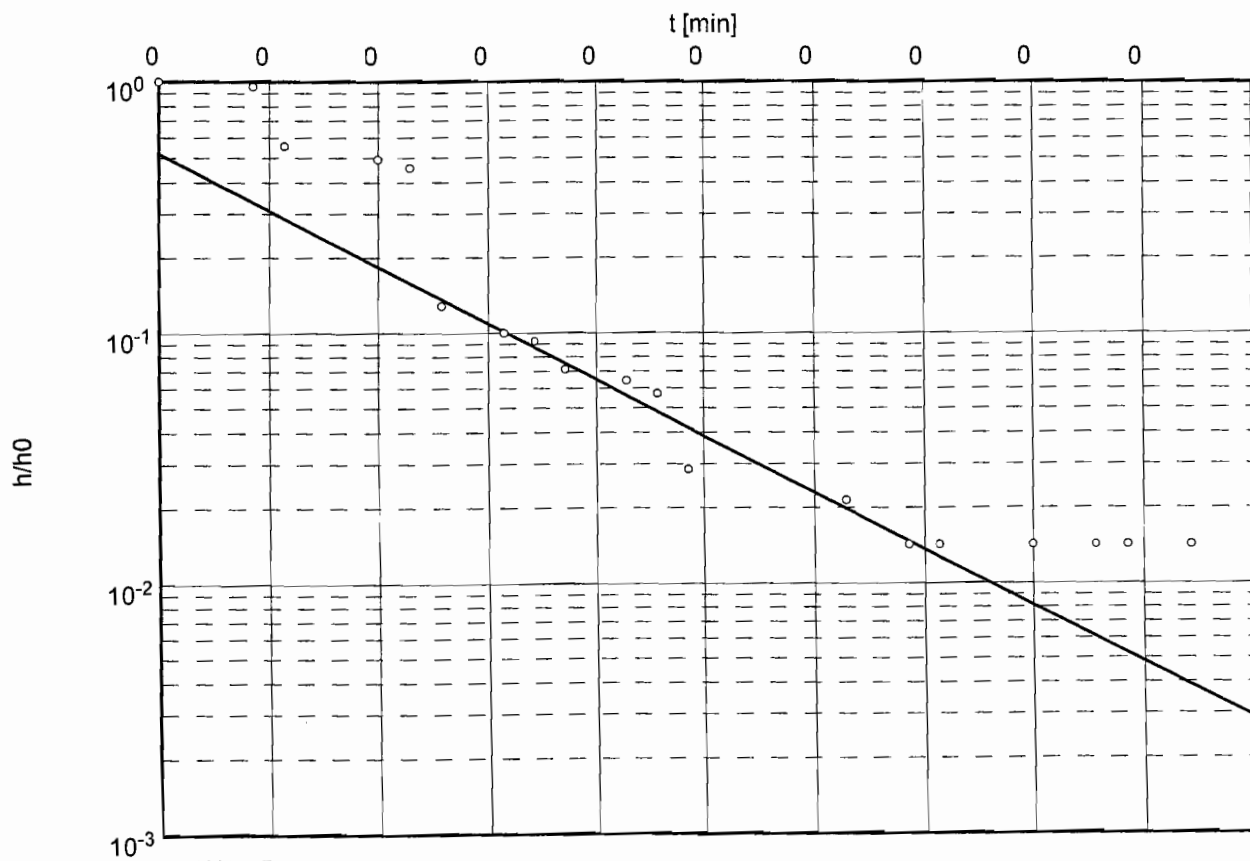
Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 2

Test conducted on: 4/4/02

MW11

Hydraulic conductivity [ft/min]: 7.40×10^{-2}

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Project: Computer Circuits

Evaluated by: C. Sosik

Slug Test No. 2

Test conducted on: 4/4/02

MW11

MW11 Test2

Static water level: 0.00 ft below datum

	Pumping test duration	Water level	Drawdown
	[min]	[ft]	[ft]
1	0.00	-1.40	-1.40
2	0.03	-1.34	-1.34
3	0.04	-0.78	-0.78
4	0.07	0.69	0.69
5	0.08	0.64	0.64
6	0.09	0.18	0.18
7	0.11	-0.14	-0.14
8	0.12	-0.13	-0.13
9	0.13	-0.10	-0.10
10	0.15	0.09	0.09
11	0.16	0.08	0.08
12	0.17	0.04	0.04
13	0.22	0.03	0.03
14	0.24	0.02	0.02
15	0.25	0.02	0.02
16	0.28	0.02	0.02
17	0.30	0.02	0.02
18	0.31	0.02	0.02
19	0.33	0.02	0.02
20	0.35	0.02	0.02
21	0.37	0.02	0.02
22	0.40	0.02	0.02
23	0.42	0.01	0.01
24	0.44	0.01	0.01
25	0.47	0.01	0.01
26	0.50	0.01	0.01
27	0.52	0.01	0.01
28	0.55	0.01	0.01
29	0.59	0.01	0.01

Appendix L

Field GC Data Sheets

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
1 SB-10 (0-5')	12/17/01	901	~~910~~ 12/17/01	910	Zeb	KK
2 SB-10 0-2'	12/17	924	~~932~~ 12/17/01	932	Zeb/BD	KK
3 SB-10 2-4'	12/17/01	935	12/17	936	Zeb/BD	KK
4 SB-10 4-6'	12/17/01	940	12/17/01	942	Zeb/BD	KK
5 SB-10 6-8'	12/17	945	12/17/01	947	Zeb/BD	KK
6 SB-10 8-10'	↓	950	↓	951	Zeb/BD	KK
7 SB-10 15-17'	↓	1015	↓	1020	Zeb	KK
8 SB-10 20-22'	↓	1040	↓	1043	Zeb/BD	KK
9 SB-10 25-27'	↓	1120	↓	1025	Zeb/BD	KK
10 SB-11 (0-2')	↓	1250	↓	1255	Zeb	KK
11 SB-11 (5-7')	↓	1305	↓	1306	Zeb	KK
12 SB-11 (10-12')	↓	1310	↓	1315	Zeb	KK
13 SB-11 3	↓	1300	↓	1315	Zeb	KK
14 SB-11 (15-17')	↓	1322	↓	1325	Zeb	KK
MS SB-11 (15-17) MS/MSD	↓	↓	↓	↓	Zeb	KK
MSD SB-11 (15-17) MS/MSD	↓	↓	↓	↓	Zeb	KK
13 SB-11 (20-22')	12/17/01	1337	↓	1337	Zeb	KK
14 SB-11 (25-27')	↓	1400	↓	1403	Zeb	KK
14 For Day						
14 Total						
MS/MSD / FIB / BD						
For 1-20						

TO H2

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
16 SB 12(02)	12/18/01	910	12/18/01	9:12	Zeb	KK
17 SB 12(2-4)	12/18/01	915	↓	9:16	Zeb/BAH	KK
18 SB 12(4-6)	12/18/01	922	↓	923	↓ Zeb/BAH	D.R
19 SB 12(6-8)	12/18/01	925	↓	926	Zeb	KK
20 SB 12(8-10)	12/18/01	930	↓	935	Zeb	KK
21 SB 12(15-17)	12/18/01	1035	↓	1040	Zeb	D.R
22 SB 12	12/18/01	1000	↓	1000	Zeb	D.R
23 SB 12(20-22)	12/18/01	1045	↓	1046	Zeb	D.R
24 SB 12(25-27)	12/18/01	1105	↓	1110	Zeb	D.R
25 SB-6 (02)	↓	1121	12/18/01	1130	Zeb	D.R
26 SB-6 (2-4)	↓	1125	↓	1130	Zeb	D.R
27 SB-6(4-6)	↓	1130	↓	1135	Zeb	D.R
SB-6 MS	↓	↓	↓	↓	↓	D.R
SB-6 MSD	↓	↓	↓	↓	↓	D.R
28 SB-6 6-8	↓	1140	↓	1150	Zeb	D.R
29 SB-6 8-10	↓	1145	↓	↓	Zeb	D.R
30 SB 6 15-17	↓	1330	↓	1335	Zeb	KK
31 SB 6 20-22	↓	1345	↓	1348	Zeb	KK
32 SB-7 25-27	↓	1415	↓	1404	Zeb	KK
33 SB-7(0-2)	↓	1421	↓	1429	Zeb	KK
34 SB 7(5-7)	↓	1433	↓	1442	Zeb	KK
35 SB 7(10-12)	↓	1440	↓	1442	Zeb	KK
36 SB-7(15-17)	↓	1450	↓	1505	Zeb	D.R
37 SB-7(20-22)	↓	1502	12/18/01	1505	Zeb	D.R
38 SB-7(25-27)	↓	1515	12/18/01	1520	Zeb	D.R
22 for day		MS/MSD/FB sent in for 21-40				
36 total		Samples to lab 3 total to lab 3				

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By	
37 SB-14(0-2)	12/19/01	950	12/19/01	952	Zeb	KK	2.
38 SB-14(5-7)	↓	1000	↓	1002	Zeb	KK	5.
SB-14(5-7)MS	↓	1000	↓	1002	Zeb	KK	
SB-14(5-7)MSD	↓	1000	↓	1002	Zeb	KK	
39 SB-14(10-12)	↓	1012	12/19/01	1014	Zeb	KK	6.
40 SB-14(15-17)	↓	1025	↓	1037	Zeb	KK	86
41 SB-14(20-22)	↓	1025	↓	1037	Zeb	KK	24
42 SB-15 0-2	↓	1113	12/19/01	1125	BD/24	KK	17
43 SB-15 2-4	↓	1117	↓	↓	↓	KK	60
44 SB-15 4-6	12/19/01	1124	12/19/01	1135	BD/24	KK	2.
45 SB-15 6-8	↓	1128	↓	↓	↓	KK	85
46 SB-15 8-10	↓	1135	↓	1145	↓	KK	45
47 SB-15 15-17	↓	1152	12/19	1220	↓	KK	61
SB-15(20-22)	12/19/01	1400	12/19/01	1406	Zeb	KK	110
SB-15(29-31)	12/19/01	1100	12/19/01	1104	Zeb	KK	607
SB-16(0-2)	12/19/01	1435	12/19/01	1450	Zeb/BD	KK	41.
SB-16(5-7)	↓	1445	↓	↓	Zeb/BD	KK	20.
51 SB-16(10-12)	↓	1455	12/19/01	1457	Zeb	KK	13
52 SB-16(15-17)	↓	1512	↓	1536	Zeb	KK	62
53 SB-16(20-22)	↓	1525	↓	1530	Zeb	KK	110
17 for Day				New MS/MSD collected for 21-40			
53 total				BD for 40-60 collected			
				Samples to lab			
2 Samples Submitted				SB-14(20-22)			
				SB-15(0-2)			

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
SB-17(02)	12/20	920	12/20	935	MB/zeb	KK
SB17 (0-2)MS	↓	↓	↓	↓	↓	KK
SB17 (0-2)MS	↓	↓	↓	↓	↓	KK
55 SB-17 (2-4)	12/20	922	↓	↓	↓	KK
56 SB-17 (4-6)	12/20/01	925	12/20	950	MB	KK
57 SB-17 (6-8)	↓	927	↓	↓	MB	KK
58 SB-17 (8-10)	↓	930	↓	↓	MB	KK
59 SB-17 (15-17)	↓	944	↓	↓	MB	KK
60 SB-17 (20-22)	12/20	952	12/20	957	MB	KK
61 SB-18 (0-2)	12/20/01	1053	12/20	1100	MB/zeb	KK
SB-18 (35-37)	12/20/01	1100	12/20	1100	MB	KK
62 SB-18 (5-7)	12/20/01	1106	12/20	1115	MB	KK
63 SB-18 (10-12)	12/20	1112	12/20	1115	MB	KK
SB-18 (10-12)MS	↓	↓	↓	↓	↓	KK
SB-18 (10-12)MS	↓	↓	↓	↓	↓	KK
64 SB-18 (15-17)	12/20	1125	12/20	1130	MB	KK
65 SB-19 (0-2)	↓	1246	↓	1310	MB	KK
66 SB-19 (2-4)	↓	1255	↓	↓	MB	KK
67 SB-19 (4-6)	↓	1258	↓	↓	MB	KK
68 SB-19 (6-8)	↓	1302	↓	↓	MB	KK
69 SB-19 (8-10)	↓	1308	↓	↓	MB	KK
70 SB-19 (15-17)	↓	1315	↓	↓	MB	KK
			70 to full	to FL		
			60-80	BD/MS/MSD	submitted	
			2 samples to	H ₂ M	7 to full	

51-60 Sample collected
61-70 Sample collected

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
70 SB-9 0-2	12/26/01	845	12/26	900	BD/2eb	D.R
71 SB-9 2-4	↓	850	↓	↓	↓	D.R
72 SB-9 4-6	↓	852	↓	↓	↓	D.R
73 SB-9 6-8	↓	855	↓	↓	↓	D.R
74 SB-9 (8-10)	12/26/01	859	12/26	909	2eb	D.R
75 SB-9 15-17	12/26	905	12/26	910	2eb	D.R
76 SB-9 (20-22)	12/26/01	925	12/26	927	2eb	D.R
77 SB-9 (25-27)	↓	935	↓	940	2eb	D.R
78 SB-8 0-2	12/26/01	948	12/26	1000	2eb/BD	D.R
79 SB-8 2-4	↓	950	↓	↓	↓	D.R
80 SB-8 4-6	12/26	952	↓	1030	2eb/BD	D.R
81 SB-8 6-8	↓	1028	↓	1031	2eb	D.R
82 SB-8 8-10	↓	1032	↓	1031	2eb	D.R
83 SB-8 (15-17)	↓	1100	↓	1112	2eb	D.R
84 SB-8 (20-22)	↓	1110	↓	1112	2eb	D.R
85 SB-8 (25-27)	↓	1120	↓	1130	2eb	D.R
86 SB-3 0-2	12/26	1146	12/26	1155	2eb	D.R
87 SB-3 2-4	↓	1150	↓	↓	↓	D.R
88 SB-3 10-12	↓	1158	↓	1215	2eb	D.R
89 SB-3 30-32	↓	1200	↓	1215	↓	D.R
90 SB-3 15-17	↓	1205	↓	1215	↓	D.R
91 SB-3 20-22	↓	1212	↓	1215	↓	D.R
92 SB-3 20-22 MS	↓	1212	↓	1215	↓	D.R
93 SB-3 20-22 (MS)	↓	1212	↓	1215	↓	D.R
94 SB-3 25-27	↓	1225	12/26	1230	↓	D.R
95 SB-2 0-2	12/26	1327	↓	1335	↓	D.R
96 SB-2 2-4	↓	1326	↓	↓	↓	D.R
97 SB-2 4-6	↓	1330	↓	↓	↓	D.R
98 SB-2 6-8	↓	1333	↓	1335	↓	D.R

pg 2 of 2

Field GC COC Log

[illegible] $a \parallel HS \text{ and } l$

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
01 SB-4 (0-2)	12/27/01	855	12/27	920	ZCS	D.R.
02 SB-4 (5-7)	✓	902	✓	930	ZCS	D.R.
03 SB-4 (10-12)	✓	912	✓	916	ZCS	D.R.
04 SB-4 (15-17)	✓	920	✓	930	ZCS	D.R.
05 SB-4 (15-17)MS	✓	920	✓	930	ZCS	D.R.
06 SB-4 (15-17)MSD	✓	920	✓	930	ZCS	D.R.
07 SB-4 (20-22)	✓	920	✓	930	ZCS	D.R.
08 SB-4 (25-27)	✓	940	✓	942	ZCS	D.R.
106 SB-1 (0-2)	✓	955	✓	1015	ZCS	D.R.
107 SB-1 (5-7)	✓	1000	✓	1015	ZCS	D.R.
108 SB-1 (30-32)	✓	1200	✓	1015	ZCS	D.R.
109 SB-1 (10-12)	✓	1007	✓	1015	ZCS	D.R.
110 SB-1 (15-17)	✓	1015	✓	1042	ZCS	D.R.
111 SB-1 (20-22)	✓	1040	✓	1042	ZCS	D.R.
112 SB-1 (25-27)	✓	1050	✓	1052	ZCS	D.R.
113 SB-5 0-2	1103 12/27	1103	12/27	1115	ZCS	D.R.
114 SB-5 2-4	1105	1105	✓	✓	ZCS	D.R.
115 SB-5 4-6	1108	1105	✓	✓	ZCS	D.R.
116 SB-5 6-8	1112	1112	✓	✓	ZCS	D.R.
117 SB-5 8-10	✓	1115	✓	1122	ZCS	D.R.
118 SB-5 15-17	✓	1120	✓	1122	ZCS	D.R.
119 SB-5 20-22	12/27	1135	12/27	1140	ZCS	D.R.
120 SB-5 25-27	12/27	1145	12/27	1150	ZCS	D.R.
		20 Field Samples today				
		119 total				
		9/100 - 119 BD/MS/MSD performed				
		2 lab samples				

1/2/02

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
20 SB-20 (15-17)	1/2/02	921	1/2/02	925	ME	D.R
21 SB-20 (17-19)	↓	929	↓	937	EDS	D.R
22 SB-20 (19-21)	↓	935	↓	937	EDS	D.R
23 SB-20 (21-23)	1/2/02	940	1/2/02	955	ME	D.R
24 SB-20 (23-25)	↓	951	↓	955	EDS	D.R
25 SB-20 (25-27)	↓	1002	↓	1010	EDS	D.R
26 SB-20 (27-29)	↓	1130	↓	1133	EDS	D.R
27 SB-20 (29-31)	↓	1130	↓	1130	EDS	D.R
28 SB-20 (31-33)	↓	1130	↓	1135	EDS	D.R
29 SB-21 8-10	1/2/02	1322	1/2/02	1340	ME	D.R
30 SB-21 11-13	↓	1210	↓	↓	↓	D.R
31 SB-21 10-12	↓	1330	↓	↓	↓	D.R
32 SB-21 12-14	1/2/02	1340	1/2/02	1400	ME	D.R
33 SB-21 14-16	↓	1350	↓	↓	↓	D.R
34 SB-21 16-18	1/2/02	1400	1/2/02	1405	ME	D.R
35 SB-21 21-23	↓	1415	↓	1420	EDS	D.R
36 SB-21 26-28	1/2/02	1500	1/2/02	1520	ME	D.R
14 To Field GC for day						
133 Total						
121-130 Sample collected						
120-140 MS/MSD + 13D collected						

all #5 + 1

Field GC COC Log

3 4/02
1 302

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
3 ⁷⁰ SB 28 (9-11) 0-2	1/3/02	940	1/3/02	950	ZEB	D.R.
135 SB 28 5-7		947		950		D.R.
136 SB 28 10-12		1000		1005		D.R.
137 SB 29 0-2		1004		1010		D.R.
138 SB 29 5-7		1006		1015	✓	D.R.
139 SB 29 10-12		1015		1017	Zeb	D.R.
140 SB 25 0-2	1/3/02	1045	1/3/02	1050	Zeb	D.R.
141 SB 25 5-7	1/3/02	1050	1/3/02	1055	Zeb	D.R.
142 SB 25 (10-11)		1057		1100	Zeb	D.R.
143 SB 26 0-2	↓	1103	1/3/02	1105	Zeb	D.R.
144 SB 26 5-7	1/3/02	1107	1/3/02	1110	Zeb	D.R.
145 SB 26 10-12		1121	↓	1125	Zeb	D.R.
44 SB 26 20-22		1130	↓	1125	Zeb	D.R.
44 SB 27 0-2	1/3/02	1133	1/3/02	1150	Zeb	D.R.
44 SB 27 5-7	↓	1137	↓			D.R.
44 SB 27 5-7 MS	↓	↓	↓			D.R.
44 SB 27 10-12 MS	↓	↓	↓			D.R.
48 SB 27 10-12	↓	1145	↓	↓	↓	D.R.
149 SB 35 0-2	↓	1155	↓	1205	Zeb	D.R.
50 SB 35 5-7	↓	1200	↓	↓	↓	D.R.
51 SB 35 10-12	↓	1210	↓	1215	Zeb	D.R.
52 SB 36 5-7	↓	1340	↓	1355	Zeb	D.R.
153 SB 36 10-12	↓	1350	↓	↓	↓	D.R.
54 SB 36 15-17	↓	1410	↓	1415	↓	D.R.
21 To Field GC						
154 Total						
3 Samples to lab 131-140, 141-150, 151-160						
H2M MS/MSD + BD collected						
Onsite 141-160 MS/MSD + BD collected						

all HS + I

all +1

Field GC COC Log

[illegible]

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
SB 24 3-5	1/10/02	832	1/10/02	835	13D	KK
183 SB 24 8-10	↓	840	↓	852	↓	KK
184 SB 24 13-15	↓	850	↓	↓	↓	KK
185 SB 23 5-7	1/10/02	903	↓	910	↓	KK
186 SB 23 10-12	↓	910	↓	922	205	KK
87 SB 23 15-17	↓	917	↓	922	200	KK
188 SB 38 0-2	1/10/02	936	↓	940	740	KK
189 SB 38 0-2	↓	↓	↓	↓	↓	
189 SB 38 0-2	↓	↓	↓	↓	↓	
189 SB 38 5-7	1/10/02	940	1/10/02	955	740	KK
190 SB 38 10-12	↓	950	↓	↓	↓	KK
SB 38 20-22	↓	1130	↓	↓	↓	KK
190 SB 39 0-2	↓	1000	↓	1005	740	KK
191 SB 39 5-7	↓	1003	↓	↓	200	KK
192 SB 39 10-12	↓	1015	↓	1017	200	KK
193 SB 13 8-10	1/10/02	1050	1/10/02	1110	13D	KK
195 SB 13 10-12	↓	1055	↓	↓	↓	KK
196 SB 13 12-14	↓	1100	↓	↓	↓	KK
197 SB 13 14-16	↓	1105	↓	↓	↓	KK
198 SB 41 0-2	1/10/02	1133	1/10/02	1150	740	
199 SB 41 5-7	↓	1135	↓	↓	↓	
200 SB 41 10-12	↓	1145	↓	↓	↓	
201 SB 40 0-2	1/10/02	1200	↓	1205	13D	KK
202 SB 40 5-7	1/10/02	1205	1/10/02	1207	13D	KK
203 SB 40 10-12	1/10/02	1210	↓	1211	740	KK
204						

Field GC COC Log

	Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
	SDB-1 0-2	1/15/02	835	1/15/02	840	AD	LL
206	SDB-1 5-7	↓	845	↓	846	TAR	LL
207	SDB-1 10-12	↓	855	↓	856	TAR	LL
	SDB-1 3-5	↓	838	↓	↓	TAR	KK
08	SDB-1 16-17	↓	905	↓	910	TAR	KK
209	SDB-1 15-17	↓	905	↓	↓	↓	KK
MS	SDB-1 15-17 MS	↓	↓	↓	↓	↓	CK
MS	SDB-1 15-17 MSD	↓	↓	↓	↓	↓	KK
210	SDB+20-22	1/15/02	923	↓	925	ZAS	KK
211	SDB-1 25-27	1/15/02	935	↓	1005	BD	KK
212	SDB-1 30-32	↓	950	↓	↓	↓	KK
213	SDB-1 35-37	↓	1020	↓	1025	↓	KK
214	SDB-1 40-47	↓	1115	↓	1120	BD	KK
215	SDB-1 50-52	↓	1350	↓	1351	BD	KK
216	SDB-1 60-62	↓	1435	↓	1436	↓	KK
			42 Samples to Site Id Lab 216 total				
			200-219 MS/MSD/BD collected				
			200-209 + 210-219 sample for H2M collected				

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
18 SDB-20-2	1/16/02	835	1/16/02	836	BD	KK
19 SDB-25-2	1/16/02	842	↓	845	BD	KK
20 SDB-210-12	1/16/02	855	↓	859	BD	KK
21 SDB-213-17	1/16/02	905	1/16/02	910	BD	KK
22 SDB-2(20-22)	1/16/02	920	1/16/02	922	BD	KK
SDB-2(20-27)	↓	942	↓	945	BD	KK
SDB-2(20-27)MS	↓	947	↓	945	BD	KK
SDB-2(20-27)MS	↓	945	↓	945	BD	KK
SDB-2 26-29	↓	912	↓	1010	BD	KK
23 SDB-2 30-31	↓	1005	↓	1010	↓	KK
24 SDB-2 32-37	1	1025	1	1027	BD	KK
25 SDB-40-42	1	1050	1	1052	BD	KK
26 SDB-50-52	1	1122	1	1125	BD	KK
SDB-60-62	↓	1440	↓	1445	BD	KK

11 for Day
227 Total

220 - 239 MS/MSD/BC
collected
220-230 Sample collected

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
28-4 (0-2)	11/17/02	825	11/17/02	826	208	KK
29 28-4 (5-7)	/	830	/	831	209	KK
30 SDB-4 (10-2)	/	835	/	837	209	KK
31 SDB-4 (15-4)	/	845	/	847	209	KK
32 SDB-4 20-22	/	905	/	907	209	KK
33 SDB-4 25-27	/	915	/	917	209	KK
34 SDB-4 30-32	/	940	/	942	209	KK
35 SDB-4 35-37	/	958	/	959	209	KK
36 SDB-4 40-42	/	1037	/	1039	209	KK
37 SDB-4 50-52	/	1055	/	1058	209	KK
38 SDB-4 61-62	/	1108	/	1136	209	KK
39 SB-42 (0-2)	/	1200	/	1201	209	KK
40 SB-42 5-7	/	1205	/	1214	209	KK
41 SDB-42 6-12	/	1210	/	1211	209	KK
42 SB-43 16-18	/	1330	/	1331	209	KK
43 SB-43 (23-25)	/	1441	/	1442	209	KK
44 SB-43 28-30	/	1533	/	1535	209	KK
45 SB-43 33-35	/	1545	/	1547	209	KK

2x Samples to #2M (COC# 3270)

Field GC COC Log

Sample ID	Date Collected	Time Collected	Date Relinquished	Time Relinquished	Relinquished By	Received By
SDB-3(15-17)	2/14/02	1400	2/14/02	1405	DF	KE
247 SDB-3 20-22	2/14/02	1430	↓	1432	↓	KE
250 SDB-3 25-27	↓	1445	↓	1450	↓	KE
251 SDB-3 30-32	2/14/02	1450	↓	1452	↓	KE
252 SDB-3 35-37	↓	1510	↓	1511	↓	KE
253 SDB-3 40-42	2/14	1520	↓	1525	↓	KE
254 SDB-3 45-47	↓	1535	↓	1540	↓	KE
255 SDB-3 50-52	↓	1550	↓	1555	↓	KE
— SDB-3-MS 50-52	↓	1550	↓	1555	↓	KE
— SDB-3-MSD 50-52	↓	1550	↓	1555	↓	KE
256 SDB-3 55-57	2/15	755	2/15	800	BD	KE
257 SDB-3 65-67	↓	810	↓	825	BD	KE
SDB-3 67-69	↓	820	↓	↓	↓	KE
258 SDB-3 75-77	↓	845	↓	850	↓	KE
259 SDB-3 85-87	↓	940	↓	945	↓	KE
260 SDB-3 97-99	↓	1025	↓	1030	↓	KE
261 SDB-3 105-107	↓	1100	↓	1110	↓	KE
262 SDB-3 115-117	↓	1215	↓	1220	DF	KE
263 SDB-3 125-127	↓	1230	↓	1235	↓	KE
264 SDB-3 135-137	↓	1345	↓	1346	↓	KE
265 SDB-3 145-147	↓	1410	↓	1420	↓	KE
266 SDB-3 155-157	↓	1430	↓	1435	↓	KE
267 SDB-3 165-167	↓	1450	↓	1452	↓	KE
(240-260 Field BD MS/MSD collected)						
268 SDB-3 175-177	2/19	905	2/19/02	910	BD/240	KE
SDB-3 0-2	↓	905	↓	↓	↓	KE
269 SDB-3 185-187	2/19	920	2/19	925	BD/240	KE
SDB-3 185 MS	↓	↓	↓	↓	↓	KE
SDB-3 185 MSD	↓	↓	↓	↓	↓	KE
270 SDB-3 195-197	2/19	940	2/19	950	BD	KE

Sample	Sample ID	Collected		Relinquished		Relinquished By	Received by
		Date	Time	Date	Time		
272	GW VP-5 113-114	2/20	1220	2/20	1225	BD	
273	VP-5 118-119	↓	1325	↓	1335	↓	
274	VP-5 123-124	↓	1415	↓	1420	742	
275	VP-5 128-129	↓	1500	↓	1505	BD	
276	GW VP-5 133-134	2/20	1540	1	1545	270	
277	GW VP-5 138-139	2/21	810	2/21	815	BD	
278	GW VP-5 143-144	↓	900	↓	905	BD	
279	GW VP-5 148-149	↓	935	2/21	950	BD	
280	GW VP-5 153-154	↓	1030	↓	1035	BD	
281	GW VP-5 158-159	↓	1130	↓	1133	740	
282	GW VP-5 163-164	↓	1240	↓	1245	BD	
283	GW VP-5 168-169	↓	1330	↓	1335	↓	
284	GW VP-5 173-174	↓	1420	↓	1425	BD	

Sample #	Sample ID	Collected Date/Time	Relinquished Date/Time	Rec By
285	GW VP-3 (103-104) (Attempt 1) Attempt 2	1345 2/27 1502	1430 2/27	170
286	GW VP-3 (108-109)	1530 2/27	1531 2/27	170
287	GW VP-3 (113-114)	2/28 830	2/28 835	170
	GW VP-3 (113-114) MS	2/28 830	2/28 835	170
	GW VP-3 (113-114) MS	2/28 830	2/28 835	170
288	GW VP-3 (118-119)	2/28 925	2/28 930	170
	GW VP-3 (123-124)	2/28 1015	2/28 1020	170
289	GW VP-3 (123-124)	2/28 1045	2/28 1045	170
	GW VP-23 (123-124)	2/28 1045	2/28 1045	170
	2/28 HP F13	2/28 945	2/28 950	170

290-300 Field MS/MSD/BD collected

Sample #	Sample ID	Collected date/Time	Relinquished date/time	Relg. by	Rec. date
290	GWVP-4(102-103)	3/4/02 1020	3/4/02 1025	DL	KG
	VP4 0.95 50.1 Cuttings			74	KG
291	GWVP-4(107-108)	3/4 1050	3/4 1051	74	KG
292	GWVP4(112-113)	3/4 1125	3/4 1130	74	KG
293	GWVP4(117-118)	3/4 1210	3/4 1215	74	KG
294	GWVP4(122-123)	3/4 1310	3/4 1315	74	KG
	VP4 Cuttings 90-120				
295	GWVP4(127-128)	3/4 1430	3/4 1435	74	KG
296	GWVP4(132-133)	3/4 1520	3/4 1525	74	KG
297	GWVP4(137-138)	3/4 1600	3/4 1605	74	KG
301	GWVP4(142-143)	3/5 840	3/5 845	74	KG
302	GWVP4(147-148)	3/5 915	3/5 920	74	KG
	GWVP24(147-148)	3/5 915	3/5 920	74	KG
303	GWVP4(152-153)	3/5 955	3/5 1000	74	KG
	GWVP4(152-153) MS	↓ ↓	↓ ↓	74	KG
	GWVP4(152-153) MS	↓ ↓	↓ ↓	74	KG

4 Samples to H2M CoC# 2499

300-320 Field QA/QC Done

Sample #	Sample L1)	Collected date / Time	Received date / time	releas. by	rec by

304	VP-2 0-70 cuttings	3/6 1115	3/6 1120	TK	kk

304	GWVP-2 (97-98)	3/6 1225	3/6 1230	TK	kk

305	GWVP-2 (102-103)	3/6 1310	3/6 1315	TK	kk

306	GWVP-2 (107-108)	3/6 1410	3/6 1415	TK	kk

307	GWVP-2 (112-113)	3/6 1450	3/6 1500	TK	kk

308	GWVP-2 117-118	3/7 815	3/6 820	TK	kk

309	GWVP-2 122-123	3/7 925	3/6 925	TK	kk

Cuttings 110-130

310	GWVP-2 127-128	1025	3/6 1030	TK	kk

311	GWVP-2 132-133	1100	3/6 1115	TK	kk

Sample	Sample I D	Collected date / Time	received date / Time	relig.	Rec
12	GW VP-1 (97-98)	3/11 800	3/11 820	TK	KK
	GW VP-1 97-98 MS	↓	↓		
	GW VP-1 97-98 MS	↓	↓	↓	
	VP-1 0-95 cuttings				
315	GW VP-1 (102-103)	3/11 835	3/11 840	TK	KK
	GW VP-11 (95-97)				
316	GW VP-1 (107-108)	3/11 905	3/11 930	TK	KK
317	GW VP-1 (112-113)	3/11 955	3/11 1000	TK	KK
318	GW VP-1 (117-118)	3/11 1030	3/11 1035	TK	KK
319	SB 44 0-2	3/11 1040	3/11 1045	TK	KK
	SB 44 5-7	3/11 1050	3/11 1055	TK	KK
321	GW VP-1 (122-123)	3/11 1105	3/11 1108	TK	KK
322	SB 44 10-12	3/11 1105	3/11 1110	TK	KK
323	SB 45 0-2	3/11 1140	3/11 1143	TK	KK
324	GW VP-1 (127-128)	3/11 1140	3/11 1145	TK	KK
325	SB 45 5-7	3/11 1150	3/11 1155	TK	KK
326	SB 45 (10-12)	3/11 1200	3/11 1202	TK	KK
327	VP-1 (132-133)	3/11 1210	3/11 1211	TK	KK
328	SB 46 0-2	1250	1305	TK	KK
329	SB 46 5-7	1255	↓	↓	
330	SB 46 10-12	1300	1305	TK	KK
331	VP-1 137-138	1400	1405	TK	KK
333	SB 47 0-2	3/11 1410	1425	TK	KK
334	SB 47 5-7	1420	↓	↓	
335	SB 47 10-12	1530	1540	TK	KK
336	↓ 0-2	1535	↓	↓	
337	↓ 5-7	1540	1540	TK	KK
338	↓ 10-12	↓	↓	↓	

3/11/02
1130
COC
3766

Appendix M

SDG Narratives / Data Validation Reports

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

February 22, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG002

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected at the Computer Circuits site December 17, 2001 through December 26, 2001. Sixteen soil samples were analyzed for site specific volatiles and semivolatiles, TAL metals, cyanide, and tin. Field and trip blanks, and matrix spikes/duplicates were also processed.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24, HW-22, and HW-2. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicate Correlation
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and results data are usable as reported, with exception of minor edit or qualification as estimated.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

Volatile Analyses by EPA 8260B

Results for analytes initially reported with the "E" flag should be derived from the dilution ("-DL") analysis of the given sample. All other results for the given sample can be used from the initial analysis, unless noted otherwise herein.

Detected results for sample SB-12(6-8) (use initial analysis), and detected results which are derived from the initial analysis of sample SB-15(0-2), are to be qualified estimated ("J"), possibly biased high, due to elevated recoveries of surrogate BFB (117% and 114%, above 113% limit).

Holding time and instrumental tunes were within required limits. Field and trip blanks showed no target analyte contamination. Several method blanks contained low levels of methylene chloride. All sample methylene chloride detections are within validation action limits, and they are edited to be nondetections at either the CRDL, or the originally reported concentration, whichever is greater.

Calibration standard responses were compliant with protocol. They were within action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

SB-8(4-6) and SB-9(4-6) cis-1,3-dichloropropene and trans-1,3-dichloropropene
SB-6(2-4), SB-14(20-22), SB-17(2-4), SB-18(5-7), SB-2(4-6), and SB-59(4-6)-chloromethane,
2-butanone, 2-hexanone, 4-methyl-2-pentanone, and toluene

Matrix spikes of SB-8(4-6) showed acceptable accuracy and precision, with the exception of one elevated duplicate correlation for an analyte not detected in the sample, and the exception that toluene showed poor recovery for toluene, with values below those of the sample. This may indicate a lack of homogeneity in the sample constituency. Spiked blank recoveries were acceptable.

Blind field duplicate correlation between SB-9(4-6) and SB-59(4-6) was acceptable (below 25%RPD), with the exception of a variance in detected concentrations of acetone (values of 30 ppb and 13 ppb). Variance in concentrations of ketones is observed in samples containing high concentrations of organic carbon with the use of Encore samplers (method 5035), due to an apparent reaction between the preservative and certain organic components.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analytical artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

Semivolatile Analyses

Holding times, instrumental tunes, and method and field blank responses were within required laboratory and validation limits.

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

Matrix spikes of soil sample SB-8(4-6) showed acceptable accuracy and precision. Spiked blank recoveries, and blind field duplicate correlation between SB-9(4-6) and SB-59(4-6), were also acceptable.

Calibration standard responses were compliant with protocol. They were within action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

SB-6(2-4), SB-10(4-6), SB-12(6-8), SF-DB-4(0-0.5), SF-6(0-.5), SF-10(0-.5), SF-11(0-.5), and SF-12(0-.5)--benzo(b)fluoranthene
SB-14(20-22), SB-15(0-2), SB-17(2-4), and SB-18(5-7)--hexachlorocyclopentadiene

Tentatively Identified Compounds (TICs) which are flagged as "A" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

Please note that TIC results for compounds characterized as alkanes are listed separately in the data package with the case narrative, as required by protocol.

Metals Analyses

The mercury result for sample SB-9(4-6) was not entered onto the report Form 1-IN. The raw data shows nondetection ("U") at a reporting limit of 0.056 mg/kg.

Accuracy and precision evaluations of SB-8(4-6) showed outlying recoveries outside the acceptable 75% to 125% range for antimony (67%) and lead (224%). Results for these two analytes in the samples in this SDG are therefore qualified as estimated ("J" or "UJ").

ICP serial dilution evaluation of soil sample SB-8(4-6) showed elevated correlation for sodium (46%D), and results for sodium in these project samples are qualified estimated ("J"). Although serial dilution evaluations are used to evaluate potential matrix effect, this variance is likely more due to the fact that the responses in the sample, although above a limit of 50 times the IDL, are still below the CRDL.

Blind field duplicate correlation between SB-9(4-6) and SB-59(4-6) was acceptable.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,



Judy Harry

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY
NYS DEC

SDG NO.: PWG002

SAMPLES RECEIVED: 12/18/01, 12/20/01 & 12/26/01

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS	*BNA GC/MS	*HERB	PCB	*METALS	OTHER
SB-6 (2'-4')	0112532-001	X	X			X	
SB-10 (4'-6')	0112532-002	X	X			X	
SB-12 (6'-8')	0112532-003	X	X			X	
SF-DB-4 (0'-0.5')	0112532-004	X	X			X	
SF-6 (0'-0.5')	0112532-005	X	X			X	
SF-10 (0'-0.5')	0112532-006	X	X			X	
SF-11 (0'-0.5')	0112532-007	X	X			X	
SF-12 (0'-0.5')	0112532-008	X	X			X	
BOWL SPOON FIELD BLANK 12/17	0112532-009	X	X			X	
TRIP BLANK 12/17	0112532-010	X	X			X	
SB-14 (20'-22')	0112645-001	X	X			X	
SB-15 (0'-2')	0112645-002	X	X			X	
SB-17 (2'-4')	0112645-003	X	X			X	
SB-18 (5'-7')	0112645-004	X	X			X	
TRIP BLANK 12/20	0112645-005	X	X			X	
SB-2 (4'-6')	0112711-001	X	X			X	
SB-8 (4'-6')	0112711-002	X	X			X	
SB-9 (4'-6')	0112711-003	X	X			X	
SB-59 (4'-6')	0112711-004	X	X			X	
TRIP BLANK 12/26	0112711-005	X	X			X	

* Check Appropriate Boxes

* CLP, ~~Non-CLP~~ (Please indicate year of protocol) ASP @ 10/95

* TCL/TAL, HCL, TS

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

February 28, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG003

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected at the Computer Circuits site December 27, 2001 through January 3, 2002. Seven soil samples were analyzed for site specific volatiles and semivolatiles, TAL metals, cyanide, and tin. Field and trip blanks, and matrix spikes/duplicates were also processed.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24, HW-22, and HW-2. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicate Correlation
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and results data are usable as reported, with exception of minor edit or qualification as estimated.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

Volatile Analyses by EPA 8260B

Holding time and instrumental tunes were within required limits. Trip blanks showed no target analyte contamination. Several method blanks contained low levels of methylene chloride. All sample methylene chloride detections are within validation action limits, and they are edited to be nondetection at either the CRDL, or the originally reported concentration, whichever is greater.

Calibration standard responses were compliant with protocol. They were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

SB4(10-12) and SB5(8-10)-chloromethane, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone, and toluene

SB26(5-7), SB28(5-7), SB35(5-7), SB56(5-7), and SB21(8-10) -chloromethane, vinyl chloride, trans-1,3-dichloropropene, 4-methyl-2-pentanone, bromoform, 2-hexanone, tetrachloroethene, and toluene

Both Trip Blanks -chloromethane, bromomethane, vinyl chloride, chloroethane, carbon disulfide, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection.

Matrix spikes of SB-28(5-7) showed acceptable accuracy and precision. Blanks spiked with all analytes showed acceptable recoveries.

Blind field duplicate correlation between SB-26(5-7) and SB-56(5-7) was acceptable, with the exception of a variance in detected concentrations between 1,2-dichloroethene(total) (53 ppb and 6 ppb), and trichloroethene (120 ppb and 9 ppb). Results for these analytes in those two samples, and others of similar matrix should be used with caution.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

Semivolatile Analyses

Holding times, instrumental tunes, and method and field blank responses were within required laboratory and validation limits.

Batch QC matrix spikes showed acceptable accuracy and precision, and the spiked blank showed acceptable recoveries for all target analytes.

Blind field duplicate correlation between SB-26(5-7) and SB-56(5-7) was acceptable.

Calibration standard responses were compliant with protocol. They were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in all samples in this SDG:

4-chloroaniline, hexachlorocyclopentadiene, 3-nitroaniline, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, 3,3'-chlorobenzidine, benzo(b)fluoranthene, and benzo(k)fluoranthene

Tentatively Identified Compounds (TICs) which are flagged as "A" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

Please note that TIC results for compounds characterized as alkanes are listed separately in the data package with the case narrative, as required by protocol.

Metals Analyses

Accuracy and precision evaluations of SB-28(5-7) showed outlying recoveries outside the acceptable 75% to 125% range for lead (154%). Results for this analyte in the samples in this SDG are therefore qualified as estimated ("J" or "UJ"). This analyte also shows a slightly low recovery (79%) for a CRI standard (no corrective action was required).

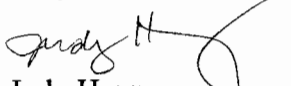
The result for thallium in SB-56 (5-7) is qualified estimated ("J"), with a very slight high bias, due to an elevated recovery (121%, above validation limit of 120%) of the associated CRI standard.

ICP serial dilution evaluation of soil sample SB-28(5-7) showed correlations below 10%D for results above 50 times the IDL.

Blind field duplicate correlation between SB-26(5-7) and SB-56(5-7) was acceptable.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,


Judy Harry

SDG NO.: PWG003
SAMPLES RECEIVED: 12/18/01, 12/27/01 & 1/3/02

[illegible]

* Check Appropriate Boxes

* CLP, Non-CLP (Please indicate year of protocol) ASP B 10/95

* TCL/TAL, HCL, TS

Data Validation Services

120 Cobble Creek Road P. O. Box 208

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Facsimile 518-251-4428

March 3, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG004

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 1/9/02 through 1/17/02 at the Computer Circuits site. Eleven soil samples were analyzed for site specific volatiles and semivolatiles, TAL metals, cyanide, and tin. Trip blanks and matrix spikes/duplicates were also processed.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24, HW-22, and HW-2. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicate Correlation
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and most results data are usable as reported, or with minor edit or qualification as estimated. The exceptions are that there are no usable results for the acid compounds in sample SB-31(0-2), and the results for the volatile analysis for sample SDB1(60-62) are rejected, although potentially usable, with special consideration as documented below.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

Volatile Analyses by EPA 8260B

Sample SDB-1(60-62) was initially analyzed 2 minutes past an acceptable timeframe of 12 hour (720) minutes from the BFB instrument tune. The laboratory correctly reanalyzed the sample, but that analysis showed low outlying recoveries for all internal standards and two surrogate standards not observed in the initial analysis. There was no additional sample (Encore) available for a third analysis. Although the extended time from tune ($< 0.3\%$) may not be significant, the Region II validation SOPs require rejection (all qualified "R", with no usable data) of that analysis. The responses for internal and surrogate standards in the reanalysis would involve rejection of results for nine analytes, and qualification of the others as estimated. Fortunately, the BFB tune compound is also a surrogate standard processed in each sample. Upon request, the laboratory evaluated the fragmentation of BFB in the initial analysis of the sample and proved the instrument to be in tune during that analysis (see attached). Therefore, the reported results from the initial analysis have been flagged as rejected ("R"), per validation requirements, but also footnoted as usable by exception. Following the edit of acetone to nondetection, discussed below, this sample showed no detection of target analytes in both analyses.

Sample SB-13(23-25) showed low response for internal standard 1,4-difluorobenzene. No reanalysis is possible (the other aliquot failed to purge). The results for the following analytes in the samples are therefore qualified estimated ("J" or "UJ"): 1,1,1-trichloroethane, carbon tetrachloride, bromodichloromethane, 1,2-dichloropropane, cis-1,3-dichloropropene, trichloroethane, benzene, dibromochloromethane, trans-1,3-dichloropropene, 1,1,2-trichloroethane, and bromoform

Method blanks showed detection of methylene chloride, and trip blanks showed detection of acetone at compliant levels. Those sample detections below ten times that of the associated blank are edited to nondetection at either the CRDL, or the originally reported concentration, whichever is greater. Affected samples are methylene chloride in all samples, and acetone in SDB-1(15-17), SDB-1(60-62)RE, SDB-2(40-42), SDB-4(50-55), and SDB-13(23-25).

Matrix spikes of SB-23(5-7) showed acceptable accuracy and precision, with the exception elevated recoveries for trichloroethene (168% for both, above 137%). The sample reports detection of that analyte at concentration about equal to that of the spike. That value may be biased slightly low. Blanks spiked with all analytes showed acceptable recoveries.

Blind field duplicate correlation between SB-39(5-7) and SB-69(5-7) was acceptable. Holding times were within required limits.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

Marcus Blvd Catch Basin, SB23(5-7), SB32(5-7), SB39(5-7), SB69(5-7), SB31(0-2), and SDB1(60-62) --acetone, 1,1-dichloroethene, carbon disulfide, carbon tetrachloride, tetrachloroethene, and toluene

SDB1(15-17), SDB2(40-42), SDB4(50-52), and SB13(23-25) --chloromethane, bromomethane, chloroethane, 1,1-dichloroethane, bromoform, 4-methyl-2-pentanone, tetrachloroethene, and styrene

Trip Blanks - acetone and 1,2-dichloroethene (total)

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

Semivolatiles Analyses

Results for acid compounds (phenolics) in sample SB31(0-2) are not usable ("R" qualifier), as reflected by the acid surrogate recovery failures (0% to 4%) shown with repeated extraction. Base neutral analyte results are not affected.

Holding times, instrumental tunes, and method and field blank responses were within required laboratory and validation limits. The surrogate recovery calculation was adjusted for some samples that were extracted at lower volumes (see lab case narrative).

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

Matrix spikes of SB23(5-7) and the spiked blank showed acceptable accuracy and precision, with the exception of elevated recoveries of an analyte (4-nitrophenol) not detected in the samples.

Blind field duplicate correlation between SB-39(5-7) and SB-69(5-7) was acceptable.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte results as estimated in all samples --2,4-dinitrophenol, 4-chloroaniline, hexachlorocyclopentadiene, 3-nitroaniline, 3,3'-chlorobenzidine and benzo(b)fluoranthene

The detection of di-n-butylphthalate in Marcus Blvd Catch Basin is qualified as tentative ("NJ") in identification due to poor spectral quality.

Tentatively Identified Compounds (TICs) which are flagged as "A" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

Please note that TIC results for compounds characterized as alkanes are listed separately in the data package with the case narrative, as required by protocol.

Metals Analyses

Accuracy and precision evaluations of SB-23(5-7) showed outlying recoveries outside the acceptable 75% to 125% range for antimony (57%), arsenic (-66%), and tin (74%). Results for these analytes in the samples in this SDG are therefore qualified as estimated ("J" or "UJ"). Manganese showed an elevated duplicate correlation (38%RPD). No qualification is required for that analyte.

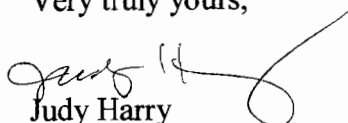
The result for selenium in SDB-2(40-42), SDB-4(50-52), SDB-1(15-17), SB-13(23-25) is qualified estimated ("J"), with a very slight high bias, due to an elevated recovery (128%, above validation limit of 120%) of the associated CRI standard.

ICP serial dilution evaluation of soil sample SB-23(5-7) showed correlations above 10%D for sodium (66%D). Although variance of these correlations usually reflect matrix effect, this variance may be due to the fact that the sample and dilution values, although 50 times greater than IDL, are still below CRDL. Results for sodium in all samples in this group are qualified estimated ("J").

Blind field duplicate correlation between SB-39(5-7) and SB-69(5-7) was acceptable.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,


Judy Harry

H2M LABS, INC.

575 Broad Hollow Road, Melville, New York 11747
PHONE: (631) 694-3040 • FAX: (631) 420-8436

fax

TO: <u>Judy Mary</u>	FROM: <u>Joann Slaw</u>
COMPANY: <u>Data Validation Services</u>	RE: <u>BFB for Sample 02-01406-002</u>
DATE: <u>2/28/02</u> TIME: _____	
FAX: <u>(518) 251-4428</u>	NO. PAGES (incl. cover sheet): <u>2</u>
NOTE: PLEASE CALL IMMEDIATELY IF YOU DO NOT RECEIVE ALL PAGES	

COMMENTS:

Judy,
Here is the spectra and
M/Z ratio. Looks good!
Shade
Joann

FOR OFFICE USE ONLY:

Time Faxed: _____

Sender (initial): _____

BFB

Data File : D:\DATA\JAN02\011602A\P19942.D

Vial: 22

Acq On : 16 Jan 2002 21:17

Operator:

Sample : 0201406-002A

Inst : H5970-3

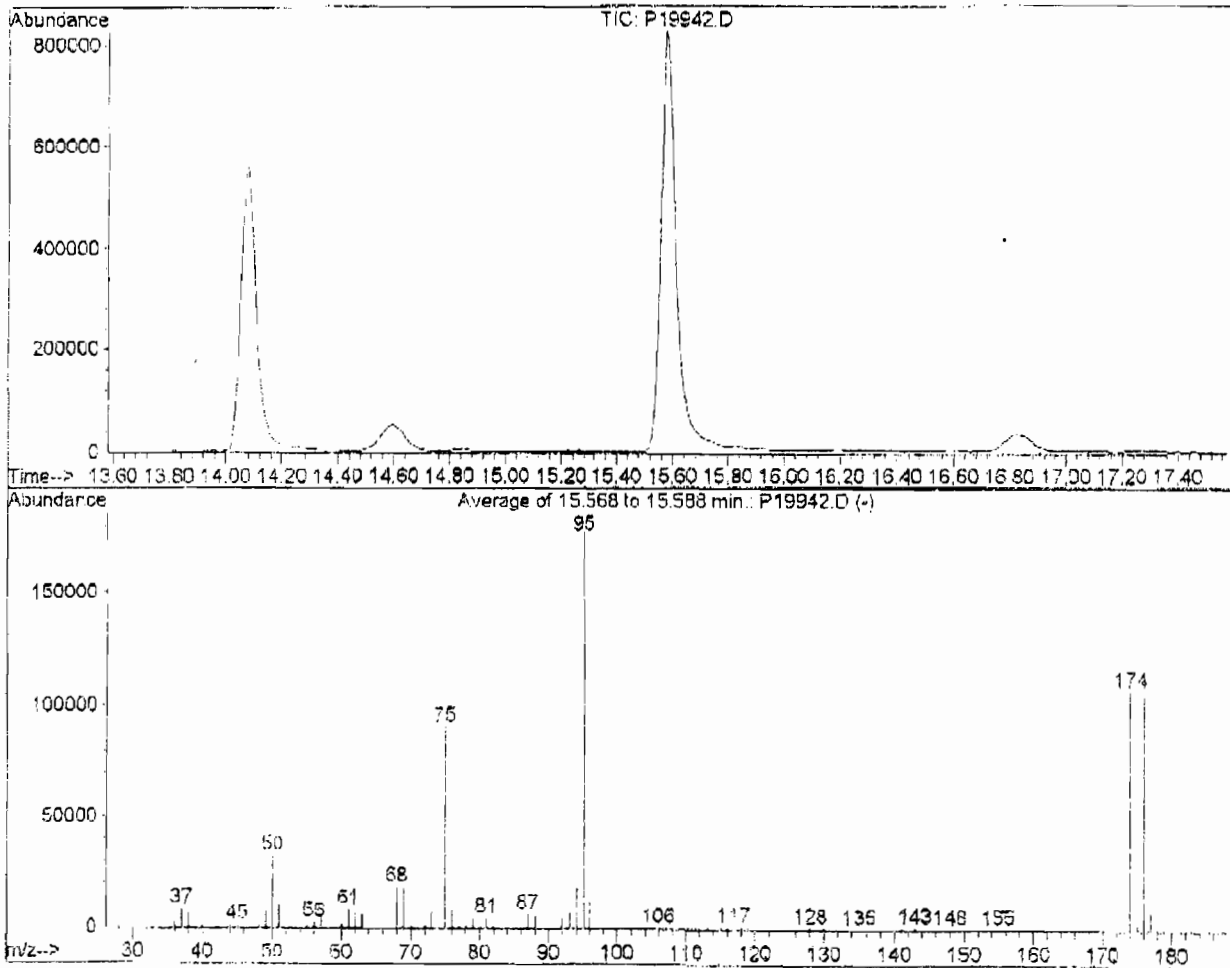
Misc : PWC004, SDB-1 (60-62), SOIL, SAMP,, 5.2G

Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\NPHCHEM\1\METHODS\PUHS0226.M (RTE Integrator)

Title : 8260-PUH1/2 Purgable Organics



AutoFind: Scans 1178, 1179, 1180; Background Corrected with Scan 1169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.2	32320	PASS
75	95	30	60	51.0	90565	PASS
95	95	100	100	100.0	177621	PASS
96	95	5	9	7.0	12482	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	59.9	106397	PASS
175	174	5	9	8.4	8989	PASS
176	174	95	101	98.4	104699	PASS
177	176	5	9	7.5	7835	PASS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 SAMPLE IDENTIFICATION AND
 ANALYTICAL REQUIREMENT SUMMARY

NYS DEC

SDG NO.: PWG004

SAMPLES RECEIVED: 1/10/02, 1/16/02 & 1/17/02

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS	*BNA GC/MS	*HERB	PCB	*METALS	OTHER
MARCUS BLVD. CATCH BASIN	0201244-001	X	X			X	
SB-23 (5'-7')	0201244-002	X	X			X	
SB-31 (0'-2')	0201244-003	X	X			X	
SB-32 (5'-7')	0201244-004	X	X			X	
SB-39 (5'-7')	0201244-005	X	X			X	
SB-69 (5'-7')	0201244-006	X	X			X	
TRIP BLANK 1/10	0201244-007	X					
SDB-1 (15'-17')	0201406-001	X	X			X	
SDB-1 (60'-62')	0201406-002	X	X			X	
SDB-2 (40'-42')	0201406-003	X	X			X	
TRIP BLANK	0201406-004	X					
SDB-4 (50'-52')	0201457-001	X	X			X	
SB13 (23'-25')	0201457-002	X	X			X	
TRIP BLANK	0201457-003	X					

* Check Appropriate Boxes

* CLP, ~~Non-CLP~~ (Please indicate year of protocol) ASP 6 10/95

* TCL/TAL, HCL, TS

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

April 15, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG005

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 2/14/02 through 2/21/02 at the Computer Circuits site. Three soil samples were analyzed for TCL volatiles and Freon 113, TCL semivolatiles, TAL metals, cyanide, and tin. Three aqueous samples were processed for TCL volatiles and Freon 113. Field and trip blanks, and matrix spikes/duplicates were also processed.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24, HW-22, and HW-2. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicate Correlation
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and most results data are usable as reported, or with minor edit or qualification as estimated. The exceptions are:

- 1) a correction to the semivolatile results for a field blank
- 2) results for chromium and iron in one soil sample are rejected per the validation protocol (although those data points may be regarded as elevated reporting limits)
- 3) rejection of 2,4-dinitrophenol results in two samples.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

General

The reported result for bis(2-ethylhexyl)phthalate in the field blank 2/15 S/S FB should have been reported as 5.2 ug/L, not 5200 ug/L. There was an apparent transcription error to the final report form.

The rinse blank collected 2/14/02, associated with sample SDB-3 (20-22), showed high concentrations of three elements. Reported detections of analytes chromium and iron in the sample are within action limits for validation. Per the protocol, the results for these two analytes in the sample are rejected ("R"), but it can be said that these analytes are not present at concentrations exceeding the reported levels, and those reported data may be usable as elevated reporting limits.

Unless the source of this blank contamination is understood, reported detections of those analytes in other samples should be used with caution.

The blind field duplicate evaluation for volatile components, performed on VP-5(183-184) and VP-5(148-149), showed acceptable correlation.

Volatile Analyses by EPA 8260B

Holding times were met, and surrogate and internal standard responses were acceptable. Instrumental tunes met requirements.

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

The soil method blank showed low level detection of methylene chloride. All detections for that analyte in the three soil samples are below ten times that of the associated blank, and are edited to nondetection at either the CRDL, or the originally reported concentration, whichever is greater.

Sample SDB-3(165-167) was processed immediately following the undiluted low level analysis of SDB-3 (20-22), and the trichloroethene detection reported for the former (39 ppb) may reflect carryover from that in the latter (2100 ppb). The result of that analyte in SB-3(165-167) is therefore edited to nondetection ("U") at an elevated reporting limit corresponding to the originally reported concentration.

Matrix spikes of aqueous sample VP-5(123-124) showed acceptable accuracy and precision. No soil matrix spikes were requested or processed. Spiked blanks showed acceptable recoveries.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

SDB-3 (20-22), SDB-3 (165-167), and SDB-3(205-207):

acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone (37%D to 61%D)

Freon 113 (and acetone) (21%RSD and 26%RSD).

2/14 S/S FB, 2/15/S/S FB, and Trip Blank 2/15:

chloromethane, carbon disulfide, and Freon 113 (22%D to 25%D)

All remaining aqueous samples and blanks in SDG PWG005:

chloromethane, vinyl chloride, methylene chloride, and acetone (25%D to 44%D)

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

Semivolatile Analyses

Holding times were met, and surrogate and internal standard responses were acceptable. Instrumental tunes met requirements.

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

The detection of bis(2-ethylhexyl)phthalate in SB-3(165-167) is considered contamination (due to presence in associated field blank), and edited to nondetection at an elevated reporting limit corresponding to the originally reported concentration.

No sample matrix spikes were requested or performed. Spiked blanks showed acceptable recoveries, with the following exceptions, which indicate the noted qualifications:

Field blanks: 4-chloroaniline (16%) qualified estimated ("UJ")

SDB-3(205-207): 4,6-dinitro-2-methylphenol (30%) qualified estimated ("UJ")

SDB-3(20-22) and SDB-3 (165-167): 2,4-dinitrophenol (5%) is rejected ("R"), and

hexachloroethane, hexachlorobenzene, 4,6-dinitro-2-methylphenol, phenanthrene, and anthracene (43% to 54%) qualified estimated ("UJ")

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the exception that the results for 2,4-dinitrophenol (44%D) are to be qualified estimated ("UJ") in the sample in which it was not rejected.

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection. Some of the observed outlying low concentration standard responses do not affect sample reported results, which are already reported at higher limits for those analytes.

Tentatively Identified Compounds (TICs) which are flagged as "A" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

Metals/CN Analyses

Accuracy and precision evaluations of the metals on SDB-3(20-22) showed an outlying recovery outside the acceptable 75% to 125% range for antimony (63%). Results for this analyte in the soil samples in this SDG are therefore qualified as estimated ("J" or "UJ"). The post-digest spike of the analyte recovered acceptably. Nine elements showed elevated duplicate correlations, but all were below the validation action level for qualification.

Cyanide accuracy and precision evaluations on SDB-3(205-207) were acceptable.

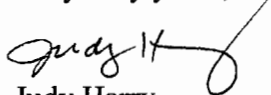
The soil LCS value for mercury is incorrectly entered on the QC summary Form 7 as being an outlying value of 1.3 mg/kg. The actual value, as shown in the raw data (6.3 mg/kg), is acceptable.

Due to low recoveries in the CRI standards (16%D), results for tin in all sample and field blanks are qualified estimated ("J" and "UJ"). No corrective action was required of the laboratory.

ICP serial dilution evaluation of soil sample SDB-3(20-22) showed correlations above 10%D for calcium (12%D) and sodium (21%D). Although variance of these correlations usually reflect matrix effect, this variance for sodium may be due to the fact that the sample and dilution values, although 50 times greater than IDL, are still below CRDL. Results for calcium and sodium in all soil samples in this group are qualified estimated ("J").

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,


Judy Harry

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

NYS DEC

SDG NO.: PWG005

SAMPLES RECEIVED: 2/15/02, 2/20/02 & 2/22/02

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS	*BNA GC/MS	*HERB	PCB	*METALS	OTHER
SDB-3 20-22'	0202449-001	X	X			X	
SDB-3 165-167'	0202449-002	X	X			X	
2/14 S/S FB	0202449-003	X	X			X	
2/15 S/S FB	0202449-004	X	X			X	
TRIP BLANK 2/15	0202449-005	X					
SDB-3 205'-207'	0202532-001	X	X			X	
GW VP-5 123'-124'	0202532-002	X					
2/19/02 S/S FB	0202532-003	X	X			X	
2/20/02 HPFB	0202532-004	X					
TRIP BLANK 2/20	0202532-005	X					
GW VP-5 (148-149)	0202618-001	X					
GW VP-5 (183-184)	0202618-002	X					
2/21/02 HPFB	0202618-003	X					
TRIP BLANK 2/21	0202618-004	X					

* Check Appropriate Boxes

* CLP, ~~Non-CLP~~ (Please indicate year of protocol) A58 B 10/95

* TCL/TAL, HCL, TS

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

April 15, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG006

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 2/27/02 through 3/05/02 at the Computer Circuits site. Six aqueous samples were analyzed for TCL volatiles and Freon 113. Rinse and trip blanks, and matrix spikes/duplicates were also processed.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and most results data are usable as reported, or with minor qualification as estimated.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

General

Discrepancies between bottle labeling and custody entries were resolved at sample receipt.

Volatile Analyses by EPA 8260B

Holding times were met, and surrogate and internal standard responses were acceptable. Blanks showed no contamination, and instrumental tunes met requirements.

Matrix spikes of VP-4 (107-108) showed acceptable accuracy, with the exception that recoveries for two analytes which were not detected in the unspiked sample (1,1-dichloroethene and toluene) were elevated (160% and 126%) in the matrix spike, but not the spiked duplicate. The matrix spike showed consistently higher recoveries than the matrix spike duplicate, with outlying duplicate correlations for all five analytes (up to 46%RPD). The surrogate recoveries in the spikes do not show similar variance, and therefore the outlying correlations are likely due to processing, rather than matrix. No qualification is indicated for the sample results.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

VP-3 (108-109), Trip Blank 2/27, 2/27 HP FB:

--acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone (32%D to 36%D)

All other samples and blanks in SDG PWG006:

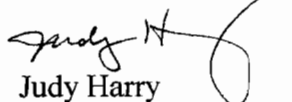
--carbon disulfide, Freon 113, and carbon tetrachloride (24%D to 39%D)

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,


Judy Harry

SAMPLES RECEIVED: 2/28/02 & 3/5/02

[illegible]

- * Check Appropriate Boxes
* CLP, ~~Non-CLP~~ (Please indicate year of protocol) ASP B 10/95
* TCL/TAL, HCL, TS

Data Validation Services

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Phone 518-251-4429

Facsimile 518-251-4428

May 7, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG007

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 3/06/02 through 3/12/02 at the Computer Circuits site. Seven aqueous samples were analyzed for TCL volatiles and Freon 113. Three soil samples were analyzed for TCL volatiles and Freon 113, TCL semivolatiles, TAL metals and tin, and cyanide. Field and trip blanks, and matrix spikes/duplicates were also processed. Methods used are those of the USEPA SW846.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24, HW-22, and HW-2. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and most results data are usable as reported, or with minor qualification as estimated.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

General

Field and trip blanks showed no target analyte concentration.

Blind field duplicate correlations for SB-47 0-2 and SB-87 0-2, and for VP-1 112-113 and VP-11 112-113, were acceptable, with the exception of a large variance in the butylbenzylphthalate concentrations in the soils. The values differ by more than an order of magnitude, indicating uncertainty in the reliability of the quantitative concentrations.

Volatile Analyses by EPA 8260B

Holding times were met, and surrogate and internal standard responses were acceptable. Aqueous blanks showed no contamination, and instrumental tunes met requirements.

Due to presence in the method blank, the methylene chloride detections in the soil samples are considered contamination, and edited to nondetection at the CRDL.

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

The soil Laboratory Control Sample showed low recovery for bromoform (72%). Results for this analyte the soil samples are qualified estimated ("UJ").

Matrix spikes of VP-1 97-98 showed acceptable accuracy and precision, with the exception that recoveries for two analytes (trichloroethene and toluene) were slightly elevated (122% and 126%) in the matrix spike, but not the spiked duplicate. No qualification is indicated for the sample results (which are nondetection or already qualified estimated).

Matrix spikes of SB-45 0-2 showed acceptable accuracy and precision, with the exception of an elevated %RPD for trichloroethene. The sample shows detection of this analyte at a concentration about equal to that of the spike, and there may be a bias to the reported sample concentration.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

Soil samples--acetone, Freon 113, carbon tetrachloride, bromoform, tetrachloroethene (23%D to 35%D)
VP-2 97-98, VP-2 112-113, VP-2 117-118, two Field Blanks (3/6 and 3/7), and Trip Blank 3/7

--carbon disulfide, 1,2-dichloroethane, carbon tetrachloride, and Freon 113 (24%D to 47%D)

Field Blank 3/11--chloromethane, 1,1,-dichloroethene, and tetrachloroethene (22%D to 30%D)

All other aqueous samples in SDG PWG007--chloromethane, carbon disulfide, dibromochloromethane, bromoform, tetrachloroethane, and ethylbenzene

No qualification is made for results of analytes with elevated %RSD calibration values, where the low concentration standard has high response, and the samples showed no detection.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

Semivolatile Analyses

Holding times were met, and surrogate and internal standard responses of field samples were acceptable. Instrumental tunes met requirements.

add from gen

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

Sample matrix spikes of SB-45 0-2 showed acceptable accuracy and precision.

Spiked blanks showed acceptable recoveries, with the exception of 4,6-dinitro-2-methylphenol (31%) and fluoranthene (59%). Results for these two compounds in the samples are to be qualified estimated ("J" or "UJ"), with a possible low bias.

Instrument linearity was acceptable. The calibration standard responses falling outside validation action guidelines of 20%D (they were 21%D to 38%D), and therefore indicating qualification of those analytes results as estimated in all three soils, are: n-nitrosodi-n-propylamine, n-nitrosodiphenylamine, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, diethylphthalate, pentachlorophenol, carbazole, and di-n-octylphthalate.

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection. Some of the observed outlying low concentration standard responses do not affect sample reported results, which are already reported at higher limits for those analytes.

Tentatively Identified Compounds (TICs) which are flagged as "A" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

The fact that the method blank was doubly spiked with internal standard does not affect the target analytes results, as there are no detections in that blank.

Metals/CN Analyses

Accuracy and precision evaluations of the metals on SB-45 0-2 showed outlying recoveries outside the acceptable 75% to 125% range for antimony (56%), lead (166%), and selenium (68%). Results for these analytes in the soil samples are therefore qualified as estimated ("J" or "UJ"). The

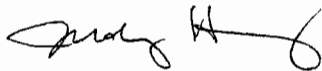
post-digest spikes recovered acceptably. Five elements showed elevated duplicate correlations, but all were below the validation action level for qualification.

The ICP serial dilution evaluation of soil sample SB-45 0-2 showed a correlation above 10%D for sodium (45%D). Results for sodium in the soil samples in this group are qualified estimated ("J").

The concentration of the low calibration standard for mercury is incorrectly entered on the QC summary Form 14. It is actually 0.2 ug/L, not 0.5 ug/L.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,

A handwritten signature in black ink, appearing to read "Judy Harry", with a stylized flourish at the end.

Judy Harry

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

NYS DEC

SDG NO.: PWG007

SAMPLES RECEIVED: 3/8/02, 3/11/02 & 3/12/02

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS	*BNA GC/MS	*HERB	PCB	*METALS	OTHER
GW VP-2 (97'-98')	0203218-001	X					
GW VP-2 (112'-113')	0203218-002	X					
GW VP-2 (117'-118')	0203218-003	X					
3/6 HP FB	0203218-004	X					
3/7 HP FB	0203218-005	X					
TRIP BLANK 3/7	0203218-006	X					
GW VP-1 97-98	0203270-001	X					
GW VP-1 112-113	0203270-002	X					
GW VP-1 117-118	0203270-003	X					
GW VP-11 112-113	0203270-004	X					
SB 45 (0-2)	0203270-005	X	X			X	
SB 47 (0-2)	0203270-006	X	X			X	
SR 87 (0-2)	0203270-007	X	X			X	
P BLANK 3/11	0203270-008	X					
HPFB	0203314-001	X					

* Check Appropriate Boxes

* CLP, ~~Non-CLP~~ (Please indicate year of protocol) Ase B 10/95

* TCL/TAL, HCL, TS

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

June 6, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG008
CAS Sub. No. R2211380
E&E SDG No. 204207

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 4/01/02 through 4/03/02 at the Computer Circuits site. Thirteen aqueous samples were analyzed for TCL volatiles and Freon 113, TCL semivolatiles, TAL metals, and hexavalent chromium. Four of the samples were also processed for DOC, turbidity, chloride, alkalinity, nitrate, sulfate, sulfide, ferrous iron, and free CO₂. Field blanks and trip blanks, and matrix spikes/duplicates were also processed. Methods used are those of the USEPA SW846. Ferrous iron analyses were subcontracted to Columbia Analytical Services, and mercury analyses were subcontracted to Ecology & Environment.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24, HW-22, and HW-2. The following items were reviewed:

- * Data Completeness
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration and CRI/CRA Standards
- * Serial Dilutions
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and most results are usable as reported, or with minor qualification as estimated or edit to nondetection. The exception is that the results for 4-chloroaniline are not usable. The reporting results for numerous semivolatile analytes not detected in the samples are qualified as estimated, but the usability of those reported results is not affected.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

General

Field and trip blanks showed no target analyte concentration, with the exception of low level concentrations of methylene chloride and carbon disulfide. These analytes were not detected in associated samples.

Blind field duplicate correlations for MW-25 and MW-9 were acceptable, and accuracy and precision evaluations on MW-7 showed no significant matrix effect.

Volatile Analyses by EPA 8260B

Holding times were met, and surrogate and internal standard responses were acceptable. Instrumental tunes met requirements.

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

Matrix spikes (MS/MSD) of MW-7 showed elevated recoveries (to 148%) of the five analytes evaluated in the MS, acceptable recoveries in the MSD, and two elevated duplicate correlation values. The sample results for those analytes show nondetection, and Laboratory Control Sample (LCS) recoveries of all analytes were acceptable. No effect on reported results is indicated.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

Results for ethylbenzene and m,p-xylene in all samples are estimated due to slightly outlying system linearity (15.7% RSD and 16.2%RSD).

Methylene chloride, acetone, carbon disulfide, and 2-butanone (24%D to 30%D) in MW-1, MS-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-10, and the trip and field blanks of 4/1 and 4/2.

Chloromethane, methylene chloride, acetone, vinyl chloride, 4-methyl-2-pentanone, 2-hexanone, and 1,1,2,2-tetrachloroethane (32%D to 34%D) in AR-2, MW-7, MW-9, MW-11, MW-25, and trip and field blanks of 4/3.

No qualification is made for results of analytes with elevated %RSD calibration values, where the low concentration standard has high response, and the samples showed no detection.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

Semivolatile Analyses by 8270C

Holding times were met, and surrogate and internal standard responses of field samples were acceptable. Instrumental tunes met requirements, and blanks showed no contamination.

Sample matrix spikes of MW-7 showed elevated recoveries (140% and 81%) for two analytes not detected in the unspiked sample. LCSs showed acceptable recoveries, with the exception four elevated values for analytes not detected in these project samples. No qualification is indicated.

Due to poor response in the calibration standards (mean RRF is 0.031), the result for 4-chloroaniline is to be rejected ("R") in these project samples.

Instrument linearity was acceptable. Numerous analytes not detected in the samples showed elevated responses in the continuing calibration verification standards above 20%D. These analytes were not detected in the associated samples, and although they are qualified "UJ" per the validation SOP HW-22, the implied bias is high, and results for these project samples are not adversely affected. The affected analytes have been flagged accordingly on hardcopies of client result tables submitted with this report. There are eighteen analytes in MW-9, MW-11, and MW-25, and seventeen in the other project samples.

No qualification is made for results of analytes with elevated %RSD values, where the low concentration standard has high response, and the samples showed no detection. Some of the observed outlying low concentration standard responses do not affect sample reported results, which are already reported at higher limits for those analytes.

Tentatively Identified Compounds (TICs) which are flagged as "A" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" by the laboratory are potential contamination, and are similarly rejected.

Additionally, the TIC that is reported as "Unknown at <5.35' to 5.38'>" is also present in associated field blanks, and is to be disregarded ("R") as a sample component.

Metals/CN Analyses

The laboratory "B" flag should be removed from the mercury result for MW-8.

Accuracy and precision evaluations of the metals in MW-7 (batch QC for mercury) showed acceptable recoveries and duplicate correlations.

An elevated recovery (127%) for vanadium in the CRI standard does not affect the associated samples results, which are nondetection. No mercury CRA standard was processed in sequence. However, the initial calibration processed immediately preceding the sample analyses did include that low level standard, which showed acceptable recovery.

The ICP serial dilution evaluation of MW-7 showed a correlation above 10%D for iron (14%D). Results for iron reporting detection above 45 ug/L in the samples in this group (i.e. all samples) are therefore qualified estimated ("J").

Wet Chemistry Analyses

Review was conducted for method compliance, transcription, calculations, holding times, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure.

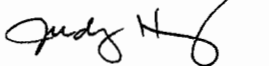
Accuracy and precision results for the conventional analytes in MW-7 were acceptable. Hexavalent chromium matrix spikes were also performed on MW-8, and were also within acceptance ranges.

Method blanks, and the equipment blank (processed only for hexavalent chromium) showed no contamination.

Raw data for ferrous iron determinations were not provided, and full validation has therefore not been performed for that analyte.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,



Judy Harry

H2M LABS, INC.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 SAMPLE IDENTIFICATION AND
 ANALYTICAL REQUIREMENT SUMMARY
 PW GROSSER CONSULTING
 PROJECT: COMPUTER CIRCUITS
 SAMPLES RECEIVED: 04/01, 04/02 & 04/03/02
 SDG NO.: PWG008

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	OTHER
MW-3	0204038-001	X	X			X	X
MW-5	0204038-002	X	X			X	X
MW-6	0204038-003	X	X			X	X
4-1-02-FB	0204038-004	X	X			X	X
TRIP BLANK	0204038-005	X					
MW-1	0204088-001	X	X			X	X
MW-2	0204088-002	X	X			X	X
MW-4	0204088-003	X	X			X	X
MW-8	0204088-004	X	X			X	X
MW-10	0204088-005	X	X			X	X
4-2-02-FB	0204088-006	X	X			X	X
TRIP BLANK	0204088-007	X					
2	0204155-001	X	X			X	X
MW-7 MS/MSD	0204155-002	X	X			X	X
MW-9	0204155-003	X	X			X	X
MW-11	0204155-004	X	X			X	X
MW-25	0204155-005	X	X			X	X
4-3-02-FB	0204155-006	X	X			X	X
TRIP BLANK	0204155-007	X					

* Check Appropriate Boxes

* CLP, ~~Non-CLP~~ (Please indicate year of protocol) *asp B 10/95*

* TCL/TAL, HSL, Priority Pollutant

Data Validation Services

120 Cobble Creek Road P. O. Box 208

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September 9, 2002

Lisa Santoro
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RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG009

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 7/22/02 through 7/24/02 at the Computer Circuits site. Thirteen aqueous samples were analyzed for TCL volatiles and Freon 113, TAL metals and tin, cyanide, and hexavalent chromium. Field blanks and trip blanks, and matrix spikes/duplicates were also processed. Methods used are those of the USEPA SW846.

Data validation was performed with guidance from the most current editions of the USEPA Region 2 SOPs HW-24 and HW-2. The following items were reviewed:

- * Data Completeness
- * Laboratory Narrative
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicates
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration and CRI/CRA Standards
- * Serial Dilutions
- * Instrument IDLs
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and most results are usable as reported, or with minor qualification as estimated. The exception is that, in accordance with validation SOPs, the zinc result for one sample is rejected (it is considered external contamination). That result is usable with consideration as an elevated reporting limit. The hexavalent chromium detection in one sample may be due to interference.

Attached to this narrative are copies of laboratory case narratives and sample identification summary forms. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

General

Field and trip blanks showed no target analyte concentration, with the exception of a low level zinc detection.

Blind field duplicate correlations for MW-3 and MW-30 were acceptable, and accuracy and precision evaluations on MW-4 (all fractions) and MW-30 and MW-11 (hexavalent chromium) showed no significant matrix effect.

Volatile Analyses by EPA 8260B

Holding times were met, and surrogate and internal standard responses were acceptable. Instrumental tunes met requirements.

Results for analytes initially reported with the "E" flag should be derived from the dilution analysis of the given sample. All other results can be used from the initial analysis.

Matrix spikes (MS/MSD) of MW-4 show acceptable recoveries, and one elevated duplicate correlation (trichloroethene). The detected sample result for that analyte may have a slight bias.

Calibration standard responses were within validation action guidelines (15%RSD and 20%D), with the following exceptions, resulting in the qualification of the analyte result as estimated in the indicated samples:

Chloromethane, 1,2-dichloropropane, and acetone (21%D to 24%D) in MW-1, TB 7/24, and FB 7/24
Chloromethane, 1,2-dichloropropane, vinyl chloride, cis-1,3-dichloropropene, 4-methyl-2-pentanone (22%D to 32%D) in all other samples

No qualification is made for results of analytes with elevated %RSD calibration values, where the low concentration standard has high response, and the samples showed no detection.

Tentatively Identified Compounds (TICs) which are flagged as "X" by the laboratory are analysis artifacts, and should be rejected ("R") from consideration as sample components. Similarly, those flagged as "B" or noted as siloxanes by the laboratory are potential contamination, and are similarly rejected.

The summary Form 5A for the BFB tune of 7/24/02 was not present in the data package. The raw data were reviewed for the same information, and found acceptable.

Metals/CN Analyses

Due to copresence in the associated field blank (at 30 ppb), the detection of zinc in MW-4 is flagged "R" as rejected data. The result can be considered an elevated reporting limit ("U"), as it is known the sample constituency is not above that concentration.

Accuracy and precision evaluations of the metals in MW-7 (batch QC for mercury) showed acceptable recoveries and duplicate correlations.

The ICP serial dilution evaluation of MW-4 shows no correlations above 10%D.

Hexavalent Chromium Analyses

Review was conducted for method compliance, transcription, calculations, holding times, standard and blank acceptability, accuracy and precision, etc.

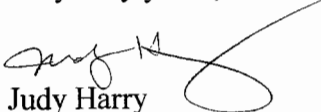
The hexavalent chromium (hexachrome) result for MW-7 showed detection at 0.090 mg/L. However, the total chromium result for the sample (0.049 mg/L), which reflects all forms of that element, indicates that there may be a potential false positive interference contribution to the hexachrome result. That value is flagged as estimated, and is considered as having a high bias. The total chromium result can be considered as an maximum hexachrome concentration (i.e. reporting limit) for the sample.

It is also noted that the hexachrome result for MW-8 is equal to the total chromium concentration in the sample.

Accuracy and precision for MW-4, MW-30, and MW-11 were acceptable.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,


Judy Harry

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY
NYS DEC
SDG NO.: PWG009
SAMPLES RECEIVED: 7/22/02-7/24/02

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS	*BNA GC/MS	*HERB	PCB	*METALS	OTHER
MW-3	0207673-001	X				X	X
MW-5	0207673-002	X				X	X
MW-6	0207673-003	X				X	X
MW-30	0207673-004	X				X	X
FIELD BLANK 7/22	0207673-005	X				X	X
TRIP BLANK 7/22	0207673-006	X					
MW-1	0207717-001	X				X	X
MW-2	0207717-002	X				X	X
MW-8	0207717-003	X				X	X
MW-9	0207717-004	X				X	X
MW-10	0207717-005	X				X	X
MW-11	0207717-006	X				X	X
FIELD BLANK 7/23	0207717-007	X				X	X
TRIP BLANK 7/23	0207717-008	X					
MW-2	0207776-001	X				X	X
MW-4	0207776-002	X				X	X
MW-7	0207776-003	X				X	X
FIELD BLANK 7/24	0207776-004	X				X	X
TRIP BLANK 7/24	0207776-005	X					

* Check Appropriate Boxes

* CLP, ~~Non-CLP~~ (Please indicate year of protocol) ASP B 10/95

* TCL/TAL, HCL, TS

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

September 11, 2002

Lisa Santoro
P. W. Grosser Consulting
630 Johnson Avenue Suite 7
Bohemia, NY 11716

RE: Validation of Computer Circuits Site Data Packages
H2M Labs SDG PWG010

Dear Ms. Santoro:

Review has been completed for the data package generated by H2M Labs which pertains to samples collected 7/24/02 at the Computer Circuits site. Four air samples were analyzed for TCL volatile analytes by method USEPA TO-17.

Data validation was performed with consideration of the method requirements for USEPA TO-17 and TO-15 (analytical processing), and the USEPA Region 2 validation SOP HW-18 (as applicable for the methodology). The following items were reviewed:

- * Data Completeness
- * Laboratory Narrative
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes
- * Calibration Standards
- * Method Compliance
- * Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the project QAPP and methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, samples were processed in compliance with protocol requirements, and sample results are usable as reported, with the edit of the reporting limit of one analyte.

Attached to this text is a copy of the laboratory case narrative and sample identification summary. Also included in this submission are red-ink edited client results tables, reflecting validation qualifiers and edits noted below.

General

The custody entry for collection date should include the year.

Volatile Analyses by EPA TO-17

Results for analytes reported with the "E" flag are qualified as estimated ("J"), and the quantitative result is likely biased low. These responses exceed linear range of the instrument, and reanalysis is not possible with this matrix.

Holding times were met, and surrogate and internal standard responses were acceptable. Instrumental tunes met requirements.

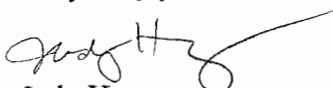
Due to poor response of the 10 ng initial calibration standard, the reporting limit for chloroethane is raised up to 50 ng. Other calibration standard linearity and responses were very good.

Laboratory fortified blanks showed acceptable recoveries for all target analytes.

Reported results are substantiated by the raw data.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,



Judy Harry

SAMPLES RECEIVED: 7/24/02

[illegible]

- * Check Appropriate Boxes
 * CLP, Non-CLP (Please indicate year of protocol)
 * TCL/TAL, HCL, TS

SDG NARRATIVE FOR VOLATILES ANALYSES
SAMPLE RECEIVED: 12/17/02-12/26/02
SDG #: PWG002

Page 1 of 2

For Samples:

SB-6 (2'-4')	SB-14 (20'-22')
SB-10 (4'-6')	SB-15 (0'-2')
SB-8 (4'-6')	SB-17 (2'-4')
SF-DB-4 (0'-0.5')	SB-18 (5'-7')
SF-6 (0'-0.5')	TRIP BLANK 12/20
SF-10 (0'-0.5')	SB-2 (4'-6')
SF-11 (0'-0.5')	SB-8 (4'-6') MS/MSD
SF-12 (0'-0.5')	SB-9 (4'-6')
BOWL SPOON FIELD BLANK 12/17	SB-59 (4'-6')
TRIP BLANK 12/17	TRIP BLANK 12/26

The above samples were analyzed for a specific list of volatile organic analytes plus tentatively identified compounds according to the requirements of method 8260B.

QC DATA / CALIBRATION

Six calibration standards were analyzed for the heated purge to extend the range for the low level analysis, since the sample weight could not be changed.

Sample SB-8 (4'-6') was analyzed as the matrix spike/matrix spike duplicate.

Two samples, SB-8 (4'-6') and SF-12 (0'-0.5') did not meet the surrogate recovery limits for 4-bromochlorobenzene. Sample SF-12 (0'-0.5') was re-analyzed, resulting in similar recoveries. Both sets of data are reported. Due to concentrations found above the highest calibration, sample SB-8 (4'-6') was reanalyzed by medium level protocol, which constitutes a "dilution".

All other QC data and calibrations met the requirements of the method. The soil samples were sampled in Encore samplers, and were extruded into the prepared pre-weighed 40mL vials in the laboratory.

SAMPLE ANALYSIS

The raw data printed by the analytical software are computed for the default weight of 5 g and do not match the reported results. Those are adjusted for the specific sample weight used for each sample.

Apart from sample SB-8 (4'-6'), another sample, SB-15 (0'-2'), also exceeded the calibration range, and was re-analyzed with medium level protocol.

SDG NARRATIVE FOR VOLATILES ANALYSES
SAMPLE RECEIVED: 12/17/02-12/26/02
SDG #: PWG002

Page 2 of 2

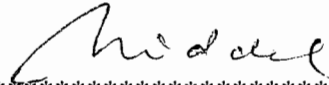
Results from the two medium level analyses were significantly higher than the results from the purge and trap method. Computations were checked, and found correct. This seems to indicate, that the methanol leaching in the medium level procedure provides a more efficient method to release the analytes.

Some of the samples showed a broad "peak" of unresolved unknown fluorinated compounds, eluting between about 4.4 minutes to 8 minutes, with similar masses. The total area was integrated manually and reported as one "unknown" with a retention time between 4 and 5 minutes.

TIC compounds, identified as siloxanes, are suspected to be column bleed introduced by the analytical system. The compounds are flagged with the qualifier "X".

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: February 1, 2002

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Ursula Middel
Technical Manager

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS
SAMPLE RECEIVED: 12/19/01 – 12/26/01
SDG#: PWG002

Page 1 of 3

For Samples:

SB-6 (2'-4')	SB-14 (20'-22')
SB-10 (4'-6')	SB-15 (0'-2')
SB-12 (6'-8')	SB-17 (2'-4')
SF-DB-4 (0'-0.5')	SB-18 (5'-7')
SF-6 (0'-0.5')	SB-2 (4'-6')
SF-10 (0'-0.5')	SB-8 (4'-6') MS/MSD
SF-11 (0'-0.5')	SB-9 (4'-6')
SF-12 (0'-0.5')	SB-59 (4'-6')
BOWL SPOON FIELD BLANK 12/17	

The above samples were analyzed for a specific list of base-neutral acid extractable analytes according to the requirements of method 8270C.

All QC data and calibrations met the requirements of the method, and no problems were encountered with sample analysis. The following should be noted:

- Sample SB-8 (4'-6') was analyzed as the matrix spike/matrix spike duplicate.
- The following samples contained TIC compounds, which identified as unknown alkanes:

Sample: SB-10 (4'-6')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Straight	16.67	560 J
Straight	17.34	240 J

Sample: SF-DB-4 (0'-0.5')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Straight	17.33	100 J

Sample: SF-10 (0'-0.5')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Straight	16.66	150 J
Straight	17.33	330 J
Straight	18.20	93 J

Sample: SB-14 (20'-22')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.34	110 J

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS

SAMPLE RECEIVED: 12/19/01 – 12/26/01

SDG#: PWG002

Page 2 of 3

Sample: SB-15 (0'-2')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.34	86 J
Straight	16.66	220 J
Straight	17.33	100 J

Sample: SB-17 (2'-4')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.34	99 J
Straight	16.67	150 J

Sample: SB-18 (5'-7')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.33	100 J
Branched	3.58	120 J

Sample: SB-2 (4'-6')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.57	130 J

Sample: SB-8 (4'-6')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Straight	16.65	560 J

Sample: SB-59 (4'-6')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.33	150 J

- One sample, SF-6 (0'-0.5'), exceeded the calibration range for targeted analytes and was reanalyzed at a dilution. Both sets of data are reported.

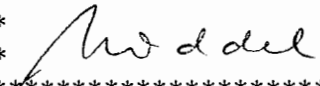
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SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS
SAMPLE RECEIVED: 12/19/01 – 12/26/01
SDG#: PWG002

Page 3 of 3

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: January 14, 2002

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Ursula Middel
Technical Manager

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H2M LABS, INC.

SDG NARRATIVE FOR METALS SAMPLES RECEIVED: 12/18/01, 12/20/01 & 12/26/01 SDG#: PWG002

For Samples:

SB-6 (2'-4')	SF-11 (0'-0.5')	SB-18 (5'-7')
SB-10 (4'-6')	SF-12 (0'-0.5')	SB-2 (4'-6')
SB-12 (6'-8')	BOWL SPOON FIELD BLANK 12/17	SB-8 (4'-6')
SF-DB-4 (0'-0.5')	SB-14 (20'-22')	SB-9 (4'-6')
SF-6 (0'-0.5')	SB-15 (0'-2')	SB-59 (4'-6')
SF-10 (0'-0.5')	SB-17 (2'-4')	

Sixteen soil samples and one field blank were received by H2M Labs, Inc. on 12/18/01, 12/20/01 and 12/26/01 for the TCL list of parameters plus tin. No cyanide was required on the field blank.

Samples were prepared and analyzed in accordance with the following methods: ICP analysis was performed on a TJA61E Trace Analyzer using method 6010B. Mercury was analyzed on a Leeman PS200 using method 7471A for soil samples and method 7470A for water samples. Cyanides were performed via the manual spectrophotometric method, using midi distillation, and read on a Sequoia Turner model 340 spectrophotometer (method 335.2).

Sample SB-8(4'-6') was utilized for duplicate and spike reporting.

The spike analysis of sample SB-8(4'-6') did not recover within acceptance limits for antimony and lead. The sample was post spiked, reanalyzed and recovered acceptably. All associated soil data is flagged with an "N" on Forms 1 and 5A.

The ICP serial dilution analysis of sample SB-8(4'-6') did not recover within acceptance limits for sodium. Sodium is flagged with an "E" on Forms 1 and 9 for all soil samples.

The total solids/percent moisture analysis for samples received on 12/18/01 and 12/20/01 was performed on 12/26/01, out of holding time (three days and one day, respectively).

All other quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: January 15, 2002

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Lynn Daniello
Quality Assurance Manager

SDG NARRATIVE FOR VOLATILES ANALYSES
SAMPLE RECEIVED: 12/27/01-1/3/02
SDG #: PWG003

For Samples:

SB-4 (10'-12')	SB-28 (5'-7') MS/MSD
SB-5 (8'-10')	SB-35 (5'-7')
TRIP BLANK 12/27	SB-56 (5'-7')
SB-21 (8'-10')	TRIP BLANK 1/3/02
SB-26 (5'-7')	

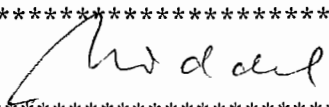
The above samples were analyzed for a specific list of volatile organic analytes plus tentatively identified compounds according to the requirements of method 8260B.

All QC data and calibrations met the requirements of the method, and no problems were encountered with sample analysis. The following should be noted:

- Sample SB-28 (5'-7') was analyzed as the matrix spike/matrix spike duplicate.
- The soil samples were sampled in Encore samplers, and were extruded into the prepared pre-weighed 40mL vials in the laboratory.
- The raw data printed by the analytical software are computed for the default weight of 5 g and do not match the reported results. Those are adjusted for the specific sample weight used for each sample.
- Some of the samples showed a broad "peak" of unresolved unknown fluorinated compounds, eluting between about 4.4 minutes to 8 minutes, with similar masses. The total area was integrated manually and reported as one "unknown" with a retention time between 4 and 5 minutes.
- TIC compounds, identified as siloxanes, are suspected to be column bleed introduced by the analytical system. The compounds are flagged with the qualifier "X".

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: February 6, 2002

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Ursula Middel
Technical Manager

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS
SAMPLE RECEIVED: 12/27/01 1/3/02
SDG#: PWG003

Page 1 of 2

For Samples:

SB-4 (10'-12')	SB-28 (5'-7') MS/MSD
SB-5 (8'-10')	SB-35 (5'-7')
SB-21 (8'-10')	SB-56 (5'-7')
SB-26 (5'-7')	

The above samples were analyzed for base-neutral acid extractable analytes by method 8270C according to the requirements of the NYS DEC ASP, Rev. 10/95.

All QC data and calibrations met the requirements of the method, and no problems were encountered with sample analysis. The following should be noted:

- Sample SB-28 (5'-7') was analyzed as the matrix spike/matrix spike duplicate.
- The following samples contained TIC compounds, which identified as unknown alkanes:

Sample: SB-4 (10'-12')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.32	230 J
Branched	16.65	110 J

Sample: SB-5 (8'-10')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.32	200 J

Sample: SB-21 (8'-10')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.32	180 J

Sample: SB-26 (5'-7')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	16.66	340 J

H2M LABS, INC.

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS

SAMPLE RECEIVED: 12/27/01 1/3/02

SDG#: PWG003

Page 2 of 2

Sample: SB-28 (5'-7')

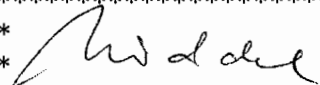
<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Branched	3.32	180 J
Straight	3.57	190 J
Straight	16.66	310 J
Straight	17.33	120 J

Sample: SB-56 (5'-7')

<u>Type</u>	<u>RT</u>	<u>Conc (µg/kg)</u>
Straight	16.65	290 J

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: January 24, 2002

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Ursula Middel
Technical Manager

H2M LABS, INC.

**SDG NARRATIVE FOR METALS
SAMPLES RECEIVED: 12/27/01 & 1/3/02
SDG#: PWG003**

For Samples:

SB-4 (10'-12')
SB-5 (8'-10')
SB-21 (8'-10')
SB-26 (5'-7')
SB-28 (5'-7') MS/MSD
SB-35 (5'-7')
SB-56 (5'-7')

Seven soil samples were received by H2M Labs, inc. on 12/27/01 and 1/3/02 for the TCL list of metals plus tin.

Samples were prepared and analyzed in accordance with the following methods: ICP analysis was performed on a TJA61E Trace Analyzer using method 6010B. Mercury was analyzed on a Leeman PS200 using method 7471A. Cyanides were performed via the manual spectrophotometric method, using midi distillation, and read on a Sequoia Turner model 340 spectrophotometer (method 335.2).

Sample SB-28 (5'-7') was utilized for duplicate and spike reporting.

The spike analysis of sample SB-28 (5'-7') did not recover within acceptance limits for lead. The sample was post spiked, reanalyzed and recovered acceptably. Lead data is flagged with an "N" on Forms 1 and 5A.

All other quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: January 22, 2002

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Lynn Daniello
Quality Assurance Manager

H2M LABS, INC.

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS SAMPLE RECEIVED: 1/10/02, 1/16/02 & 1/17/02 SDG#: PWG004

For Samples:

MARCUS BLVD. CATCH BASIN	SDB-1 (15'-17')
SB-23 (5'-7')	SDB-1 (60'-62')
SB-31 (0'-2')	SDB-2 (40'-42')
SB-32 (5'-7')	SDB-4 (50'-52')
SB-39 (5'-7')	SB13 (23'-25')
SB-69 (5'-7')	

The above samples were analyzed according to the requirements of the NYSDEC ASP 10/95 method 8270 for the TCL base-neutral-acid extractable analytes.

The advisory surrogate, d-14 terphenyl had high recoveries in MSB-3036, LFB-3036 and several samples. MB-3083 was inadvertently double-spiked with surrogate standard. The recoveries listed are corrected for the double spike.

MSB-3036 had a high percent recovery for 4-nitrophenol. This analyte also had a high recovery in the matrix spike and the matrix spike duplicate.

Samples MARCUS BLVD. CATCH BASIN and SB-31 (0'-2') contained concentrations of targeted analytes above the calibration range and were reanalyzed at a dilution.

Sample SB-31 (0'-2') had low or no recoveries for the acid surrogates. The sample was re-extracted with similarly low surrogate recoveries.

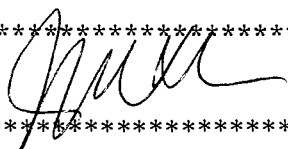
Samples MARCUS BLVD. CATCH BASIN and SB-31 (0'-2') were reanalyzed due to concentration levels of targeted analytes above the calibration range. The samples were reanalyzed at a dilution. 4-Methylphenol and carbazole were not calibrated for in the diluted analysis. These analytes were not detected in the initial analyses therefore this has no impact on the results. It should be noted that the MARCUS BLVD. CATCH BASIN sample had an initial pH of 11.

Lab-fortified blanks were analyzed. All percent recoveries were within quality control limits.

All other quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: February 12, 2002

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Joann M. Slavin
Laboratory Manager

2/12/02
JMS
2/12/02

H2M LABS, INC.

SDG NARRATIVE FOR METALS SAMPLES RECEIVED: 1/10/02 – 1/17/02 SDG#: PWG004

Page 1 of 2

For Samples:

MARCUS BLVD. CATCH BASIN	SDB-1 (15'-17')
SB-23 (5'-7')	SDB-1 (60'-62')
SB-31 (0'-2')	SDB-2 (40'-42')
SB-32 (5'-7')	SDB-4 (50'-52')
SB-39 (5'-7')	SB13 (23'-25')
SB-69 (5'-7')	

Eleven soil samples were received by H2M Labs, inc. on 1/10/02, 1/16/02 and 1/17/02 for the TCL list of metals plus tin.

Samples were prepared and analyzed in accordance with the following methods: ICP analysis was performed on a TJA61E Trace Analyzer using method 6010B. Mercury was analyzed on a Leeman PS200 using method 7471A. Cyanides were performed via the manual spectrophotometric method, using midi distillation, and read on a Sequoia Turner model 340 spectrophotometer (method 335.2).

Sample SB-23 (5'-7') was utilized for duplicate and spike reporting.

The spike analysis of sample SB-23 (5'-7') did not recover within acceptance limits for antimony, arsenic and tin. The sample was post spiked, reanalyzed and recovered acceptably for antimony. Arsenic and tin recovered slightly high. All antimony, arsenic and tin data are flagged with an "N" on Forms 1 and 5A.

The spike analysis of sample SB-23 (5'-7') did not recover within 75-125% for copper and lead. Since the sample concentration is greater than four times the spike added, no post spike or data qualifiers are required.

The duplicate analysis of sample SB-23 (5'-7') did not recover within acceptance limits for manganese. Manganese is flagged with an "*" on Forms 1 and 6.

The ICP serial dilution analysis of sample SB-23 (5'-7') did not recover within acceptance limits for sodium. Sodium is flagged with an "E" on Forms 1 and 9.

Sample SB-23 (5'-7') required dilution and reanalysis for copper to keep instrument readings within the linear range.

2/12/02
C. H. ...

H2M LABS, INC.

SDG NARRATIVE FOR METALS
SAMPLES RECEIVED: 1/10/02 – 1/17/02
SDG#: PWG004

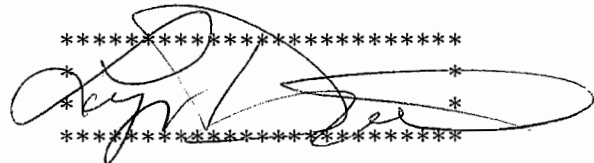
Page 2 of 2

All other quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: February 5, 2002

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Lynn Daniello
Quality Assurance Manager

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201212102

H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES SAMPLE RECEIVED: 1/10/02, 1/16/02 & 1/17/02 SDG #: PWG004

Page 1 of 2

For Samples:

MARCUS BLVD. CATCH BASIN	SDB-1 (15'-17')
SB-23 (5'-7')	SDB-1 (60'-62')
SB-31 (0'-2')	SDB-2 (40'-42')
SB-32 (5'-7')	TRIP BLANK
SB-39 (5'-7')	SDB-4 (50'-52')
SB-69 (5'-7')	SB13 (23'-25')
TRIP BLANK 1/10	TRIP BLANK

The above samples were analyzed for a specific list of volatile organic analytes plus tentatively identified compounds according to the requirements of method 8260B.

QC DATA / CALIBRATION

Sample SB-23 (5'-7') was analyzed as the matrix spike/matrix spike duplicate.

Lab fortified blanks were analyzed. All percent recoveries were within QC limits except for an 82% recovery for styrene (lower limit 85%) in the LFB 012202.

All other QC data and calibrations met the requirements of the method. The soil samples were sampled in Encore samplers, and were extruded into the prepared pre-weighed 40mL vials in the laboratory.

SAMPLE ANALYSIS

The raw data printed by the analytical software are computed for the default weight of 5 g and do not match the reported results. Those are adjusted for the specific sample weight used for each sample.

Sample SDB-1 (60'-62') was analyzed two minutes outside the tune period. The sample was reanalyzed with low internal standard area counts and surrogate recoveries outside the QC limits.

Sample SB13 (23'-25') had low internal standard area counts. Since the sample was reanalyzed previously, no sample was available for reanalysis.

The initial calibration for the heated purge had a 24% RSD for 1,1,2,2-tetrachloroethane. The heated purge continuing calibration of 1/16/02 had a 32.1% D for tetrachloroethene and a 30.8% D for toluene. The heated purge continuing calibration of 1/22/02 had a 29.8% D for bromomethane and a 26% D for styrene.

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H2M LABS, INC.

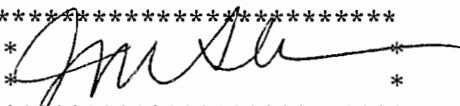
SDG NARRATIVE FOR VOLATILES ANALYSES
SAMPLE RECEIVED: 1/10/02, 1/16/02 & 1/17/02
SDG #: PWG004

Page 2 of 2

TIC compounds, identified as siloxanes, are suspected to be column bleed introduced by the analytical system. The compounds are flagged with the qualifier "X".

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: February 4, 2002


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Joann M. Slavin
Laboratory Manager

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H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES SAMPLE RECEIVED: 2/15/02, 2/20/02 & 2/22/02 SDG #: PWG005

Page 1 of 2

For Samples:

SDB-3 20-22'	2/19/02 S/S FB
SDB-3 165-167'	2/20/02 HPFB
2/14 S/S FB	TRIP BLANK 2/20
2/15 S/S FB	GW VP-5 (148-149)
TRIP BLANK 2/15	GW VP-5 (183-184)
SDB-3 205'-207' MS/MSD	2/21/02 HPFB
GW VP-5 123'-124'	TRIP BLANK 2/21

The above samples were analyzed for a specific list of volatile organic analytes plus tentatively identified compounds according to the requirements of method 8260B.

QC DATA / CALIBRATION

Sample GW VP-5 123'-124' was analyzed as the matrix spike/matrix spike duplicate.

All other QC data and calibrations met the requirements of the method. The soil samples were sampled in Encore samplers, and were extruded into the prepared pre-weighed 40mL vials in the laboratory.

The initial calibration for the heated purge had a 23.7% RSD for bromomethane. This is above the 20.5% limit but below the maximum limit of 40%.

Vinyl chloride had a 26.1% D in the continuing calibration of 2/25/02. This is above the 25% limit but under 40%.

Sample SDB-3 20-22' was reanalyzed at a medium level due to concentration levels of targeted analytes above the calibration range.

SAMPLE ANALYSIS

The raw data printed by the analytical software are computed for the default weight of 5 g and do not match the reported results. Those are adjusted for the specific sample weight used for each sample.

TIC compounds, identified as siloxanes, are suspected to be column bleed introduced by the analytical system. The compounds are flagged with the qualifier "X".

mf 2/21/02
b2 2/21/02

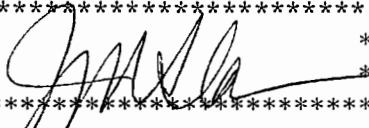
H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES
SAMPLE RECEIVED: 2/15/02, 2/20/02 & 2/22/02
SDG #: PWG005

Page 2 of 2

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: March 21, 2002

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Joann M. Slavin
Laboratory Manager

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CHIEF OF POLICE
MAR 23 2002
MAR 23 2002

H2M LABS, INC.

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS

SAMPLE RECEIVED: 2/15/02 & 2/20/02

SDG#: PWG005

Page 1 of 2

For Samples:

SDB-3 20-22'	2/15 S/S FB
SDB-3 165-167'	SDB-3 205'-207'
2/14 S/S FB	2/19/02 S/S FB

The above three soil samples and field blanks were analyzed according to the requirements of the NYSDEC ASP 10/95 method 8270C for the TCL base-neutral-acid extractable analytes.

QC DATA / CALIBRATION

No sample spike was requested, but lab fortified blanks were extracted with each of the QC batches. In the lab fortified blank (LFB) extracted with the field blanks, one analyte, 4-nitroaniline, gave a high recovery, and only one recovery (for 4-chloroaniline) was under QC limit. No sample data are affected.

Five compounds showed low recoveries in the soil LFB 2/19/02 and, respectively, one compound in the soil LFB, extracted on 2/22/02. Two of these compounds, phenanthrene and anthrathene, were found in the samples. Recoveries for those two analytes were slightly under the QC limits in the LFB. However, the surrogate recoveries in the samples were substantially higher than in the LFB, and for that reason sample data can be assumed to be within the accuracy limits for the positives.

SAMPLE ANALYSIS

Concentrations of two analytes in sample SDB-3 20-22' exceeded the calibration range. The sample was reanalyzed at a dilution, and both sets of data are reported.

The following samples contained TIC compounds that were identified as alkanes.

SDB-3 20-22'

TIC	Retention Time	Concentration $\mu\text{g/kg}$
Branched alkane	6.80	540 J
Branched alkane	7.01	1000 J
Branched alkane	8.16	450 J

PWG005 S31 2/27/02 ALW

H2M LABS, INC.

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS
SAMPLE RECEIVED: 2/15/02 & 2/20/02
SDG#: PWG005

Page 2 of 2

SDB-3 20-22'

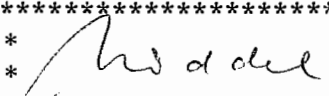
TIC	Retention Time	Concentration $\mu\text{g/kg}$
Branched alkane	6.79	510 J
Branched alkane	7.00	910 J
Branched alkane	8.14	390 J

2/19/02 S/S FB

TIC	Retention Time	Concentration $\mu\text{g/kg}$
Straight alkane	13.94	4J
Straight alkane	14.46	4 J
Straight alkane	14.9	4 J
Branched alkane	15.18	3 J
Straight alkane	15.73	9 J
Straight alkane	16.33	10 J
Straight alkane	16.63	10 J

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: February 12, 2002

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Ursula Middel
Technical Manager

0110 605 532 3/2/02

H2M LABS, INC.

SDG NARRATIVE FOR METALS SAMPLES RECEIVED: 2/15/02 & 2/20/02 SDG#: PWG005

For Samples:

SDB-3 20-22' MS/MSD	2/14 S/S FB
SDB-3 165-167'	2/15 S/S FB
SDB-3 205'-207'	2/19/02 S/S FB

Three water and three soil samples were received by H2M Labs, Inc. on 2/15/02 and 2/20/02 for cyanide and select metals analysis.

Samples were prepared and analyzed using a TJA61E Trace ICP instrument and a Leeman PS200 mercury analyzer. The following methods were utilized:

Cyanide	335.2
ICP metals	6010
Mercury	7470/7471

Sample SDB-3 20-22' (0202449-001) was utilized for metals duplicate and spike QC reporting. Sample SDB-3 205-207' (0202532-001) was utilized for cyanide duplicate and spike QC reporting.

Spike analysis of sample SDB-3 20-22' did not recover within 75-125% for copper, lead, silver and tin. Since the sample value exceeded the spike concentration by more than four times, post spikes and data qualifiers were not required. Spike recovery of antimony was not within acceptable ranges. The sample was post spiked for antimony, reanalyzed and recovered acceptably. Antimony data was reported flagged "N" on Forms 1 and 5A.

Duplicate analysis of sample SDB-3 20-22' did not recover within acceptance ranges for barium, cadmium, chromium, copper, lead, selenium, silver, tin and zinc. Associated results were reported flagged "*" on Forms 1 and 6 to note matrix inconsistencies.

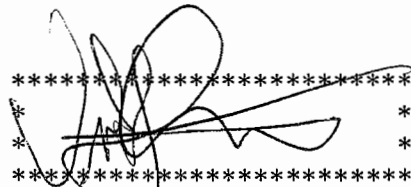
ICP serial dilution analysis of sample SDB-3 20-22' did not recover within acceptance ranges for calcium and sodium. Calcium and sodium data was reported flagged "E" on Forms 1 and 9.

No other problems were noted during the analysis of this sample group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: March 21, 2002

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Vincent Stancampiano
Vice President

PWG-005 S33 3/21/02

H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES SAMPLE RECEIVED: 2/28/02 & 3/5/02 SDG #: PWG006

For Samples:

GW VP-3 (108-109')
2/27 HP FB
TRIP BLANK 2/27
GW VP-4 (107'-108') MS/MSD
GW VP-4 (127'-128')
GW VP-4 (137'-138')
GW VP-4 (152-153)
GW VP-8 (152-153)
3/4 HP FB
3/5 HP FB
TRIP BLANK

The above water samples were analyzed for a specific list of volatile organic analytes according to the requirements of the NYSDEC ASP 10/95 method 8260B.

Sample GW-VP-4 (107'-108') was analyzed as the matrix spike duplicate.

All quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: March 22, 2002

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John M. Slavin
Laboratory Manager

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H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES

SAMPLE RECEIVED: 3/8/02, 3/11/02 & 3/12/02

SDG #: PWG007

For Samples:

GW VP-2 (97'-98')	GW VP-1 117-118
GW VP-2 (112'-113')	GW VP-11 112-113
GW VP-2 (117'-118')	SB 45 (0-2) MS/MSD
3/6 HP FB	SB 47 (0-2)
3/7 HP FB	SB 87 (0-2)
TRIP BLANK 3/7	TRIP BLANK 3/11
GW VP-1 97-98 MS/MSD	311 HPFB
GW VP-1 112-113	

The above water samples were analyzed for a specific list of volatile organic analytes according to the requirements of the NYSDEC ASP 10/95 method 8260B.

Samples GW VP-1 97-98 and SB 45 (0-2) were analyzed as matrix spike duplicates.

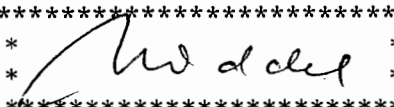
In the water lab fortified blank (LFB) for 3/12 four analyte recoveries were above the QC limits, whereas all compounds met acceptance limits in LFB 3/18/02. Recovery of 72% for bromoform in the soil LFB was under the QC limit. The samples were not positive for this analyte, and no data are affected.

In the continuous calibration of 3/15/02 with heated purge, % D for two compounds were above 25%, but met the limit of 40%.

All other quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 1, 2002

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Ursula Middel
Technical Manager

4/17/02
PWG007

H2M LABS, INC.

SDG NARRATIVE FOR SEMIVOLATILES ANALYSIS SAMPLES RECEIVED : 3/11/02 SDG#: PWG007

For Samples:

SB 45 (0-2) MS/MSD
SB 47 (0-2)
SB 87 (0-2)

The above samples were analyzed according to the requirements of the NYSDEC ASP 10/95 method 8270C for the TCL base-neutral-acid extractable analytes.

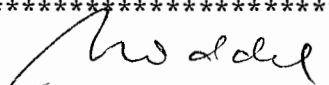
All QC data and calibrations met the requirements of the method with the following exception: The recoveries for three analytes in the lab fortified blank (LFB) were under the QC limits. The compounds were not found in the samples, and no data are affected.

The following should be noted:

- Sample SB 45 (0-2) was analyzed as the matrix spike/matrix spike duplicate.
- Sample SB-45 (0-2) was re-analyzed at a dilution to keep concentrations in the calibration range. Both sets of data are reported.
- The method blank was inadvertently spiked twice with internal standard solution. The surrogate recoveries reported on form 2 are corrected for the spike addition.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 5, 2002

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Ursula Middel
Technical Manager

PWG007 527 4/17/02 AM

H2M LABS, INC.

SDG NARRATIVE FOR METALS SAMPLES RECEIVED: 3/11/02 SDG#: PWG007

For Samples:

SB 45 (0-2) MS/MSD
SB 47 (0-2)
SB 87 (0-2)

Three soil samples were received by H2M Labs, Inc. on 3/11/02 for cyanide and select metals analysis.

Samples were prepared and analyzed using the following methods: ICP analysis was performed on a TJA61E Trace Analyzer using method 6010B. Mercury was analyzed on a Leeman PS200 using method 7471A. Cyanides were performed via the manual spectrophotometric method, using midi distillation, and read on a Sequoia Turner model 340 spectrophotometer (method 335.2).

Sample SB 45 (0-2) was utilized for spike and duplicate QC reporting.

Spike analysis of sample SB 45 (0-2) did not recover within acceptance ranges for antimony, lead and selenium. The sample was post spiked, reanalyzed and recovered acceptably for antimony and lead. Selenium recovery was less than 75% (73.2%). Antimony, lead and selenium were reported flagged "N" on Forms 1 and 5A.

Duplicate analysis of sample SB 45 (0-2) did not recover within acceptance ranges for calcium, chromium, cobalt, iron and lead. Associated data was reported flagged "*" on Forms 1 and 6.

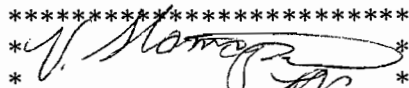
ICP serial dilution analysis of sample SB 45 (0-2) did not recover within acceptance ranges for sodium. Sodium data was reported flagged "E" on Forms 1 and 9.

Spike sample SB 45 (0-2) was not initially spiked with tin. The samples were redigested and reanalyzed on 4/4/02.

No other problems were noted during the analysis of this sample group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 15, 2002

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Vincent Stancampiano
Vice President

4/17/02
JLW
JLW

H2M LABS, INC.

SDG NARRATIVE FOR WET CHEMISTRY SAMPLES RECEIVED: 4/1/02-4/3/02 SDG#: PWG008

For Samples:

MW-3	MW-1	AR-2
MW-5	MW-2	MW-7
MW-6	MW-4	MW-9
4-1-02 FB	MW-8	MW-11
	MW-10	MW-25
	4-2-02 FB	4-3-02 FB

Ten water samples for hexavalent chromium and twelve water samples for select wet chemistry analyses were received by H2M Labs, Inc. on 4/1/02 through 4/3/02.

Samples were prepared and analyzed using the following methods:

Hexavalent Chromium	EPA 7196
Turbidity	EPA 310.1
Chloride	EPA325.2
F. Carbon Dioxide	STDM 4500CO2D
Nitrate	EPA 353.2
Sulfate	EPA 375.4
Sulfide	EPA 376.4
Dissolved Total Organic Carbon	EPA 415.1

Samples utilized for batch QC are listed on the Wet Chemistry QC Summary form.

No problems were noted during the analysis of this sample group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 19, 2002

Vincent Stancampiano
Vice President

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5/17/02
5/17/02
5/17/02

H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES SAMPLE RECEIVED: 4/1/02-4/3/02 SDG #: PWG008

For Samples:

MW-3	MW-1	AR-2
MW-5	MW-2	MW-7
MW-6	MW-4	MW-9
4-1-02 FB	MW-8	MW-11
TRIP BLANK 4/1	MW-10	MW-25
	4-2-02 FB	4-3-02 FB
	TRIP BLANK 4/2	TRIP BLANK 4/3

The above water samples were analyzed for a specific list of volatile organic analytes according to the requirements of the NYSDEC ASP 10/95 method 8260B.

Samples MW-7 was analyzed as the matrix spike/matrix spike duplicate.

In the continuous calibration of 4/3/02 and 4/5/02 % D for vinyl chloride was above 25%, but met the limit of 40%.

Due to concentration levels of targeted analytes above the calibration range, sample MW-11 was re-analyzed at a dilution. Both sets of data are submitted.

All other quality control and calibration requirements were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 16, 2002

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Joann M. Slavin
Laboratory Manager

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20020416 51762402

H2M LABS, INC.

SDG NARRATIVE FOR SEMIVOLATILE ANALYSES SAMPLE RECEIVED: 4/1/02-4/3/02 SDG #: PWG008

For Samples:

MW-3	MW-1	AR-2
MW-5	MW-2	MW-7
MW-6	MW-4	MW-9
4-1-02 FB	MW-8	MW-11
	MW-10	MW-25
	4-2-02 FB	4-3-02 FB

The above water samples were analyzed for a specific list of base-neutral/acid extractables according to the requirements of the NYSDEC ASP 10/95 method 8270C.

QC-DATA / CALIBRATION

Samples MW-7 was analyzed as the matrix spike/matrix spike duplicate.

In the lab fortified blank (LFB), bis(2-chloroethyl)ether recovery was slightly above the QC limit, and the following analytes gave much higher responses than in the calibrations: 4-chloroaniline, 3-nitroaniline, and 4-nitroaniline. The deviation between responses is under investigation. The compounds were not found in the samples, and no data are affected.

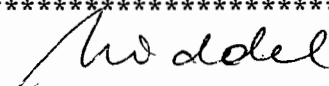
In the continuous calibration verification (CCV) on 4/9/02, 25 % D was exceeded for bis(2-chloroethyl)ether, n-nitroso-di-n-propylamine, isophorone, and 2,4-dinitrotoluene. The analytes were not found, and no quantification was affected. (The responses in the CCV were higher than the average response.)

SAMPLE ANALYSES

No problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 16, 2002

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Ursula Middel
Technical Manager

2/10/02
111 p.m.

SDG NARRATIVE FOR METALS
SAMPLE RECEIVED: 4/1/02-4/3/02
SDG #: PWG008

For Samples:

MW-3
MW-5
MW-6
4-1-02 FB

MW-1
MW-2
MW-4
MW-8
MW-10
4-2-02 FB

AR-2
MW-7 MS/MSD
MW-9
MW-11
MW-25
4-3-02 FB

The above samples were received by H2M Labs, Inc. on 4/1/02 to 4/3/02 for analysis of the TAL list of metals. Mercury is reported under separate cover.

The samples were prepared and analyzed in accordance with EPA method 6010B. ICP analysis was performed on a TJA61E Trace Analyzer.

Sample MW-7 was utilized for spike and duplicate QC reporting.

%D of the ICP serial dilution results for iron did not meet the QC limits. The data for iron were flagged with the qualifier “E” on Forms 1 and 9.

No other problems were noted during the analysis of this sample group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: May 6, 2002

```

*****
*                                     *
* no deep                          *
*                                     *
*****

```

Ursula Middel
Technical Manager

1000 x 903
5/10/2015

H2M LABS, INC.

SDG NARRATIVE FOR VOLATILES ANALYSES SAMPLE RECEIVED: 7/22/02 - 7/24/02 SDG #: PWG009

For Samples:

MW-3	MW-1	AR-2
MW-5	MW-2	MW-4 MS/MSD
MW-6	MW-8	MW-7
MW-30	MW-9	FIELD BLANK 7/24
FIELD BLANK 7/22	MW-10	TRIP BLANK 7/24
TRIP BLANK 7/22	MW-11	
	FIELD BLANK 7/23	
	TRIP BLANK 7/23	

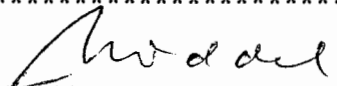
The above water samples were analyzed for a specific list of volatile organic analytes according to the requirements of the NYSDEC ASP 10/95, method 8260B.

All QC data and calibrations met the requirements of the method, and no problems were encountered with sample analysis. The following should be noted:

- Samples MW-4 was analyzed as the matrix spike/matrix spike duplicate.
- Due to concentration levels of targeted analytes above the calibration range, sample MW-2 was re-analyzed at a dilution. Both sets of data are submitted.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: July 30, 2002

*  *
*

Ursula Middel
Technical Manager

7/30/02

H2M LABS, INC.

SDG NARRATIVE FOR METALS SAMPLES RECEIVED: 7/22/02 – 7/24/02 SDG #: PWG009

For Samples:

MW-3	MW-1	AR-2
MW-5	MW-2 MS/MSD	MW-4
MW-6	MW-8	MW-7
MW-30	MW-9	FIELD BLANK 7/24
FIELD BLANK 7/22	MW-10	
	MW-11	
	FIELD BLANK 7/23	

The above samples were received by H2M Labs, Inc. for analysis of cyanide and a select list of metals, including the TAL list, tin, and mercury.

The samples were prepared and analyzed using the following methods and instruments: ICP analysis was performed on a TJA61EDV Trace Analyzer according to method 6010B. Mercury was analyzed by method 7471A on a Leeman PS200. Cyanide analysis was performed by the manual spectrophotometric method, using midi distillation, and read on a Sequoia Turner model 340 spectrophotometer according to method 335.2.

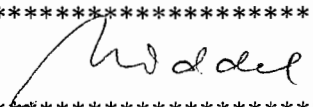
Sample MW-2 was utilized for spike and duplicate QC reporting.

All QC data and calibrations met the requirements of the method, and no problems were encountered with sample analysis. The following should be noted:

The sample spike recovery for manganese was above the QC limit, but no post spike was required, and the manganese data were not qualified. The QC limits do not apply due to the concentration of manganese found in the sample, which was above four times the spiking level.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: August 7, 2002

*  *
*

Ursula Middel
Technical Manager

8/8/02
11

H2M LABS, INC.

**SDG NARRATIVE FOR WET CHEMISTRY
SAMPLES RECEIVED: 7/22/02-7/24/02
SDG#: PWG009**

For Samples:

MW-3	MW-9
MW-5	MW-10
MW-6	MW-11
MW-30	FIELD BLANK 7/23
FIELD BLANK 7/22	AR-2
MW-1	MW-4 MS/MSD
MW-2	MW-7
MW-8	FIELD BLANK 7/24

The above referenced groundwater samples were analyzed for hexavalent chromium utilizing SW 846 method 7196.

Sample MW-4 (0207776-002) was used for spike and duplicate QC reporting.

No problems were noted during the analysis of this sample group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: August 5, 2002

*
*
*

Heidi J. Bogner
Wet Chemistry Supervisor

o:\qc\narr2002\pwg\wetchem\pwg009.doc

8/29/02

Appendix O

Investigation Derived Waste Characterization Data

COUNTY OF SUFFOLK



ROBERT J. GAFFNEY
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF PUBLIC WORKS

RICHARD J. LAYALLE, P.E.
CHIEF DEPUTY COMMISSIONER

CHARLES J. BARTHA, P.E.
COMMISSIONER

LESLIE A. MITCHEL
DEPUTY COMMISSIONER

September 12, 2002

Brian Devaux
P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618

Re: 145 Marcus Blvd., Hauppauge
Acceptability of Waste

Dear Mr. Devaux:

This is written in response to your request to dispose of the contents of 26 drums containing purge/decon water from monitoring wells at the above referenced, at the County's Bergen Point facility.

Based on data submitted and an inspection from this office it has been determined the material is acceptable for disposal.

Very truly yours,

Kevin J. Oldham
Principal Engineering Aide

KJO/cf
cc: R. Strzepek
D. Krol

SUFFOLK COUNTY IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

335 YAPHANK AVENUE

YAPHANK, N.Y. 11980

(631) 852-4010
FAX (631) 852-4150

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.220342.00

01/31/02

P.W. Grosser Engineer & Hydrogeologist
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618

ATTN: Paul Grosser

PO#:

SOURCE OF SAMPLE: Computer Circuits, #TED0001.3A

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:01/23/02 RECEIVED:01/23/02

TIME COL'D:0930

MATRIX:Extract SAMPLE: N. Leaching Pool

SAMPLE: Soil

TCLP

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Carbon Tetrachloride	ug/L	< 1		01/29/02	1	EPA8260
Chlorobenzene	ug/L	< 1		01/29/02	1	EPA8260
Chloroform	ug/L	< 1		01/29/02	1	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 1		01/29/02	1	EPA8260
1,2 Dichloroethane	ug/L	< 1		01/29/02	1	EPA8260
1,1 Dichloroethene	ug/L	< 1		01/29/02	1	EPA8260
Methyl Ethyl Ketone	ug/L	< 10		01/29/02	10	EPA8260
Tetrachloroethene	ug/L	< 1		01/29/02	1	EPA8260
1,1,2,2-tetrachloroethylene	ug/L	31		01/29/02	1	EPA8260
Vinyl Chloride	ug/L	< 1		01/29/02	1	EPA8260
Benzene	ug/L	< 1		01/29/02	1	EPA8260
TCLP Zero Headspace Extract				01/24/02		EPA1311

cc:

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.220342.00

01/31/02

P.W. Grosser Engineer & Hydrogeologist
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618

ATTN: Paul Grosser

PO#:

SOURCE OF SAMPLE: Computer Circuits, #TED0001.3A

SOURCE OF SAMPLE:

COLLECTED BY: Client DATE COL'D:01/23/02 RECEIVED:01/23/02
TIME COL'D:0930

MATRIX:Extract SAMPLE: N. Leaching Pool

SAMPLE: Soil

TCLP

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Lindane	ug/L	< 0.5		01/28/02	0.5	EPA8081
Endrin	ug/L	< 0.5		01/28/02	0.5	EPA8081
Methoxychlor	ug/L	< 1		01/28/02	1	EPA8081
Toxaphene	ug/L	< 10		01/28/02	10	EPA8081
Chlordane	ug/L	< 2		01/28/02	2	EPA8081
Heptachlor	ug/L	< 0.5		01/28/02	0.5	EPA8081
Heptachlor Epoxide	ug/L	< 0.5		01/28/02	0.5	EPA8081
2,4-D	ug/L	< 1		01/29/02	1	EPA8151
5-TP	ug/L	< 0.5		01/29/02	0.5	EPA8151
-Methylphenol (o-cresol)	ug/L	< 10		01/28/02	10	EPA8270
3-Methylphenol (m-cresol)	ug/L	< 10		01/28/02	10	EPA8270
4-Methylphenol (p-cresol)	ug/L	< 10		01/28/02	10	EPA8270
Pentachlorophenol (ms)	ug/L	< 100		01/28/02	100	EPA8270
2,4,5-Trichlorophenol	ug/L	< 10		01/28/02	10	EPA8270
2,4,6-Trichlorophenol	ug/L	< 10		01/28/02	10	EPA8270
2,4-Dinitrotoluene	ug/L	< 10		01/28/02	10	EPA8270
Hexachlorobenzene	ug/L	< 10		01/28/02	10	EPA8270
Hexachlorobutadiene	ug/L	< 10		01/28/02	10	EPA8270
Hexachloroethane	ug/L	< 10		01/28/02	10	EPA8270
Nitrobenzene	ug/L	< 10		01/28/02	10	EPA8270
Pyridine	ug/L	< 10		01/28/02	10	EPA8270

TCLP Extraction

01/24/02

EPA1311

cc:

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.220342.00

01/31/02

P.W. Grosser Engineer & Hydrogeologist
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618

ATTN: Paul Grosser

PO#:

SOURCE OF SAMPLE: Computer Circuits, #TED0001.3A

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:01/23/02 RECEIVED:01/23/02

TIME COL'D:0930

MATRIX:Extract SAMPLE: N. Leaching Pool

SAMPLE: Soil

TCLP

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/L	< 0.05		01/29/02	0.05	EPA6010
Barium as Ba	mg/L	0.98		01/29/02	0.05	EPA6010
Cadmium as Cd	mg/L	< 0.05		01/29/02	0.05	EPA6010
Chromium as Cr	mg/L	< 0.05		01/29/02	0.05	EPA6010
Lead as Pb	mg/L	0.11		01/29/02	0.05	EPA6010
Mercury as Hg	mg/L	< 0.001		01/29/02	0.001	EPA7470A
Selenium as Se	mg/L	< 0.1		01/29/02	0.1	EPA7740
Silver as Ag	mg/L	< 0.05		01/29/02	0.05	EPA6010
P Extraction				01/24/02		EPA1311

cc:

REMARKS:

DIRECTOR

rn = 2593

NYSDOH ID # 10320

Page 3 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.220342.00

01/31/02

P.W. Grosser Engineer & Hydrogeologist
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618

ATTN. Paul Grosser

PO#:

SOURCE OF SAMPLE: Computer Circuits, #TED0001.3A

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:01/23/02 RECEIVED:01/23/02

TIME COL'D:0930

MATRIX:Extract SAMPLE: N. Leaching Pool

SAMPLE: Soil

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Cyanide as CN	mg/L	< 2		01/25/02	2	EPA335.5
Sulfide as S	mg/L	< 2		01/24/02	2	EPA7.3.4.
pH (lab) units		7		01/23/02	0.1	EPA9045C
Flash Point deg C		> 100		01/24/02	25	EPA1010

cc:

REMARKS:

DIRECTOR

rn = 2594

NYSDOH ID # 10320

Page 4 of 4

Client:	PUGC
Address:	630 Johnson Ave Suite 74 Ste Bokena NY
Phone:	631 599-6353
FAX:	631 599 8705
Person receiving report:	C. Ossik
Sampled by:	R. Deane
Source:	Computer Corrupt
Job No.:	TD 087013A

[illegible][illegible][illegible]

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.220342.00

01/31/02

P.W. Grosser Engineer & Hydrogeologist
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618

ATTN: Paul Grosser

PO#:

SOURCE OF SAMPLE: Computer Circuits, #TED0001.3A

SOURCE OF SAMPLE:

COLLECTED BY: Client DATE COL'D:01/23/02 RECEIVED:01/23/02

TIME COL'D:0930

MATRIX:Extract SAMPLE: N. Leaching Pool

SAMPLE: Soil

TCLP

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Carbon Tetrachloride	ug/L	< 1		01/29/02	1	EPA8260
Chlorobenzene	ug/L	< 1		01/29/02	1	EPA8260
Chloroform	ug/L	< 1		01/29/02	1	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 1		01/29/02	1	EPA8260
1,2 Dichloroethane	ug/L	< 1		01/29/02	1	EPA8260
1,1 Dichloroethene	ug/L	< 1		01/29/02	1	EPA8260
Methyl Ethyl Ketone	ug/L	< 10		01/29/02	10	EPA8260
Tetrachloroethene	ug/L	< 1		01/29/02	1	EPA8260
1,1,2,2-tetrachloroethylene	ug/L	31		01/29/02	1	EPA8260
vinyl Chloride	ug/L	< 1		01/29/02	1	EPA8260
Benzene	ug/L	< 1		01/29/02	1	EPA8260
TCLP Zero Headspace Extract				01/24/02		EPA1311

cc:

REMARKS:

DIRECTOR

rn = 2591

NYSDOH ID # 10320

Page 1 of 4

JOB WORK ORDER

Liquid Waste Removal
an EarthCare Company
972 Nicolls Road, Deer Park, NY 11729
(631) 586-0002

153470

Arrived on job A.M./P.M.
Left job A.M./P.M.

MECHANIC Bob	HELPER Craig	DATE 9/13/67

JOB NAME		JOB PHONE	
P.W. GROSSER (COMPUTER CIRCUITS)			
ADDRESS		☐ LATE NIGHT ☐ SUNDAY ☐ HOLIDAY	
CITY			
145 MARCOS BLVD HAUTPAUGE			
BILL TO		PHONE	
ADDRESS		☐ NEW ☐ REFERRAL ☐ REPEAT	

PUMPING		
CHEMICALS		
LINE CLEANING		
SINK TUB TOILET		
LABOR		
OTHER		
PUMPED 23 DROPS		

SUB TOTAL		
TAX		
TOTAL		

Purchaser shall provide access to job site. It shall be the obligation of the Purchaser to inform the Service Company of any above or below ground or hidden perils. The Seller shall not be responsible for damage above or below ground to property or hidden perils. Signor assumes liability representatively and personally for payment of contract amount.

DATE PAID _____
CHECK NO. _____
AMT. REC'D. _____
☐ CASH ☐ M.C. ☐ VISA ☐ LEFT BILL

NET 10 DAYS. 1½% Service Charge per Month on Overdue Accounts.

GENERATOR SIGNED STATEMENT

I, _____, hereby affirm that I am the owner, or user, of the Individual Sewage Disposal Facility (septic tank/leaching facilities) located at the address of the invoice and:

(1). That the facilities to be pumped contain only sanitary sewage; (2). That I have not been notified by the Suffolk County Department of Health or the Nassau County Department of Health to have this system pumped by a licensed industrial hauler. That neither I nor any person in my family or in my employ have added any chemical solvent waste or industrial wastes of any kind to the facility to be pumped and that I make this Statement knowing that the waste will be disposed of at a Municipal Septage Treatment Facility and that in the event that any chemical solvent waste or industrial waste of any kind have been added, legal action may be undertaken by the appropriate regulatory agency against any or all parties involved.

"I, hereby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Customer's Signature Tracy Smith Date 9/13/02
Paul Grosser Consulting, Inc. for owner

Please refer to Section V. Line-by-Line Instructions for Completing EPA Form 8700-12 before completing this form. The information requested here is required by law (Section 3010 of the Resource Conservation and Recovery Act).



Notification of Regulated Waste Activity

United States Environmental Protection Agency

Date Received
(For Official Use Only)

I. Installation's EPA ID Number (Mark 'X' in the appropriate box)



A. Initial Notification



B. Subsequent Notification
(Complete item C)

C. Installation's EPA ID Number

II. Name of Installation (Include company and specific site name)

A.P.A.C.E.

III. Location of Installation (Physical address not P.O. Box or Route Number)

Street

145 MARCUS BLVD.

Street (Continued)

City or Town

HAUPAUGE

State

Zip Code

NY

11788-

County Code

County Name

SUFFOLK

IV. Installation Mailing Address (See Instructions)

Street or P.O. Box

193 MARINE ST

City or Town

FARMINGDALE

State

Zip Code

NY

11735-

V. Installation Contact (Person to be contacted regarding waste activities at site)

Name (Last)

FINKELESTEIN

(First)

RON

Job Title

PROPERTY MGR

Phone Number (Area Code and Number)

631-777-2010

Extension

VI. Installation Contact Address (See Instructions)

Fax Number

888-2411

A. Contact Address

Location

Mailing

B. Street or P.O. Box

193 MARINE ST

City or Town

FARMINGDALE

State

Zip Code

NY

11735-

VII. Ownership (See Instructions)

A. Name of Installation's Legal Owner

145 MARCUS BLVD CORP

Street, P.O. Box, or Route Number

193 MARINE ST

City or Town

FARMINGDALE

State

Zip Code

NY

11735-

Phone Number (Area Code and Number)

631-777-2010

B. Land Type

C. Owner Type

D. Change of Owner Indicator

Yes ☐ No ☒

Date Changed

Month Day Year

Print all type with ELITE type (12 characters per inch) in the unshaded areas only

ID - For Official Use Only

VIII. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes; Refer to instructions)

A. Hazardous Waste Activity

1. Generator (See instructions)
☐ a. Greater than 1000kg/mo (2,200 lbs.)
☒ b. 100 to 1000 kg/mo (200-2,200 lbs.)
☐ c. Less than 100 kg/mo (220 lbs.)
2. Transporter (Indicate Mode in boxes 1-5 below)
☐ a. For own waste only
☐ b. For commercial purposes
- Mode of Transportation
☐ 1. Air
☐ 2. Rail
☐ 3. Highway
☐ 4. Water
☐ 5. Other - specify _____
3. Treater, Storer, Disposer (at installation) Note: A permit is required for this activity; see instructions.
☐ 4. Hazardous Waste Fuel
☐ a. Generator Marketing to Burner
☐ b. Other Marketers
☐ c. Boiler and/or Industrial Furnace
☐ 1. Smelter Deferral
☐ 2. Small Quantity Exemption
☐ Indicate Type of Combustion Device(s)
☐ 1. Utility Boiler
☐ 2. Industrial Boiler
☐ 3. Industrial Furnace
☐ 5. Underground Injection Control

B. Used Oil Recycling Activities

1. Used Oil Fuel Marketer
☐ a. Marketer Directs Shipment of Oil to Off-Specification Burner
☐ b. Marketer Who First Claims the Oil Meets the Specifications
2. Used Oil Burner - Indicate Type(s) of Combustion Device(s)
☐ a. Utility Boiler
☐ b. Industrial Boiler
☐ c. Industrial Furnace
3. Used Oil Transporter - Indicate Type of Activity(ies)
☐ a. Transporter
☐ b. Transfer Facility
4. Used Oil Processor/Re-refiner - Indicate Type(s) of Activity(ies)
☐ a. Process
☐ b. Re-refine

IX. Description of Hazardous Wastes (Use additional sheets if necessary)

A. Characteristics of Nonlisted Hazardous Wastes. (Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles; See 40 CFR Parts 261.20 - 261.24)

1. Ignitable (D001) ☒ 2. Corrosive (D002) ☐ 3. Reactive (D003) ☐ 4. Toxicity Characteristic (List specific EPA hazardous waste number(s) for the Toxicity characteristic contaminant) ☒ F001

B. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; See instructions if you need to list more than 12 waste codes.)

1	2	3	4	5	6
7	8	9	10	11	12

C. Other Wastes. (State or other wastes requiring a handler to have an I.D. number. See instructions.)

1	2	3	4	5	6

X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature
Randy B. Impletum

Name and Official Title (Type or print)

Agent for 145 HATZOS Blvd Corp

Date Signed

4/27/02

XI. Comments

Note: Mail completed form to the appropriate EPA Regional or State Office. (See Section III of the booklet for addresses.)

Appendix P

First Search Report

DataMap Technology Corporation

Environmental FirstSearch™ Report

TARGET PROPERTY:

145 MARCUS BLVD

HAUPPAUGE NY 11788

Job Number: TED00-01

PREPARED FOR:

10-23-00



Tel: (781) 320-3720

Fax: (781) 320-3715

Environmental FirstSearch is a registered trademark of DataMap Technology Corporation. All rights reserved.

Environmental FirstSearch

Search Summary Report

Target Site: 145 MARCUS BLVD
HAUPPAUGE NY 11788

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2 >	ZIP	TOTALS
NPL	Y	07-27-00	1.00	0	0	0	0	0	0	0
CERCLIS	Y	08-10-00	1.00	0	3	0	0	4	0	7
RCRA TSD	Y	06-22-00	1.00	0	0	0	0	0	0	0
RCRA COR	Y	06-22-00	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	06-22-00	0.50	0	4	7	53	-	18	82
RCRA NLR	Y	06-22-00	0.50	0	2	4	48	-	7	61
ERNS	Y	01-06-00	0.50	0	1	0	2	-	2	5
NPDES	Y	10-18-99	0.50	0	0	1	3	-	2	6
TRIS	Y	07-16-98	0.50	0	2	4	6	-	0	12
State Sites	Y	04-01-00	1.00	0	2	0	1	3	2	8
Spills-1990	Y	07-01-00	0.50	0	11	8	30	-	52	101
Spills-1980	Y	10-01-99	0.50	0	3	5	28	-	36	72
SWL	Y	12-01-99	1.00	0	0	0	0	0	1	1
Permits	Y	NA	0.50	0	0	1	7	-	13	21
REG UST/AST	Y	07-01-00	0.50	1	7	11	68	-	13	100
Leaking UST	Y	07-01-00	0.50	0	7	5	27	-	4	43
- TOTALS -				1	42	46	273	7	150	519

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to DataMap Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in DataMap Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although DataMap Technology Corp. uses its best efforts to research the actual location of each site, DataMap Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of DataMap Technology Corp.'s services proceeding are signifying an understanding of DataMap Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date: 10-23-00
Requestor Name: Salvatore Tedesco
Standard: ASTM

Search Type: COORD
Job Number: TED00-01

Target Address: 145 MARCUS BLVD
HAUPPAUGE NY 11788

Demographics

Sites: 519	Non-Geocoded: 150	Population: NA
Radon: OF THE 3 HOMES TESTED, THE AVG. PCI/L LEVEL WAS 1.1		

Site Location

	<u>Degrees (Decimal)</u>	<u>Degrees (Min/Sec)</u>	<u>UTMs</u>
Longitude:	-73.245984	-73:14:46	Easting: 647939.528
Latitude:	40.812736	40:48:46	Northing: 4519238.03
		Zone:	18

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1.00 Mile(s)

Services:

ZIP				
Code	City Name	ST	Dist/Dir	Sel
11717	BRENTWOOD	NY	0.35 SE	Y
11722	CENTRAL ISLIP	NY	0.99 SE	N
11787	SMITHTOWN	NY	1.00 NE	N

	<u>Requested?</u>	<u>Date</u>
Sanborns	N	
Aerial Photographs	N	
Topo Maps (hardcopy)	N	
City Directories	N	
Title Search	N	
Municipal Reports	N	
Online Topo Map	N	

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	CERCLIS	B&K INSTRUMENTS NY0000613109/NFRAP-N	135 MARCUS BLVD HAUPPAUGE NY 11788	0.01 SE	1
2	CERCLIS	COMPUTER CIRCUITS NYD125499673/FINAL	145 MARCUS BOULEVARD HAUPPAUGE NY 11788	0.03 NE	2
3	CERCLIS	ELECTRO MOTIVE RESEARCH CORPORATION NYD981184187/NFRAP-N	35 DAVIDS DRIVE HAUPPAUGE NY 11788	0.75 NW	3
4	CERCLIS	EMR CIRCUITS NYD981184153/NFRAP-N	99 MARCUS BOULEVARD HAUPPAUGE NY 11788	0.11 SE	4
5	CERCLIS	GLARO NYD002048627/NOT PROPOSED	735 OLD WILLETS PATH HAUPPAUGE NY 11788	0.66 SE	5
6	CERCLIS	MICROWAVE POWER NYD044470680/NFRAP-N	330 OSER AVE. HAUPPAUGE NY 11788	0.88 NW	6
7	CERCLIS	UNEXCELLED CASTINGS NYD057729238/NFRAP-N	663 OLD WILLETS PATH HAUPPAUGE NY 11788	0.72 NE	7
8	RCRAGN	275 CORPARK ASSOCIATES CO NY0000254821/SGN	275 MARCUS AVE HAUPPAUGE NY 11788	0.44 NW	8
9	RCRAGN	A & Z PHARMACEUTICAL INC NYR000020164/VGN	180 OSER AVE STE 300 HAUPPAUGE NY 11788	0.41 NW	9
10	RCRAGN	AMERICAN TISSUE CORP NYD005924154/SGN	110 PLANT AVE HAUPPAUGE NY 11788	0.28 NE	10
11	RCRAGN	ANORAD CORP NYD068011543/SGN	110 OSER AVE HAUPPAUGE NY 11788	0.29 NE	11
12	RCRAGN	ANORAD CORP NYD002631455/LGN	110 OSER AVE HAUPPAUGE NY 11788	0.29 NE	11
13	RCRAGN	ANORAD TECHNOLOGY CENTER NYD065945875/SGN	100 OSER AVE HAUPPAUGE NY 11788	0.34 NE	12
14	RCRAGN	AR-KAY PACKAGING CORP NYD001635622/LGN	22 ARKWAY DR HAUPPAUGE NY 11788	0.07 SW	13
15	RCRAGN	BOUNDLESS TECHNOLOGY NYD049205602/SGN	100 MARCUS AVE HAUPPAUGE NY 11788	0.13 SW	14
16	RCRAGN	CARTER MYLES DDS - DBA DENTAL WORL NYD146542667/LGN	77 ARKAY DR HAUPPAUGE NY 11788	0.39 SW	15
17	RCRAGN	CENTRAL SEMICONDUCTOR NYR000076554/SGN	145 ADAMS AVE HAUPPAUGE NY 11788	0.50 NW	16
18	RCRAGN	CHARL INDUSTRIES NYD981873995/LGN	225 ENGINEERS RD HAUPPAUGE NY 11788	0.32 NE	17
19	RCRAGN	COLORPAK-MINEOLA MFG CO INC NYD002039972/LGN	40 MARCUS BLVD HAUPPAUGE NY 11788	0.29 SW	18
20	RCRAGN	CONTROLOTRON CORP NYD002056620/LGN	155 PLANT AVE HAUPPAUGE NY 11788	0.32 NE	19

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
21	RCRAGN	COPPOLA CREATIVE CORP NYD151257359/LGN	180 OSER AVE HAUPPAUGE NY 11788	0.41 NW	9
22	RCRAGN	COPY X-PRESS NYD986868024/LGN	102 CAIN DR BRENTWOOD NY 11717	0.43 SE	20
23	RCRAGN	DARREN STEVENS AGENCY NYD986874691/LGN	92 KANE DR BRENTWOOD NY 11717	0.43 SE	21
24	RCRAGN	DATABIT INC NYD981495070/SGN	89 ARKAY DR HAUPPAUGE NY 11788	0.47 SW	22
25	RCRAGN	DAVID REEVES STUDIO INC NYD981494883/LGN	114 CAIN DR BRENTWOOD NY 11717	0.43 SW	23
26	RCRAGN	DINGMAN DATA SYSTEMS NYD103613105/SGN	55 PLANT AVE HAUPPAUGE NY 11788	0.24 NE	24
27	RCRAGN	ELMONT MANUFACTURING CO INC NYD002049302/SGN	175 KENNEDY DR HAUPPAUGE NY 11788	0.49 SE	25
28	RCRAGN	EXTREME COLOR NYR000038224/SGN	175 ENGINEERS RD - WEST WING HAUPPAUGE NY 11788	0.40 NE	26
29	RCRAGN	G S E DYNAMICS INC NYD987023579/SGN	25 CORPORATE DR HAUPPAUGE NY 11788	0.48 NW	27
30	RCRAGN	GRIMM & NORTON INC NYD987036167/SGN	25 PLANT AVE HAUPPAUGE NY 11788	0.24 SE	28
31	RCRAGN	HAUPPAUGE COGENERATION FACILITY NYD986983351/VGN	22 ARKAY DR HAUPPAUGE NY 11788	0.07 SW	13
32	RCRAGN	I D R NYD981132657/SGN	370 VANDERBILT MOTOR PKWY HAUPPAUGE NY 11788	0.37 SE	29
33	RCRAGN	INFASHIONS INC NYD986870541/VGN	43 CORPORATE DR HAUPPAUGE NY 11788	0.49 NW	30
34	RCRAGN	JACO ELECTRONICS NYD986906865/LGN	145 OSER AVE HAUPPAUGE NY 11788	0.37 NW	31
35	RCRAGN	JONAP BUILDING NYD980527105/LGN	195 ENGINEERS RD HAUPPAUGE NY 11788	0.37 NE	32
36	RCRAGN	L N R COMMUNICATIONS INC NYD061970075/SGN	180 MARCUS BLVD HAUPPAUGE NY 11788	0.12 NW	33
37	RCRAGN	LA MER DRY CLEANERS NYD982280018/LGN	658 VANDERBUILT MOTOR PKWY HAUPPAUGE NY 11717	0.37 SE	34
38	RCRAGN	LETTS OF LONDON LTD NYD987027208/VGN	60 ARKAY DR HAUPPAUGE NY 11788	0.26 SW	35
39	RCRAGN	LITHO GRAPHICS INC NY0000006098/SGN	4 CAIN DR BRENTWOOD NY 11717	0.48 SE	36
40	RCRAGN	MANCHESTER EQUIPMENT CO NYD986944650/VGN	50 MARCUS BLVD HAUPPAUGE NY 11788	0.26 SW	37

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
41	RCRAGN	MARKS POLARIZED CORP NYD986965689/VGN	275-D MARCUS BLVD HAUPPAUGE NY 11788	0.44 NW	8
42	RCRAGN	MET-PRO CORP - SETHCO DIV NYD986914521/VGN	70 ARKAY DR HAUPPAUGE NY 11788	0.31 SW	38
43	RCRAGN	NAIDUS GROUP INC NYD986894459/SGN	77 ARKAY DR STE 2B HAUPPAUGE NY 11788	0.39 SW	15
44	RCRAGN	NASTECH PHARMACEUTICAL CO INC NYD987006079/VGN	129 OSER AVE HAUPPAUGE NY 11788	0.31 NW	39
45	RCRAGN	NATIONAL SONICS DIVISION NYD010009835/SGN	250 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NW	40
46	RCRAGN	NORTH ATLANTIC INDUSTRIES INC NYD002043958/SGN	60 PLANT AVE HAUPPAUGE NY 11788	0.25 NE	41
47	RCRAGN	NUMAX ELECTRONICS INC NYD980648125/LGN	135 ENGINEERS RD HAUPPAUGE NY 11788	0.46 NE	42
48	RCRAGN	PALL RAI, INC. NYD003907318/LGN	225 MARCUS BLVD HAUPPAUGE NY 11788	0.25 NE	43
49	RCRAGN	PAPRL AUTOMATIVE INDUSTRIES INC NYD980642433/LGN	54 OSER AVE HAUPPAUGE NY 11788	0.48 NE	44
50	RCRAGN	PASSANTE ADVERTISING ASSOCIATE NYD118213404/LGN	330 MOTOR PKWY STE 205 HAUPPAUGE NY 11788	0.35 SW	45
51	RCRAGN	PHOENIX GROUP INC NYD077504108/VGN	123 MARCUS BLVD HAUPPAUGE NY 11788	0.07 SE	46
52	RCRAGN	POST SURGICAL DIV OF GRIMM & NORTON NY0000365767/SGN	25 PLANT AVE STE 1A HAUPPAUGE NY 11788	0.24 SE	28
53	RCRAGN	PRINTING CENTER THE NYD096910377/LGN	656A MOTOR PKWY HAUPPAUGE NY 11717	0.37 SE	47
54	RCRAGN	QUANTRONIX CORP NYD043228477/LGN	225 ENGINEERS RD SMITHTOWN NY 11788	0.32 NE	17
55	RCRAGN	QUANTUM DIAGNOSTICS NYD986928299/LGN	77 ARKAY DR HAUPPAUGE NY 11788	0.39 SW	15
56	RCRAGN	ROSENBLUM CANDACE DR NYD982186736/LGN	330 MOTOR PKWY STE 302 HAUPPAUGE NY 11788	0.35 SW	45
57	RCRAGN	ROYAL PRODUCTS NYD002052058/LGN	210 OSER AVE HAUPPAUGE NY 11788	0.46 NW	48
58	RCRAGN	SIR SPEEDY PRINTING #8565 NYD986873362/LGN	89 H CABOT CT HAUPPAUGE NY 11788	0.50 SW	49
59	RCRAGN	STANDARD MEMS INC NYD054988506/LGN	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
60	RCRAGN	TELE-SIGNAL CORPORATION NYD080654668/LGN	185 OSER AVE HAUPPAUGE NY 11788	0.39 NW	51

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
61	RCRAGN	TEXACO SERVICE STATION NYD986901692/LGN	MOTOR PKWY & WASHINGTON AVE BRENTWOOD NY 11717	0.40 SW	52
62	RCRAGN	TIFFEN MANUFACTURING CORP NYD002046027/VGN	90 OSER AVE HAUPPAUGE NY 11788	0.37 NE	53
63	RCRAGN	TIME ELECTRONICS NYD072377930/LGN	70 MARCU BLVD HAUPPAUGE NY 11788	0.20 SW	54
64	RCRAGN	TOUCH OF CLASS ADO & GRAPHICS NY0000997783/SGN	175 ENGINEERS RD HAUPPAUGE NY 11788	0.40 NE	26
65	RCRAGN	TOUCH OF CLASS INC NYD982789950/LGN	80 OSER AVE HAUPPAUGE NY 11788	0.39 NE	55
66	RCRAGN	ULLMAN CO INC THE NYD001317320/SGN	250 KENNEDY DR HAUPPAUGE NY 11788	0.41 SE	56
67	RCRAGN	UNITED-GUARDIAN INC NYD980646798/LGN	230 MARCUS BLVD HAUPPAUGE NY 11788	0.29 NW	57
68	RCRAGN	VIP ADVERTISING NYD098789928/SGN	215 OSER AVE HAUPPAUGE NY 11788	0.46 NW	58
69	RCRAGN	WESTERN SUFFOLK CHIROPRACTIC NYD982187205/LGN	330 MOTOR PKWY STE 302 HAUPPAUGE NY 11788	0.35 SW	45
70	RCRAGN	WIKA INSTRUMENT CORP NYD044464584/LGN	1 CORPORATE DR HAUPPAUGE NY 11788	0.47 NW	59
71	RCRAGN	WILLOW PRESS NYD002410652/SGN	75 OSER AVE HAUPPAUGE NY 11788	0.39 NE	60
72	RCRANLR	275 CORPARK ASSOCIATES CO NY0000254821/NLR	275 MARCUS AVE HAUPPAUGE NY 11788	0.44 NW	8
73	RCRANLR	AMERICAN TISSUE CORP NYD005924154/NLR	110 PLANT AVE HAUPPAUGE NY 11788	0.28 NE	10
74	RCRANLR	ANORAD CORP NYD068011543/NLR	110 OSER AVE HAUPPAUGE NY 11788	0.29 NE	11
75	RCRANLR	ANORAD CORP NYD002631455/NLR	110 OSER AVE HAUPPAUGE NY 11788	0.29 NE	11
76	RCRANLR	ANORAD TECHNOLOGY CENTER NYD065945875/NLR	100 OSER AVE HAUPPAUGE NY 11788	0.34 NE	12
77	RCRANLR	AUDIOVOX CORP NYD987018322/NLR	150 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
78	RCRANLR	CARTER MYLES DDS - DBA DENTAL WORL NYD146542667/NLR	77 ARKAY DR HAUPPAUGE NY 11788	0.39 SW	15
79	RCRANLR	CHARL INDUSTRIES NYD981873995/NLR	225 ENGINEERS RD HAUPPAUGE NY 11788	0.32 NE	17
80	RCRANLR	COLORPAK-MINEOLA MFG CO INC NYD002039972/NLR	40 MARCUS BLVD HAUPPAUGE NY 11788	0.29 SW	18

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
81	RCRANLR	COMTECH LABORATORIES INC NYD980500581/NLR	45 OSER AVE HAUPPAUGE NY 11788	0.48 NE	62
82	RCRANLR	CONTROLOTRON CORP NYD002056620/NLR	155 PLANT AVE HAUPPAUGE NY 11788	0.32 NE	19
83	RCRANLR	COPPOLA CREATIVE CORP NYD151257359/NLR	180 OSER AVE HAUPPAUGE NY 11788	0.41 NW	9
84	RCRANLR	COPY X-PRESS NYD986868024/NLR	102 CAIN DR BRENTWOOD NY 11717	0.43 SE	20
85	RCRANLR	DARREN STEVENS AGENCY NYD986874691/NLR	92 KANE DR BRENTWOOD NY 11717	0.43 SE	21
86	RCRANLR	DATABIT INC NYD981495070/NLR	89 ARKAY DR HAUPPAUGE NY 11788	0.47 SW	22
87	RCRANLR	DAVID REEVES STUDIO INC NYD981494883/NLR	114 CAIN DR BRENTWOOD NY 11717	0.43 SW	23
88	RCRANLR	E J S ELECTRONICS INC NYD157723248/NLR	70 CAIN DR BRENTWOOD NY 11717	0.43 SE	63
89	RCRANLR	EATON CORP AIL DIVISION NYD981561772/NLR	45 OSER AVE HAUPPAUGE NY 11788	0.48 NE	62
90	RCRANLR	ELECTRO MOTIVE RESEARCH CORP. NYD052777273/NLR	99 MARCUS BLVD HAUPPAUGE NY 11788	0.11 SE	4
91	RCRANLR	ELMONT MANUFACTURING CO INC NYD002049302/NLR	175 KENNEDY DR HAUPPAUGE NY 11788	0.49 SE	25
92	RCRANLR	FRIEDMAN HARRIS PARTNERS INC NYD982742116/NLR	80 OSER AVE HAUPPAUGE NY 11788	0.39 NE	55
93	RCRANLR	GRIMM & NORTON INC NYD987036167/NLR	25 PLANT AVE HAUPPAUGE NY 11788	0.24 SE	28
94	RCRANLR	I D R NYD981132657/NLR	370 VANDERBILT MOTOR PKWY HAUPPAUGE NY 11788	0.37 SE	29
95	RCRANLR	JACO ELECTRONICS NYD986906865/NLR	145 OSER AVE HAUPPAUGE NY 11788	0.37 NW	31
96	RCRANLR	JONAP BUILDING NYD980527105/NLR	195 ENGINEERS RD HAUPPAUGE NY 11788	0.37 NE	32
97	RCRANLR	LA MER DRY CLEANERS NYD982280018/NLR	658 VANDERBUILT MOTOR PKWY HAUPPAUGE NY 11717	0.37 SE	34
98	RCRANLR	LITHO GRAPHICS INC NY0000006098/NLR	4 CAIN DR BRENTWOOD NY 11717	0.48 SE	36
99	RCRANLR	MANCHESTER EQUIPMENT CO NYD986944650/NLR	50 MARCUS BLVD HAUPPAUGE NY 11788	0.26 SW	37
100	RCRANLR	MARKS POLARIZED CORP NYD986965689/NLR	275-D MARCUS BLVD HAUPPAUGE NY 11788	0.44 NW	8

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
101	RCRANLR	MET-PRO CORP - SETHCO DIV NYD986914521/NLR	70 ARKAY DR HAUPPAUGE NY 11788	0.31 SW	38
102	RCRANLR	NAIDUS GROUP INC NYD986894459/NLR	77 ARKAY DR STE 2B HAUPPAUGE NY 11788	0.39 SW	15
103	RCRANLR	NATIONAL SONICS DIVISION NYD010009835/NLR	250 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NW	40
104	RCRANLR	NORTH ATLANTIC INDUSTRIES INC NYD002043958/NLR	60 PLANT AVE HAUPPAUGE NY 11788	0.25 NE	41
105	RCRANLR	NUMAX ELECTRONICS INC NYD980648125/NLR	135 ENGINEERS RD HAUPPAUGE NY 11788	0.46 NE	42
106	RCRANLR	PAPRL AUTOMATIVE INDUSTRIES INC NYD980642433/NLR	54 OSER AVE HAUPPAUGE NY 11788	0.48 NE	44
107	RCRANLR	PASSANTE ADVERTISING ASSOCIATE NYD118213404/NLR	330 MOTOR PKWY STE 205 HAUPPAUGE NY 11788	0.35 SW	45
108	RCRANLR	PRINTING CENTER THE NYD096910377/NLR	656A MOTOR PKWY HAUPPAUGE NY 11717	0.37 SE	47
109	RCRANLR	QUANTRONIX CORP NYD043228477/NLR	225 ENGINEERS RD SMITHTOWN NY 11788	0.32 NE	17
110	RCRANLR	QUANTUM DIAGNOSTICS NYD986928299/NLR	77 ARKAY DR HAUPPAUGE NY 11788	0.39 SW	15
111	RCRANLR	ROSENBLUM CANDACE DR NYD982186736/NLR	330 MOTOR PKWY STE 302 HAUPPAUGE NY 11788	0.35 SW	45
112	RCRANLR	ROYAL PRODUCTS NYD002052058/NLR	210 OSER AVE HAUPPAUGE NY 11788	0.46 NW	48
113	RCRANLR	RREEF FUNDS USA FUND THE NYD980646012/NLR	180 OSER AVE HAUPPAUGE NY 11788	0.41 NW	9
114	RCRANLR	SCOTT MICHAELS CARBURETORS INC NYD013524400/NLR	70 OSER AVE HAUPPAUGE NY 11788	0.42 NE	64
115	RCRANLR	SIR SPEEDY PRINTING #8565 NYD986873362/NLR	89 H CABOT CT HAUPPAUGE NY 11788	0.50 SW	49
116	RCRANLR	SIXTEEN COLOR INTL INC NYD986886489/NLR	200 ENGINEERS RD HAUPPAUGE NY 11788	0.36 NE	65
117	RCRANLR	SYMBOL TECHNOLOGIES INC NYD065973067/NLR	90 PLANT AVE HAUPPAUGE NY 11788	0.27 NE	66
118	RCRANLR	TELE-SIGNAL CORPORATION NYD080654668/NLR	185 OSER AVE HAUPPAUGE NY 11788	0.39 NW	51
119	RCRANLR	TEXACO SERVICE STATION NYD986901692/NLR	MOTOR PKWY & WASHINGTON AVE BRENTWOOD NY 11717	0.40 SW	52
120	RCRANLR	TIME ELECTRONICS NYN008001448/NLR	70 MARCUS BLVD HAUPPAUGE NY 11788	0.20 SW	54

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

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121	RCRANLR	TIME ELECTRONICS NYD072377930/NLR	70 MARCU BLVD HAUPPAUGE NY 11788	0.20 SW	54
122	RCRANLR	TOUCH OF CLASS INC NYD982789950/NLR	80 OSER AVE HAUPPAUGE NY 11788	0.39 NE	55
123	RCRANLR	UNITED INTL RESEARCH NYD050594555/NLR	230 MARCUS BLVD HAUPPAUGE NY 11788	0.29 NW	57
124	RCRANLR	WESTERN SUFFOLK CHIROPRACTIC NYD982187205/NLR	330 MOTOR PKWY STE 302 HAUPPAUGE NY 11788	0.35 SW	45
125	RCRANLR	WIKI INSTRUMENT CORP NYD044464584/NLR	1 CORPORATE DR HAUPPAUGE NY 11788	0.47 NW	59
126	ERNS	SUN RAY 548430/UNKNOWN	97 MARCUS BLVD HAUPPAUGE NY 11788	0.12 SE	67
127	ERNS	UNKNOWN 563381/UNKNOWN	END OF SUFFOLK COURT HAUPPAUGE NY 11788	0.39 NW	68
128	ERNS	562207/UNKNOWN	END OF SUFFOLK COURT HAUPPAUGE HAUPPAUGE NY 11788	0.39 NW	68
129	NPDES	PALL-RAI INC NY0108154/MINOR	HAUPPAUGE NY 11788	0.25 NE	43
130	NPDES	SCSD#18H, HEARTLAND IND PK STP NY0084514/MINOR	HAUPPAUGE NY 11788	0.48 NW	69
131	NPDES	STANDARD MICROSYSTEMS CORP NY0075833/MINOR	HAUPPAUGE NY 11788	0.28 SE	50
132	NPDES	TIFFEN MFG CORP NY0107760/MINOR	HAUPPAUGE NY 11788	0.37 NE	53
133	TRIS	APPLIED DIGITAL DATA CORP. NYD049205602/OPEN	100 MARCUS BLVD. HAUPPAUGE NY 11788	0.13 SW	14
134	TRIS	APPLIED DIGITAL DATA CORP. 11788PPLDD100MA/0	100 MARCUS BLVD. HAUPPAUGE NY 11788	0.13 SW	14
135	TRIS	ARKAY PACKAGING CORP. NYD001635622/OPEN	22 ARKAY DR. HAUPPAUGE NY 11788	0.07 SW	13
136	TRIS	ARKAY PACKAGING CORP. 11788RKYP22ARK/0	22 ARKAY DR. HAUPPAUGE NY 11788	0.07 SW	13
137	TRIS	PALL RAI MFG. CO. NYD003907318/OPEN	225 MARCUS BLVD. HAUPPAUGE NY 11788	0.25 NE	43
138	TRIS	PALL RAI MFG. CO. 11788RRSRC225MA/0	225 MARCUS BLVD. HAUPPAUGE NY 11788	0.25 NE	43
139	TRIS	ROBERT BUSSE & CO. INC. NY0000330621/OPEN	75 ARKAY DR. HAUPPAUGE NY 11788	0.35 SW	70
140	TRIS	ROBERT BUSSE & CO. INC., DBA BUSSE 11788RBRTB75ARK/0	75 ARKAY DR. HAUPPAUGE NY 11788	0.35 SW	70

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
141	TRIS	STANDARD MEMS INC. 11788STNDR35MAR/0	35 MARCUS BLVD. HAUPPAUGE NY 11788	0.28 SE	50
142	TRIS	STANDARD MICROSYSTEMS CORP. NYD054988506/OPEN	35 MARCUS BLVD. HAUPPAUGE NY 11788	0.28 SE	50
143	TRIS	ULLMAN CO. INC. NYD001317320/OPEN	250 KENNEDY DR. HAUPPAUGE NY 11788	0.41 SE	56
144	TRIS	ULLMAN CO. INC. 11788LLMNC250KE/0	250 KENNEDY DR. HAUPPAUGE NY 11788	0.41 SE	56
145	STATE	100 OSER AVENUE 152162	100 OSER AVENUE Hauppauge NY 11788	0.34 NE	12
146	STATE	COMPUTER CIRCUITS 152034	145 MARCUS BOULEVARD HAUPPAUGE NY 11788	0.03 NE	2
147	STATE	ELECTRO MOTIVE RESEARCH CORP. 152104	35 DAVIDS DRIVE HAUPPAUGE NY 11788	0.75 NW	3
148	STATE	EMR CIRCUITS, INC. 152105	99 MARCUS BLVD. HAUPPAUGE NY 11788	0.11 SE	4
149	STATE	GLARO INC. 152124	735 OLD WILLETS PATH HAUPPAUGE NY 11788	0.66 SE	5
150	STATE	UNEXCELLED CASTINGS 152019	663-671 OLD WILLETS PATH HAUPPAUGE NY 11788	0.72 NE	7
151	SPILLS	A W SPERRY 9301802/CLOSED	245 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NE	71
152	SPILLS	ACADEMY BROADWAY 9111187/ACTIVE	5 PLANT AVENUE HAUPPAUGE NY 11788	0.26 SE	72
153	SPILLS	AIL SYSTEMS 9512797/CLOSED	45 OSER AVENUE HAUPPAUGE NY 11788	0.48 NE	62
154	SPILLS	AMERICA LUNG ASSOC 9001451/CLOSED	210 MARCUS BLVD HAUPPAUGE NY 11788	0.21 NW	73
155	SPILLS	AMERICAN LOCK SUPPLY 9401767/CLOSED	90 PLANT AVENUE HAUPPAUGE NY 11788	0.27 NE	66
156	SPILLS	APEX PLASTICS INDUST 9110694/CLOSED	155 MARCUS BLVD HAUPPAUGE NY 11788	0.05 NE	74
157	SPILLS	APEX PLATIC 9509237/CLOSED	155 MARCUS BLVD HAUPPAUGE NY 11788	0.05 NE	74
158	SPILLS	APPLIED DIGITAL DATA 9109103/CLOSED	100 MARCUS BLVD HAUPPAUGE NY 11788	0.13 SW	14
159	SPILLS	ARKAY PACKAGING 9405517/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13
160	SPILLS	ARKAY PACKAGING CORP 9405200/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
161	SPILLS	AUDIOVOX 9112637/CLOSED	150 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
162	SPILLS	AUDIOVOX 9901378/ACTIVE	150 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
163	SPILLS	COMMANDER OIL 9111113/CLOSED	5 PLANT AVENUE HAUPPAUGE NY 11788	0.26 SE	72
164	SPILLS	CONTROLATRON 9201385/CLOSED	155 PLANT AVENUE HAUPPAUGE NY 11788	0.32 NE	19
165	SPILLS	ELMONT MANUFACTURING INC 9516305/CLOSED	175 KENNEDY DRIVE HAUPPAUGE NY 11788	0.49 SE	25
166	SPILLS	EUA COGENEX 9205963/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13
167	SPILLS	EVA COGENICS 9205995/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13
168	SPILLS	FIRST ALLEN PARTNER LTD 9401391/ACTIVE	89 CABOT STREET HAUPPAUGE NY 11788	0.50 SW	49
169	SPILLS	GEM ELECTRIC MFG 9110560/CLOSED	390 MOTOR PKWY HAUPPAUGE NY 11788	0.48 SE	75
170	SPILLS	GOLDEN DISTRIBUTORS 9006646/CLOSED	55 CORPORATE DRIVE HAUPPAUGE NY 11788	0.50 NW	76
171	SPILLS	JACO ELECTRONIC 9002759/CLOSED	145 OSER AVENUE HAUPPAUGE NY 11788	0.37 NW	31
172	SPILLS	JACO ELECTRONICS 9602106/CLOSED	145 OSER AVENUE HAUPPAUGE NY 11788	0.37 NW	31
173	SPILLS	LBA TRADING CO 9203299/CLOSED	145 PLANT AVENUE HAUPPAUGE NY 11788	0.31 NE	77
174	SPILLS	LILCO 9001933/CLOSED	50 PLANT AVENUE HAUPPAUGE NY 11788	0.24 NE	78
175	SPILLS	LILCO 9505882/ACTIVE	KENNEDY DRIVE BLDG 250 HAUPPAUGE NY 11788	0.41 SE	56
176	SPILLS	LILCO 9416968/CLOSED	110 PLANT AVENUE HAUPPAUGE NY 11788	0.28 NE	10
177	SPILLS	LILCO 9002553/CLOSED	110 PLANT AVENUE HAUPPAUGE NY 11788	0.28 NE	10
178	SPILLS	LILCO 9501858/CLOSED	175 MARCUS BLVD HAUPPAUGE NY 11788	0.11 NE	79
179	SPILLS	NASKA PHARMACUTICAL 9004234/CLOSED	55 PLANT AVENUE HAUPPAUGE NY 11788	0.24 NE	24
180	SPILLS	PANOR CORP 9009475/CLOSED	125 CABOT COURT HAUPPAUGE NY 11788	0.48 SW	80

Environmental FirstSearch

Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
181	SPILLS	QUALITY SUPPLIES 9008769/CLOSED	160 OSER AVENUE HAUPPAUGE NY 11788	0.40 NW	81
182	SPILLS	QUOIZEL COMPANY 9102955/CLOSED	325 KENNEDY DRIVE HAUPPAUGE NY 11788	0.19 SE	82
183	SPILLS	REEF CORP 9403544/CLOSED	180 OSER AVENUE HAUPPAUGE NY 11788	0.41 NW	9
184	SPILLS	REUTERS AMERICA INC 9707346/CLOSED	360 MOTOR PARKWAY HAUPPAUGE NY 11788	0.35 SE	83
185	SPILLS	REUTERS NEWS AGENCY 9203356/CLOSED	360 MOTOR PKWY HAUPPAUGE NY 11788	0.35 SE	83
186	SPILLS	STANCE INDUSTRIES 8911730/CLOSED	60 OSER AVENUE HAUPPAUGE NY 11788	0.45 NE	84
187	SPILLS	STANDARD MICROSYSTEMS 9003552/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
188	SPILLS	STANDARD MICROSYSTEMS 9104024/CLOSED	300 KENNEDY DRIVE HAUPPAUGE NY 11788	0.20 SE	85
189	SPILLS	STANDARD MICROWAVE SYSTEM 9802924/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
190	SPILLS	TEXACO S/S 9001613/CLOSED	MOTOR PKWY & WASHINGTON A BRENTWOOD NY 11717	0.40 SW	52
191	SPILLS	U.A COGENEX 9104259/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13
192	SPILLS	UNK 9406831/CLOSED	IN FRONT OF 85 MARCUS BLV HAUPPAUGE NY 11788	0.13 SW	86
193	SPILLS	UNK 9506943/CLOSED	135 MARCUS BLVD HAUPPAUGE NY 11788	0.01 SE	1
194	SPILLS	UNK 9202571/CLOSED	60 OSER AVE HAUPPAUGE NY 11788	0.45 NE	84
195	SPILLS	UNK 8910754/CLOSED	90 PLANT AVENUE HAUPPAUGE NY 11788	0.27 NE	66
196	SPILLS	UNK 9003266/CLOSED	205 MARCUS BLVD HAUPPAUGE NY 11788	0.19 NE	87
197	SPILLS	UNK 9211888/CLOSED	160 OSER AVE HAUPPAUGE NY 11788	0.40 NW	81
198	SPILLS	WILLOW PRESS 9202725/CLOSED	75 OSER AVENUE HAUPPAUGE NY 11788	0.39 NE	60
199	SPILLS	9604126/CLOSED	MARCUS BLVD & OSER AVENUE HAUPPAUGE NY 11788	0.31 NE	88
200	SPILLS80	BEST TEMP.MECHANICAL CORP 8607959/CLOSED	129 OSER AVENUE HAUPPAUGE NY 11788	0.31 NW	39

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
201	SPILLS80	CIBRO 8700006/CLOSED	150 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
202	SPILLS80	HATCO WILLOW 8607321/CLOSED	75 OSER AVENUE HAUPPAUGE NY 11788	0.39 NE	60
203	SPILLS80	LAS ENERGY CORPORATION 8605921/CLOSED	45 OSER AVENUE HAUPPAUGE NY 11788	0.48 NE	62
204	SPILLS80	LILCO 8801434/CLOSED	230 MARKET BLVD HAUPPAUGE NY 11788	0.29 NW	57
205	SPILLS80	LILCO 8710757/CLOSED	225 MARCUS BLVD HAUPPAUGE NY 11788	0.25 NE	43
206	SPILLS80	LNR COMMUNICATIONS 8700099/CLOSED	180 MARCUS BLVD HAUPPAUGE NY 11788	0.12 NW	33
207	SPILLS80	MORGAN OIL TERMINALS CORP 8900915/CLOSED	89 ARKAY DRIVE HAUPPAUGE NY 11788	0.47 SW	22
208	SPILLS80	NATIONAL SONICS 8607146/CLOSED	250 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NW	40
209	SPILLS80	NORTHVILLE INDUSTRIES 8606298/CLOSED	100 MARCUS BLVD HAUPPAUGE NY 11788	0.13 SW	14
210	SPILLS80	NUMAX ELECTRONICS 8607981/CLOSED	135 ENGINEERS ROAD HAUPPAUGE NY 11788	0.46 NE	42
211	SPILLS80	RAI RESEARCH CORP 8710375/CLOSED	225 MARCUS BLVD HAUPPAUGE NY 11788	0.25 NE	43
212	SPILLS80	REEF FUNDS 8805140/CLOSED	180 OSER AVENUE HAUPPAUGE NY 11788	0.41 NW	9
213	SPILLS80	RREEF FUNDS 8906688/CLOSED	200 OSER AVENUE HAUPPAUGE NY 11788	0.43 NW	89
214	SPILLS80	RREEF FUNDS 8906172/CLOSED	185 OSER AVENUE HAUPPAUGE NY 11788	0.39 NW	51
215	SPILLS80	SAV-ON FUEL 8709454/CLOSED	360 MOTOR PARKWAY HAUPPAUGE NY 11788	0.35 SE	83
216	SPILLS80	SIEMANS DATA SYSTEMS 8900491/CLOSED	89 ARKAY DRIVE HAUPPAUGE NY 11788	0.47 SW	22
217	SPILLS80	STANDARD MICRO SYS CORP 8606106/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
218	SPILLS80	STANDARD MICRO SYSTEMS 8606600/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
219	SPILLS80	STANDARD MICRO SYSTEMS 8708182/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
220	SPILLS80	STANDARD MICROSYSTEMS 8800116/CLOSED	80 ARKAY DRIVE HAUPPAUGE NY 11788	0.41 SW	90

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
221	SPILLS80	STANDARD MICROSYSTEMS 8702539/CLOSED	110 MARCUS BLVD HAUPPAUGE NY 11788	0.11 SW	91
222	SPILLS80	STANDARD MICROSYSTEMS 8702085/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
223	SPILLS80	STANDARD MICROSYSTEMS 8800247/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
224	SPILLS80	STANDARD MICROSYSTEMS 8700160/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
225	SPILLS80	STANDARD MICROSYSTEMS 8604398/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
226	SPILLS80	STANDARD MICROSYSTEMS 8800094/CLOSED	80 ARKAY DRIVE HAUPPAUGE NY 11788	0.41 SW	90
227	SPILLS80	STANDARD MICROSYSTEMS 8800332/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
228	SPILLS80	STD. MIRCO SYS 8801976/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
229	SPILLS80	SUFFOLK KEROSENE 8700283/CLOSED	150 ENGINEERS ROAD HAUPPAUGE NY 11788	0.43 NE	92
230	SPILLS80	TIFFEN MAN F CORP 8705521/CLOSED	90 OSER AVENUE HAUPPAUGE NY 11788	0.37 NE	53
231	SPILLS80	ULLMAN CO 8601452/CLOSED	250 KENNEDY DRIVE HAUPPAUGE NY 11788	0.41 SE	56
232	SPILLS80	UNK 8704775/CLOSED	100 MARCUS BLVD HAUPPAUGE NY 11788	0.13 SW	14
233	SPILLS80	UNK 8706471/CLOSED	60 PLANT AVENUE HAUPPAUGE NY 11788	0.25 NE	41
234	SPILLS80	VOID 8607936/CLOSED	135 ENGINEER ROAD HAUPPAUGE NY 11788	0.46 NE	42
235	SPILLS80	8703394/CLOSED	35 MARCUS BLVD. HAUPPAUGE NY 11788	0.28 SE	50
236	PERMITS	BERTUCCI S BRICK OVEN PIZZERIA 1-0238937/NSIGPCI	HAUPPAUGE NY 11788	0.32 SE	93
237	PERMITS	BYRNE INDUSTRIES INC. 1-0199401/NSIGIND	SMITHTOWN NY 11788	0.44 SE	94
238	PERMITS	F.R.E.E. BUILDING (C08-91-024) 1-0134937/NSIGPCI	SMITHTOWN NY 11788	0.35 NE	95
239	PERMITS	FAIRWOOD WEST AT AHUPPAUGE (C08-89- 1-0221651/NSIGPCI	Hauppauge NY 11788	0.48 NE	96
240	PERMITS	HEARTLAND IND.PARK STP (SCSD #18N) 1-0084514/SSIGMON	SMITHTOWN NY 11788	0.48 NW	69

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
241	PERMITS	PALL-RAI INC. 1-0108154/SSIGIND	HAUPPAUGE NY 11788	0.25 NE	43
242	PERMITS	STANDARD MICROSYSTEMS CORP. 1-0075833/SSIGIND	HAUPPAUGE NY 11788	0.28 SE	50
243	PERMITS	TIFFEN MFG CORP 1-0107760/SSIGIND	HAUPPAUGE NY 11788	0.37 NE	53
244	UST	180 OSER AVENUE S8-0187	180 OSER AVE HAUPPAUGE NY 11788	0.41 NW	9
245	UST	A & B SALES S8-0579	145 KENNEDY DR HAUPPAUGE NY 11788	0.49 SE	97
246	UST	A W SPERRY S8-0576	245 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NE	71
247	UST	ACADEMY BROADWAY CORP S8-0455	5 PLANT AVE HAUPPAUGE NY 11788	0.26 SE	72
248	UST	ALUFOIL PRODUCTS CO INC S8-0320	135 OSER AVE HAUPPAUGE NY 11788	0.33 NW	98
249	UST	AMERICAN SPECIALTIES S8-0549	150 ENGINEERS RD HAUPPAUGE NY 11788	0.43 NE	92
250	UST	AMERICAN TISSUE CORP S8-0326	110 PLANT AVE HAUPPAUGE NY 11788	0.28 NE	10
251	UST	AMERICAN TISSUE CORP S8-0192	135 ENGINEERS RD HAUPPAUGE NY 11788	0.46 NE	42
252	UST	ANORAD CORP S8-0460	110 OSER AVE HAUPPAUGE NY 11788	0.29 NE	11
253	UST	APEX PLASTIC INDUSTRIES S8-0350	155 MARCUS BLVD HAUPPAUGE NY 11788	0.05 NE	74
254	UST	ARKAY PACKAGING CORP S8-0104	22 ARKAY DR HAUPPAUGE NY 11788	0.07 SW	13
255	UST	ATLANTIC PAPER & FOIL S8-0523	325 KENNEDY DR HAUPPAUGE NY 11788	0.19 SE	82
256	UST	AUDIOVOX CORP S8-0544	15 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
257	UST	AUTONUMERICS INC S8-0500	120 PLANT AVE HAUPPAUGE NY 11788	0.29 NE	99
258	UST	BAYSHORE MOVING STGE S8-0330	265 MARCUS BLVD HAUPPAUGE NY 11788	0.40 NW	100
259	UST	BEAUTY LABS INC S8-0490	60 OSER AVE HAUPPAUGE NY 11788	0.45 NE	84
260	UST	BELTRONICS CORP S8-0132	123 MARCUS BLVD HAUPPAUGE NY 11788	0.07 SE	46

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
261	UST	CELLULAR AUDIOVOX COMMUNICATIO S8-0289	185 OSER AVE HAUPPAUGE NY 11788	0.39 NW	51
262	UST	CENTRAL STATE INDUSTRIES S8-0437	89 SUFFOLK CT HAUPPAUGE NY 11788	0.42 NW	101
263	UST	CHARLCO BLDG S8-0562	200 ENGINEERS RD HAUPPAUGE NY 11788	0.36 NE	65
264	UST	COLORPAK MINEOLA MFG CO INC S8-0189	40 MARCUS BLVD HAUPPAUGE NY 11788	0.29 SW	18
265	UST	COMPUTER TERMINAL SYS DUP SEE S8-0136	89 ARKAY DR HAUPPAUGE NY 11788	0.47 SW	22
266	UST	CONTROLOTRON CORP S8-0251	155 PLANT AVE HAUPPAUGE NY 11788	0.32 NE	19
267	UST	COSGROVE AIRCRAFT SVC INC S8-0493	70 OSER AVE HAUPPAUGE NY 11788	0.42 NE	64
268	UST	CR MANAGEMENT INC S8-0147	210 MARCUS BLVD HAUPPAUGE NY 11788	0.21 NW	73
269	UST	CRESCENT COPPER CORP, - DUP SEE S8-0464	25 PLANT AVE HAUPPAUGE NY 11788	0.24 SE	28
270	UST	CRESCENT COPPER CORP -OOB- S8-0249	25 PLANT AVE HAUPPAUGE NY 11788	0.24 SE	28
271	UST	CUBIC TOLL SYSTEMS -OOB- S8-0407	89 ARKAY DR HAUPPAUGE NY 11788	0.47 SW	22
272	UST	DATABIT INC S8-0242	180 OSER AVE HAUPPAUGE NY 11788	0.41 NW	9
273	UST	DISPLAY PRESENTATION S8-0221	175 KENNEDY DR HAUPPAUGE NY 11788	0.49 SE	25
274	UST	EASTON MARKETING INC S8-0212	175 MARCUS BLVD HAUPPAUGE NY 11788	0.11 NE	79
275	UST	EATON CORP S8-0273	45 OSER AVE HAUPPAUGE NY 11788	0.48 NE	62
276	UST	EMR CIRCUITS INC S8-0205	89 CABOT CT HAUPPAUGE NY 11788	0.50 SW	49
277	UST	ETTINGER DISPLAYS INC S8-0200	63 OSER AVE HAUPPAUGE NY 11788	0.45 NE	102
278	UST	GEM ELECTRIC MFG CO INC S8-0152	390 VANDERBILT MOTOR PKW HAUPPAUGE NY 11788	0.48 SE	75
279	UST	H P M PROPERTY COMMERCIAL WARE S8-0171	89 CABOT CT HAUPPAUGE NY 11788	0.50 SW	49
280	UST	HAUPPAUGE COMPUTER WAREHOUSE S8-0110	91 CABOT CT HAUPPAUGE NY 11788	0.50 SW	103

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
281	UST	HEARTLAND STP S8-0556	OSER AVE HAUPPAUGE NY 11788	0.48 NW	69
282	UST	I D R S8-0275	370 MOTOR PKWY HAUPPAUGE NY 11788	0.37 SE	29
283	UST	I D R --DUP SEE 8-0275 S8-0469	370 MOTOR PKY HAUPPAUGE NY 11788	0.37 SE	29
284	UST	IBR/REUTERS LTD S8-0379	360 MOTOR PKWY HAUPPAUGE NY 11788	0.35 SE	83
285	UST	IND. BLDG S8-0457	145 MARCUS BLVD HAUPPAUGE NY 11788	0.03 NE	2
286	UST	INDUSTRIAL BLDG S8-0360	55 PLANT AVE HAUPPAUGE NY 11788	0.24 NE	24
287	UST	INDUSTRIAL BLDG S8-0547	80 OSER AVE HAUPPAUGE NY 11788	0.39 NE	55
288	UST	JACO ELECTRONICS INC S8-0344	145 OSER AVE HAUPPAUGE NY 11788	0.37 NW	31
289	UST	JOSEPH H STOMEL & SONS S8-0213	55 CORPORATE DR HAUPPAUGE NY 11788	0.50 NW	76
290	UST	L N R COMMUNICATIONS S8-0085	70 SUFFOLK CT HAUPPAUGE NY 11788	0.44 NW	104
291	UST	LBA TRADING S8-0459	145 PLANT AVE HAUPPAUGE NY 11788	0.31 NE	77
292	UST	LN R COMMUNICATION INC S8-0239	180 MARCUS BLVD HAUPPAUGE NY 11788	0.12 NW	33
293	UST	MANCHESTER EQUIPMENT S8-0627	160 OSER AVE HAUPPAUGE NY 11788	0.40 NW	81
294	UST	MANCHESTER EQUIPMENT CO INC S8-0474	50 MARCUS BLVD HAUPPAUGE NY 11788	0.26 SW	37
295	UST	MULTI TENANT BLDG S5-0183	350 MOTOR PKWY HAUPPAUGE NY 11788	0.35 SE	105
296	UST	NATURE S BEST S8-0559	195 ENGINEERS RD HAUPPAUGE NY 11788	0.37 NE	32
297	UST	NORTH ATLANTIC INDUSTRIES S8-0470	60 PLANT AVE HAUPPAUGE NY 11788	0.25 NE	41
298	UST	OMEGA DISPLAY CORP S8-0338	195 OSER AVE HAUPPAUGE NY 11788	0.40 NW	106
299	UST	PALL RAI MFG CO S8-0156	225 MARCUS BLVD HAUPPAUGE NY 11788	0.25 NE	43
300	UST	PALL RAI, INC. CBS1-000161/INACTIVE	225 MARCUS BLVD. HAUPPAUGE NY 11788	0.25 NE	43

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
301	UST	PANOR CORP S8-0222	125 CABOT CT HAUPPAUGE NY 11788	0.48 SW	80
302	UST	PRO TEK S8-0527	73 OSER AVE HAUPPAUGE NY 11788	0.40 NE	107
303	UST	ROYAL PRODUCTS DIV CURRAN MFG S8-0241	210 OSER AVE HAUPPAUGE NY 11788	0.46 NW	48
304	UST	RV ELECTRIC SUPPLY CO S8-0216	54 OSER AVE HAUPPAUGE NY 11788	0.48 NE	44
305	UST	SETHCO DIV MET PRO CORP S8-0298	70 ARKAY DR HAUPPAUGE NY 11788	0.31 SW	38
306	UST	SEWER DISTRICT #18H-HEARTLAND INDUS CBS1-000336/ACTIVE FACILITY	OSER AVENUE HAUPPAUGE NY 11788	0.48 NW	69
307	UST	SIXTEEN COLOR INTERNATIONAL IN S8-0519	200 ENGINEERS ROAD HAUPPAUGE NY 11788	0.36 NE	65
308	UST	SOUTHERN CONTAINER S8-0409	115 ENGINEERS RD HAUPPAUGE NY 11788	0.49 NE	108
309	UST	STANDARD MEMS, INC. CBS1-000420/ACTIVE FACILITY	35 MARCUS BOULEVARD HAUPPAUGE NY 11788	0.28 SE	50
310	UST	STANDARD MICRO SYSTEMS S8-0055	80 ARKAY DR HAUPPAUGE NY 11788	0.41 SW	90
311	UST	STANDARD MICRO SYSTEMS S8-0323	350 KENNEDY DR HAUPPAUGE NY 11788	0.15 SE	109
312	UST	STANDARD MICROSYSTEMS S8-0179	110 MACUS BLVD HAUPPAUGE NY 11788	0.11 SW	91
313	UST	STANDARD MICROSYSTEMS S8-0198	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
314	UST	SUFFOLK COUNTY COMM COLLEGE S8-0302	205 OSER AVE HAUPPAUGE NY 11788	0.43 NW	110
315	UST	SUN RIVER DATA SYSTEM S8-0163	100 MARCUS BLVD HAUPPAUGE NY 11788	0.13 SW	14
316	UST	TEXACO S/S #13-092-087 S5-0200	642 WASHINGTON AVE BRENTWOOD NY 11788	0.40 SW	52
317	UST	TIFFEN MFG CORP S8-0236	90 OSER AVE HAUPPAUGE NY 11788	0.37 NE	53
318	UST	TIME ELECTRIC S8-0466	70 MARCUS BLVD HAUPPAUGE NY 11788	0.20 SW	54
319	UST	TWIN TOWER #2 S8-0637	330 MOTOR PKWY HAUPPAUGE NY 11788	0.35 SW	45
320	UST	TWIN TOWERS S8-0553	350 MOTOR PKY HAUPPAUGE NY 11788	0.35 SE	105

Environmental FirstSearch

Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
321	UST	UCP ASSOCIATION OF GREATER SUF S8-0280	250 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NW	40
322	UST	ULLMAN COMPANY INC S8-0204	250 KENNEDY DR HAUPPAUGE NY 11788	0.41 SE	56
323	UST	UNITED-GUARDIAN INC S8-0230	230 MARCUS BLVD HAUPPAUGE NY 11788	0.29 NW	57
324	UST	UP PROPERTIES MULTI-OCCUPIED S8-0631	129 OSER AVE HAUPPAUGE NY 11788	0.31 NW	39
325	UST	V I P ADVERTISING INC S8-0592	215 OSER AVE HAUPPAUGE NY 11788	0.46 NW	58
326	UST	VANDERBILT ASSOC S8-0593	90 PLANT AVE HAUPPAUGE NY 11788	0.27 NE	66
327	UST	VANDERBILT ASSOCIATES S8-0546	65 OSER AVE HAUPPAUGE NY 11788	0.44 NE	111
328	UST	VANDERBILT ASSOCIATES S8-0545	50 OSER AVE HAUPPAUGE NY 11788	0.49 NE	112
329	UST	WIH COMMUNICATIONS S8-0438	200 OSER AVE HAUPPAUGE NY 11788	0.43 NW	89
330	UST	WILLOW PRESS INC S8-0211	75 OSER AVE HAUPPAUGE NY 11788	0.39 NE	60
331	LUST	A W SPERRY 9301802/CLOSED	245 MARCUS BLVD HAUPPAUGE NY 11788	0.33 NE	71
332	LUST	ACADEMY BROADWAY 9111187/ACTIVE	5 PLANT AVENUE HAUPPAUGE NY 11788	0.26 SE	72
333	LUST	AMERICA LUNG ASSOC 9001451/CLOSED	210 MARCUS BLVD HAUPPAUGE NY 11788	0.21 NW	73
334	LUST	AMERICAN LOCK SUPPLY 9401767/CLOSED	90 PLANT AVENUE HAUPPAUGE NY 11788	0.27 NE	66
335	LUST	APEX PLASTICS INDUST 9110694/CLOSED	155 MARCUS BLVD HAUPPAUGE NY 11788	0.05 NE	74
336	LUST	ARKAY PACKAGING 9405517/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13
337	LUST	ARKAY PACKAGING CORP 9405200/CLOSED	22 ARKAY DRIVE HAUPPAUGE NY 11788	0.07 SW	13
338	LUST	AUDIOVOX 9112637/CLOSED	150 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
339	LUST	AUDIOVOX 9901378/ACTIVE	150 MARCUS BLVD HAUPPAUGE NY 11788	0.04 NW	61
340	LUST	BEST TEMP.MECHANICAL CORP 8607959/CLOSED	129 OSER AVENUE HAUPPAUGE NY 11788	0.31 NW	39

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
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JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
341	LUST	CONTROLATRON 9201385/CLOSED	155 PLANT AVENUE HAUPPAUGE NY 11788	0.32 NE	19
342	LUST	ELMONT MANUFACTURING INC 9516305/CLOSED	175 KENNEDY DRIVE HAUPPAUGE NY 11788	0.49 SE	25
343	LUST	FIRST ALLEN PARTNER LTD 9401391/ACTIVE	89 CABOT STREET HAUPPAUGE NY 11788	0.50 SW	49
344	LUST	GEM ELECTRIC MFG 9110560/CLOSED	390 MOTOR PKWY HAUPPAUGE NY 11788	0.48 SE	75
345	LUST	GOLDEN DISTRIBUTORS 9006646/CLOSED	55 CORPORATE DRIVE HAUPPAUGE NY 11788	0.50 NW	76
346	LUST	JACO ELECTRONIC 9002759/CLOSED	145 OSER AVENUE HAUPPAUGE NY 11788	0.37 NW	31
347	LUST	JACO ELECTRONICS 9602106/CLOSED	145 OSER AVENUE HAUPPAUGE NY 11788	0.37 NW	31
348	LUST	LBA TRADING CO 9203299/CLOSED	145 PLANT AVENUE HAUPPAUGE NY 11788	0.31 NE	77
349	LUST	LNR COMMUNICATIONS 8700099/CLOSED	180 MARCUS BLVD HAUPPAUGE NY 11788	0.12 NW	33
350	LUST	MORGAN OIL TERMINALS CORP 8900915/CLOSED	89 ARKAY DRIVE HAUPPAUGE NY 11788	0.47 SW	22
351	LUST	NASKA PHARMACUTICAL 9004234/CLOSED	55 PLANT AVENUE HAUPPAUGE NY 11788	0.24 NE	24
352	LUST	NORTHVILLE INDUSTRIES 8606298/CLOSED	100 MARCUS BLVD HAUPPAUGE NY 11788	0.13 SW	14
353	LUST	NUMAX ELECTRONICS 8607981/CLOSED	135 ENGINEERS ROAD HAUPPAUGE NY 11788	0.46 NE	42
354	LUST	QUOIZEL COMPANY 9102955/CLOSED	325 KENNEDY DRIVE HAUPPAUGE NY 11788	0.19 SE	82
355	LUST	RAI RESEARCH CORP 8710375/CLOSED	225 MARCUS BLVD HAUPPAUGE NY 11788	0.25 NE	43
356	LUST	REUTERS AMERICA INC 9707346/CLOSED	360 MOTOR PARKWAY HAUPPAUGE NY 11788	0.35 SE	83
357	LUST	REUTERS NEWS AGENCY 9203356/CLOSED	360 MOTOR PKWY HAUPPAUGE NY 11788	0.35 SE	83
358	LUST	RREEF FUNDS 8906172/CLOSED	185 OSER AVENUE HAUPPAUGE NY 11788	0.39 NW	51
359	LUST	RREEF FUNDS 8906688/CLOSED	200 OSER AVENUE HAUPPAUGE NY 11788	0.43 NW	89
360	LUST	SIEMANS DATA SYSTEMS 8900491/CLOSED	89 ARKAY DRIVE HAUPPAUGE NY 11788	0.47 SW	22

***Environmental FirstSearch
Sites Summary Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
361	LUST	STANDARD MICRO SYSTEMS 8708182/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
362	LUST	STANDARD MICROSYSTEMS 8800094/CLOSED	80 ARKAY DRIVE HAUPPAUGE NY 11788	0.41 SW	90
363	LUST	STANDARD MICROSYSTEMS 8800116/CLOSED	80 ARKAY DRIVE HAUPPAUGE NY 11788	0.41 SW	90
364	LUST	STANDARD MICROSYSTEMS 8800247/CLOSED	35 MARCUS BLVD HAUPPAUGE NY 11788	0.28 SE	50
365	LUST	STANDARD MICROSYSTEMS 8702539/CLOSED	110 MARCUS BLVD HAUPPAUGE NY 11788	0.11 SW	91
366	LUST	TIFFEN MAN F CORP 8705521/CLOSED	90 OSER AVENUE HAUPPAUGE NY 11788	0.37 NE	53
367	LUST	ULLMAN CO 8601452/CLOSED	250 KENNEDY DRIVE HAUPPAUGE NY 11788	0.41 SE	56
368	LUST	WILLOW PRESS 9202725/CLOSED	75 OSER AVENUE HAUPPAUGE NY 11788	0.39 NE	60
369	LUST	8607936/CLOSED	135 ENGINEER ROAD HAUPPAUGE NY 11788	0.46 NE	42

Environmental FirstSearch

Sites Summary Report

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JOB: TED00-01

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ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
370	RCRAGN	ANORAD LINEAR MOTOR DIV NYR000044974/SGN	135 RICEFIELD LANE HAUPPAUGE NY 11788	NON GC	
371	RCRAGN	B J S WHOLESALE CLUB 0049 NYR000035303/SGN	1000 OLD NICHOLS RD ISLANDIA NY 11788	NON GC	
372	RCRAGN	FIL-COIL NYR000059089/SGN	901 MOTOR PKWY HAUPPAUGE NY 11788	NON GC	
373	RCRAGN	JAMIE & JAE CLEANERS INC NYR000066159/SGN	574 VETERANS HWY HAUPPAUGE NY 11788	NON GC	
374	RCRAGN	KNOGO NORTH AMERICA INC NYR000059105/VGN	350 WIRELESS BLVD HAUPPAUGE NY 11788	NON GC	
375	RCRAGN	M W H CORP NYR000059279/SGN	95 MARCUS BLVD HAUPPAUGE NY 11788	NON GC	
376	RCRAGN	MODERN ALBUM CO LEE HALPERN NYD001331578/LGN	GILPIN AVE HAUPPAUGE NY 11788	NON GC	
377	RCRAGN	NYSDOT BIN 1049430 NYR000008904/LGN	VANDERBILT MOTOR PKWY OVER HAUPPAUGE NY 11788	NON GC	
378	RCRAGN	NYSDOT BIN 1058812 NYD986887032/LGN	ROBERT MOSES CAUSEWAY HAUPPAUGE NY 11788	NON GC	
379	RCRAGN	RECKSON ASSOCIATES NYD986896884/SGN	150 MOTOR PKWY HAUPPAUGE NY 11788	NON GC	
380	RCRAGN	ROBENA PROPERTIES INC NYR000063065/LGN	35 HOFFMAN ST HAUPPAUGE NY 11788	NON GC	
381	RCRAGN	S C I MFG NYR000065375/SGN	380 B RABRO DR HAUPPAUGE NY 11788	NON GC	
382	RCRAGN	SCWA MACARTHUR BLVD TANK NYR000085175/SGN	MACARTHUR BLVD S OF HAUPPAUGE NY 11788	NON GC	
383	RCRAGN	SHOPRITE STORE 1111 NYR000061408/SGN	355 NESCONSET HWY HAUPPAUGE NY 11788	NON GC	
384	RCRAGN	EXPRESSWAY GRAPHICS NYR000047035/LGN	66 CAIN DR BRENTWOOD NY 11717	NON GC	
385	RCRAGN	ISLIP TOWN SONIA RD LANDFILL REMEDI NYR000066902/SGN	CORBIN AVE AT GRAND BLVD WEST BRENTWOOD NY 11717	NON GC	
386	RCRAGN	LILCO - BRENTWOOD SUBSTATION NYD986889731/SGN	CROOKED HILL RD BRENTWOOD NY 11717	NON GC	
387	RCRAGN	RITE AID NYR000040717/LGN	WICKS RD & SUFFOLK AVE BRENTWOOD NY 11717	NON GC	
388	RCRANLR	LASER GRAPHICS NYR000048603/NLR	80 DAVIS DR UNIT 4 HAUPPAUGE NY 11788	NON GC	
389	RCRANLR	NYSDOT BIN 1049189 NYD987005501/NLR	S SERVICE RD & EB LIE JERICHO NY 11753	NON GC	

Environmental FirstSearch Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
390	RCRANLR	NYSDOT BIN 1049430 NYR000008904/NLR	VANDERBILT MOTOR PKWY OVER HAUPPAUGE NY 11788	NON GC	
391	RCRANLR	NYSDOT BIN 1058812 NYD986887032/NLR	ROBERT MOSES CAUSEWAY HAUPPAUGE NY 11788	NON GC	
392	RCRANLR	EXPRESSWAY GRAPHICS NYR000047035/NLR	66 CAIN DR BRENTWOOD NY 11717	NON GC	
393	RCRANLR	LILCO - BRENTWOOD SUBSTATION NYD986889731/NLR	CROOKED HILL RD BRENTWOOD NY 11717	NON GC	
394	RCRANLR	RITE AID NYR000040717/NLR	WICKS RD & SUFFOLK AVE BRENTWOOD NY 11717	NON GC	
395	ERNS	B&K INSTRUMENTS 396881/UNKNOWN (EPA REGIONS	135 MARCUS BLVD. HAUPPAUGE NY	NON GC	
396	ERNS	554598/UNKNOWN (NRC)	131 LERRELL ST BRENTWOOD NY 11717	NON GC	
397	NPDES	BREWREN OFFICE BLDG NO. 3 NY0211150/MINOR	HAUPPAUGE NY 11788	NON GC	
398	NPDES	HAUPPAUGE CENTER FOR BUSINESS NY0221872/MINOR	HAUPPAUGE NY 11788	NON GC	
399	STATE	S.C.W.A. WELLFIELD - HAUPPAUGE 152076	OVAL DRIVE HAUPPAUGE NY 11788	NON GC	
400	STATE	WATCH HILL SAND AND GRAVEL 152084	RTE. 111 MOTOR PKWY. HAUPPAUGE NY 11788	NON GC	
401	SPILLS	ADVANCED FREIGHT SYSTEMS 9313395/CLOSED	S/O LIE RTE 111 HAUPPAUGE NY 11788	NON GC	
402	SPILLS	ALLSTATE RUBBISH 9212611/CLOSED	NO DRIVE & VETS HWY HAUPPAUGE NY 11788	NON GC	
403	SPILLS	ALLSTATE RUBBISH 9212618/CLOSED	VETS HWY & NORTH DRIVE HAUPPAUGE NY 11788	NON GC	
404	SPILLS	FAIRFIELD APARTMENTS 9313019/CLOSED	NEW HIGHWAY, WEST BLDG #1 HAUPPAUGE NY 11788	NON GC	
405	SPILLS	GAS STATION 9906390/ACTIVE	522 SMITHTOWN BYPASS HAUPPAUGE NY	NON GC	
406	SPILLS	HAUPPAUGE MIDDLE SCHOOL 9802866/CLOSED	TOWN LINE ROAD HAUPPAUGE NY 11788	NON GC	
407	SPILLS	ISLANDIA HOME FOR ADULTS 9811531/CLOSED	1515 VETERANS MEM HIGHWAY HAUPPAUGE NY 11788	NON GC	
408	SPILLS	KING KULLEN SUPERMART 9512209/CLOSED	NESCONSET HIGHWAY HAUPPAUGE NY 11788	NON GC	
409	SPILLS	LILCO 9110798/CLOSED	RICHFIELD ROAD HAUPPAUGE NY 11788	NON GC	

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Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
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410	SPILLS	LILCO 9203164/CLOSED	KINGS HWY HAUPPAUGE NY 11788	NON GC	
411	SPILLS	LILCO 9403731/CLOSED	OLD WILLETS PATH HAUPPAUGE NY 11788	NON GC	
412	SPILLS	LILCO 9506316/CLOSED	MOTOR PARKWAY HAUPPAUGE NY 11788	NON GC	
413	SPILLS	LILCO 9004272/CLOSED	7 FOREST ROAD HAUPPAUGE NY 11788	NON GC	
414	SPILLS	LILCO 9011313/CLOSED	OVAL DRIVE HAUPPAUGE NY 11788	NON GC	
415	SPILLS	LILCO 9011977/CLOSED	SOUTHERN BLVD HAUPPAUGE NY 11788	NON GC	
416	SPILLS	LILCO 9209329/CLOSED	ENGINEERS ROAD HAUPPAUGE NY 11788	NON GC	
417	SPILLS	LILCO 9204980/CLOSED	VETS HWY/NEAR RTE 111 HAUPPAUGE NY 11788	NON GC	
418	SPILLS	NYS OFFICE BLDG 9610060/CLOSED	VETS HIGHWAY HAUPPAUGE NY 11788	NON GC	
419	SPILLS	RESIDENCE 9912339/ACTIVE	205 SHAFTER STREET HAUPPAUGE NY 11788	NON GC	
420	SPILLS	ROSE AND COMPANY 9908663/CLOSED	774 TOWN LINE ROAD HAUPPAUGE NY 11788	NON GC	
421	SPILLS	S&A SANITATION 9405459/CLOSED	OLD WILLETS PATH HAUPPAUGE NY 11788	NON GC	
422	SPILLS	SHELL 8912124/CLOSED	504 RTE 111 & BYPASS HAUPPAUGE NY 11788	NON GC	
423	SPILLS	SLOMINS 9312255/CLOSED	LINCOLN BLVD HAUPPAUGE NY 11788	NON GC	
424	SPILLS	UNK 9104049/CLOSED	LIE EXITS 56 & 57 HAUPPAUGE NY 11788	NON GC	
425	SPILLS	UNK 9010311/CLOSED	BLYNDENBERG ROAD HAUPPAUGE NY 11788	NON GC	
426	SPILLS	UNK 9102453/CLOSED	MOORELAND ROAD HAUPPAUGE NY 11788	NON GC	
427	SPILLS	UNK 9102286/CLOSED	RTE 111 & HAUPPAUGE ROAD HAUPPAUGE NY 11788	NON GC	
428	SPILLS	UNK 9416233/CLOSED	HARRISON ROAD HAUPPAUGE NY 11788	NON GC	
429	SPILLS	UNK 9505298/CLOSED	LIE EXITS 56 & 57 HAUPPAUGE NY 11788	NON GC	

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ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
430	SPILLS	UNK 8911702/CLOSED	EXITS 55-54 LIE HAUPPAUGE NY 11788	NON GC	
431	SPILLS	UNK 9506660/CLOSED	VETS HWY/RTE 111 & LIE HAUPPAUGE NY 11788	NON GC	
432	SPILLS	UNK 8910663/CLOSED	MOTOR PARKWAY HAUPPAUGE NY 11788	NON GC	
433	SPILLS	UNK 9211805/ACTIVE	VETERANS HWY & RTE 111 HAUPPAUGE NY 11788	NON GC	
434	SPILLS	UNK 9503752/CLOSED	LINCOLN BLVD & RTE 111 HAUPPAUGE NY 11788	NON GC	
435	SPILLS	UNK 9411792/CLOSED	RTE 111 HAUPPAUGE NY 11788	NON GC	
436	SPILLS	UNK 9003373/CLOSED	VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
437	SPILLS	UNK CONTRACTOR 9011994/CLOSED	VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
438	SPILLS	UPS 9000232/CLOSED	RTE 111 NORTH OF LIE HAUPPAUGE NY 11788	NON GC	
439	SPILLS	WHIPORWHIL SCHOOL 9609677/CLOSED	HOFFMAN LANE HAUPPAUGE NY 11788	NON GC	
440	SPILLS	9512808/CLOSED	APPLETREE LANE HAUPPAUGE NY 11788	NON GC	
441	SPILLS	9815112/ACTIVE	MOTOR PKWAY EAST/COMMACK HAUPPAUGE NY 11788	NON GC	
442	SPILLS	9925125/CLOSED	82 KRISTIN LANE HAUPPAUGE NY	NON GC	
443	SPILLS	9912373/CLOSED	LIE WEST EXITS 53-55 HAUPPAUGE NY 11788	NON GC	
444	SPILLS	9925470/CLOSED	LIE WEST EXITS 53-55 HAUPPAUGE NY 11788	NON GC	
445	SPILLS	9912372/CLOSED	LIE WEST EXITS 53-55 HAUPPAUGE NY 11788	NON GC	
446	SPILLS	9803376/CLOSED	SMITHTOWN BLVD HAUPPAUGE NY 11788	NON GC	
447	SPILLS	9825099/CLOSED	SOUTH SERVICE ROAD LIE HAUPPAUGE NY 11788	NON GC	
448	SPILLS	CARLOZZI RESIDENCE 0001859/ACTIVE	76 STANLEY STREET BRENTWOOD NY 11717	NON GC	
449	SPILLS	LIBERTY CHEM TREATMENT 9908594/CLOSED	SUFFOLK AVENUE BRENTWOOD NY 11717	NON GC	

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450	SPILLS	LIPA 9910828/CLOSED	CROOKED HILL RD S/O LIE BRENTWOOD NY 11717	NON GC	
451	SPILLS	LIPA 9910829/CLOSED	CROOKED HILL RD S/O LIE BRENTWOOD NY 11717	NON GC	
452	SPILLS	PENSKE TRUCK/SUN TRADING 9925416/CLOSED	LONG ISLAND AVE/EXECUTIVE BRENTWOOD NY 11717	NON GC	
453	SPILLS80	CHEMLAWN 8700827/CLOSED	ORBIT DRIVE HAUPPAUGE NY 11788	NON GC	
454	SPILLS80	DAIRY QUEEN WELL 8501546/CLOSED	RTE 111 HAUPPAUGE NY 11788	NON GC	
455	SPILLS80	DICARLO DISTRIBUTERS 8800387/CLOSED	MOTOR PKWY & CAIN DRIVE HAUPPAUGE NY 11788	NON GC	
456	SPILLS80	LILCO 8600869/CLOSED	WHITE SPRUCE LANE HAUPPAUGE NY 11788	NON GC	
457	SPILLS80	LILCO 8600977/CLOSED	HOFFMAN AVENUE HAUPPAUGE NY 11788	NON GC	
458	SPILLS80	LILCO 8900680/CLOSED	SALCON DRIVE HAUPPAUGE NY 11788	NON GC	
459	SPILLS80	SLACKE TEST BORING INC 8707689/CLOSED	VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
460	SPILLS80	TEXACO 8602069/CLOSED	RTE 111 @ POST OFFICE HAUPPAGE NY 11788	NON GC	
461	SPILLS80	UNITED GUARDIN 8707830/CLOSED	230 MICHEALS BLVD. HAUPPAGE NY 11788	NON GC	
462	SPILLS80	UNK 8801678/CLOSED	WIRELESS BLVD. HAUPPAUGE NY 11788	NON GC	
463	SPILLS80	UNK 8607684/CLOSED	RTE 111 W. OF 454 HAUPPAUGE NY 11788	NON GC	
464	SPILLS80	UNK 8702877/CLOSED	SOUTH SERVICE ROAD HAUPPAUGE NY 11788	NON GC	
465	SPILLS80	UNK 8602264/CLOSED	MOTOR PARKWAY HAUPPAUGE NY 11788	NON GC	
466	SPILLS80	UNK 8700726/CLOSED	VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
467	SPILLS80	UNK 8907598/CLOSED	LIE VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
468	SPILLS80	UNK 8903680/CLOSED	RTE 111 BTW LIE/MOTOR PKW HAUPPAUGE NY 11788	NON GC	
469	SPILLS80	UNK 8902701/CLOSED	VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	

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470	SPILLS80	UNK 8601566/CLOSED	VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
471	SPILLS80	8100711/UNKNOWN	HAUPPAUGE NY 11788	NON GC	
472	SPILLS80	8101068/UNKNOWN	HAUPPAUGE NY 11788	NON GC	
473	SPILLS80	8101089/UNKNOWN	HAUPPAUGE NY 11788	NON GC	
474	SPILLS80	8201372/UNKNOWN	HAUPPAUGE NY 11788	NON GC	
475	SPILLS80	8301711/UNKNOWN	HAUPPAUGE NY 11788	NON GC	
476	SPILLS80	8300603/UNKNOWN	RTE 111 HAUPPAUGE NY 11788	NON GC	
477	SPILLS80	LILCO 8903978/CLOSED	650 TULIP AVENUE BRENTWOOD NY 11717	NON GC	
478	SPILLS80	LILCO 8601147/CLOSED	FRANKLIN/POLE #19 BRENTWOOD NY 11717	NON GC	
479	SPILLS80	LILCO 8704104/CLOSED	WASHINGTON AVENUE BRENTWOOD NY 11717	NON GC	
480	SPILLS80	LILCO 8607992/CLOSED	BRENTWOOD ROAD BRENTWOOD NY 11717	NON GC	
481	SPILLS80	MOBIL S/S 8706939/CLOSED	SPUR DRIVE SOUTH BRENTWOOD NY 11717	NON GC	
482	SPILLS80	ROLLINS LEASING 8706532/CLOSED	SOUTH SERVICE ROAD EAST BRENTWOOD NY 11717	NON GC	
483	SPILLS80	UNK 8808477/CLOSED	COMMACK ROAD WEST BRENTWOOD NY 11717	NON GC	
484	SPILLS80	UNK 8805660/CLOSED	WASHINGTON AVENUE BRENTWOOD NY 11717	NON GC	
485	SPILLS80	UNK 8602275/CLOSED	BRENTWOOD ROAD BRENTWOOD NY 11717	NON GC	
486	SPILLS80	UNK 8603565/CLOSED	HARTLAND BLVD BRENTWOOD NY 11717	NON GC	
487	SPILLS80	8000175/UNKNOWN	BRENTWOOD NY 11717	NON GC	
488	SPILLS80	8100095/UNKNOWN	BRENTWOOD NY 11717	NON GC	
489	SWL	PILGRIM STATE HOSP. SLF 1-52S23/INACTIVE	PILGRIM STATE HOSPIT BRENTWOOD NY 11717	NON GC	

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ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
490	PERMITS	43000 S F MULTI TENENT IND BLDG (H-1-0082309/NSIGPCI	HAUPPAUGE NY 11788	NON GC	
491	PERMITS	8-IN-1 PET PRODUCTS INC.(H-231) 1-0208990/NSIGPCI	HAUPPAUGE NY 11788	NON GC	
492	PERMITS	BREWREN SUPPORT SYSTEMS (H-228) 1-0198692/NSIGPCI	HAUPPAUGE NY 11788	NON GC	
493	PERMITS	OFFICE BLDG. (H-193) 1-0179981/NSIGPCI	HAUPPAUGE NY 11788	NON GC	
494	PERMITS	SHOE GIANT/HAUPPAUGE C08 87 059 1-0210447/NSIGPCI	HAUPPAUGE NY 11788	NON GC	
495	PERMITS	BRENTWOOD HEAD START 1-0238309/NSIGPCI	BRENTWOOD NY 11717	NON GC	
496	PERMITS	BRENTWOOD PLAZA SHOPPING CTR(C05-91 1-0237124/NSIGPCI	BRENTWOOD NY 11717	NON GC	
497	PERMITS	BRENTWOOD PROFESSIONAL CENTER (BR 3 1-0173983/NSIGPCI	BRENTWOOD NY 11717	NON GC	
498	PERMITS	HEARTLAND #71-140 ADP (C05-92-043) 1-0237957/NSIGPCI	BRENTWOOD NY 11717	NON GC	
499	PERMITS	HEARTLAND BLDG. #28-203 (C05-89-126 1-0221074/NSIGPCI	BRENTWOOD NY 11717	NON GC	
500	PERMITS	HEARTLAND BLDG.#12-75 (BR 435) 1-0198358/NSIGPCI	BRENTWOOD NY 11717	NON GC	
501	PERMITS	HEARTLAND BLDG.#25-111 (C05-88-070) 1-0222348/NSIGPCI	BRENTWOOD NY 11717	NON GC	
502	PERMITS	SPEC BLDG-WAREHOUSE (BR 406) 1-0196479/NSIGPCI	BRENTWOOD NY 11717	NON GC	
503	UST	BLOSSOM LLC S8-0644	WIRELESS BLVD HAUPPAUGE NY 11788	NON GC	
504	UST	CAMERON ASHLEY BUILDING PRODUC S5-1356	939 MOTOR PKWY HAUPPAUGE NY 11788	NON GC	
505	UST	COUNTY OF SUFFOLK GAS DISP FAC S8-0271	VETS HWY HAUPPAUGE NY 11788	NON GC	
506	UST	DPW SHOP BLDG DIV S8-0012	NORTH RD HAUPPAUGE NY 11788	NON GC	
507	UST	DPW STORAGE BLD S8-0009	NORTH RD HAUPPAUGE NY 11788	NON GC	
508	UST	FALCON DRIVE PUMP STATION S8-0031	FALCON DR HAUPPAUGE NY 11788	NON GC	
509	UST	KING KULLEN GROCERY CO S8-0645	575 RTE 347 HAUPPAUGE NY 11788	NON GC	

***Environmental FirstSearch
Sites Summary Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 519 **GEOCODED:** 369 **NON GEOCODED:** 150 **SELECTED:** 16

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
510	UST	MICROCENTRIC S8-0452	WIRELESS RD HAUPPAUGE NY 11788	NON GC	
511	UST	NYS DOT HAUPPAUGE S5-0999	N SERVICE RD HAUPPAUGE NY 11788	NON GC	
512	UST	VIACOM NETWORK OPERATIONS S8-0648	ADAMS AVE HAUPPAUGE NY 11788	NON GC	
513	UST	HEARTLAND BLDG 30-81 S5-1340	37 RODEO DR EDGEWOOD NY 11717	NON GC	
514	UST	HEARTLAND GOLF PARK S5-1253	EXECUTIVE DR EDGEWOOD NY 11717	NON GC	
515	UST	I W INDUSTRIES INC S5-0525	FELDMAN CT BRENTWOOD NY 11717	NON GC	
516	LUST	HAUPPAUGE MIDDLE SCHOOL 9802866/CLOSED	TOWN LINE ROAD HAUPPAUGE NY 11788	NON GC	
517	LUST	KING KULLEN SUPERMART 9512209/CLOSED	NESCONSET HIGHWAY HAUPPAUGE NY 11788	NON GC	
518	LUST	UNK 8907598/CLOSED	LIE VETERANS HIGHWAY HAUPPAUGE NY 11788	NON GC	
519	LUST	WHIPORWHIL SCHOOL 9609677/CLOSED	HOFFMAN LANE HAUPPAUGE NY 11788	NON GC	

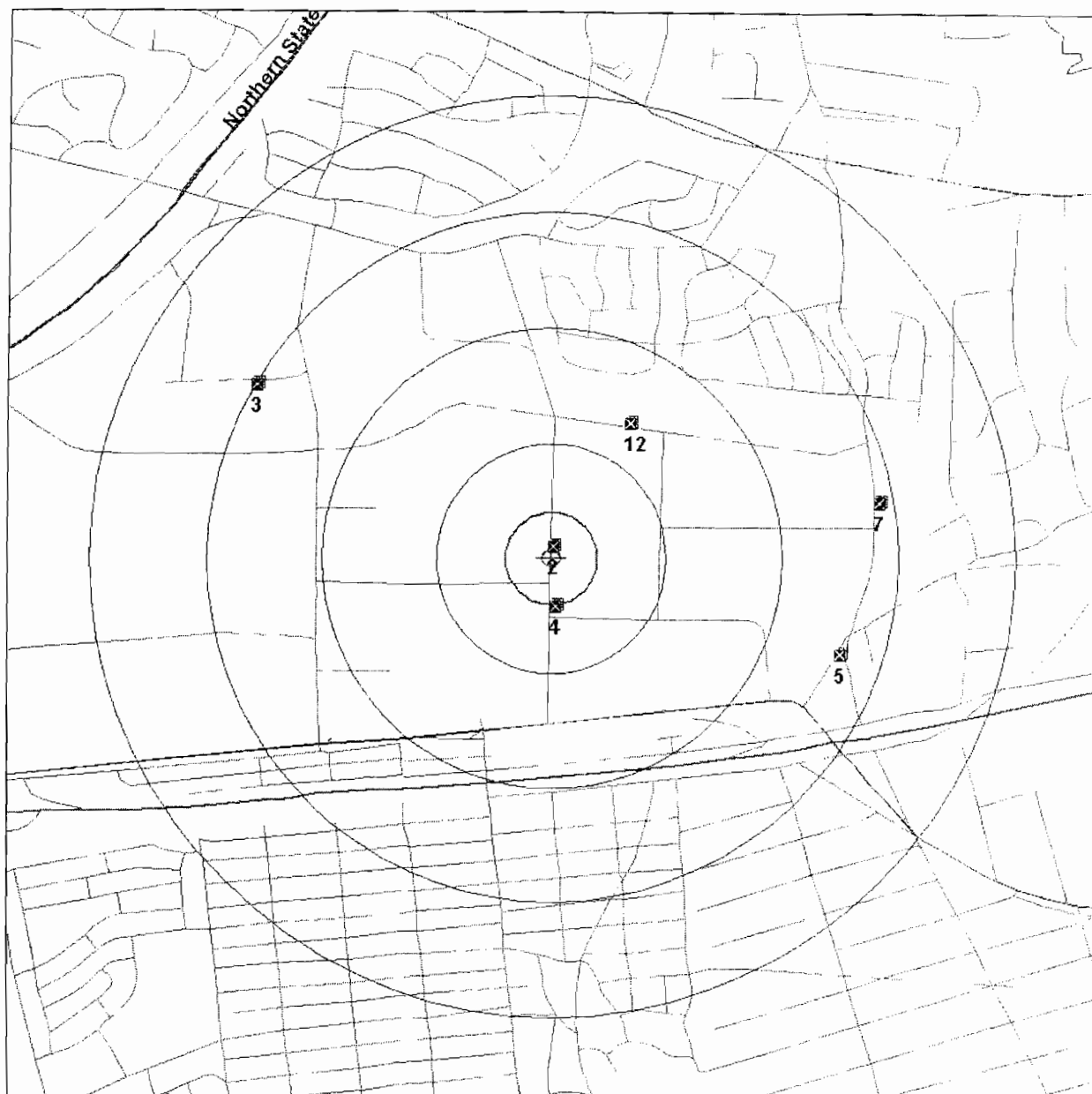


Environmental FirstSearch

1 Mile Radius
ASTM Map: NPL, RCRACOR, STATE Sites

Environmental
FIRSTSEARCH
Network

145 MARCUS BLVD, HAUPPAUGE NY 11788



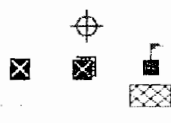
Source: 1999 U.S. Census TIGER Files

Target Site (Latitude: 40.812736 Longitude: -73.245984)

Identified Site, Multiple Sites, Receptor

NPL, Solid Waste Landfill (SWL) or Hazardous Waste

Railroads



Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius



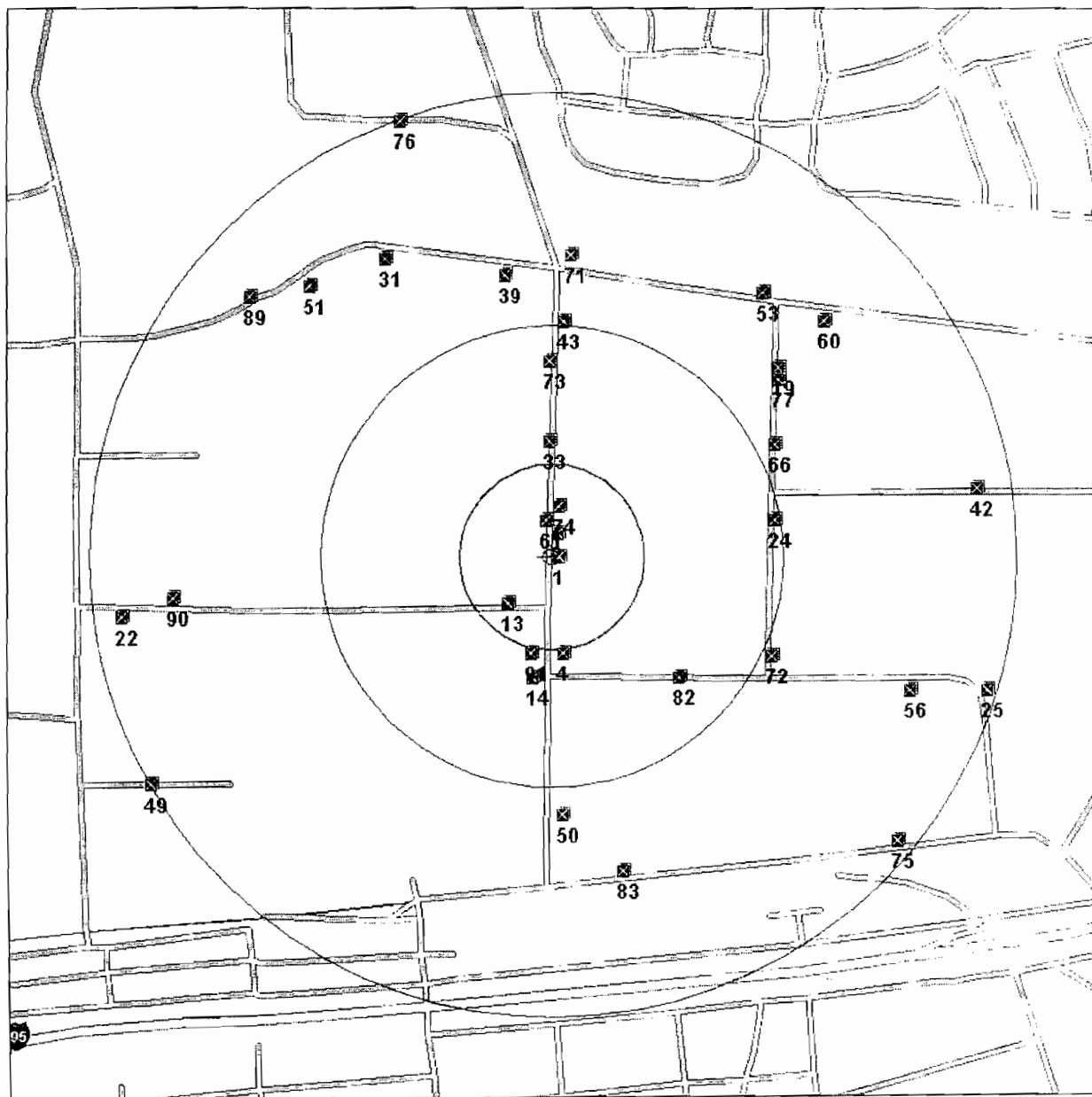
Environmental FirstSearch

.5 Mile Radius

ASTM Map: CERCLIS, RCRATSD, LUST, SWL



145 MARCUS BLVD, HAUPPAUGE NY 11788



Source: 1999 U.S. Census TIGER Files

Target Site (Latitude: 40.812736 Longitude: -73.245984)

Identified Site, Multiple Sites, Receptor

NPL, Solid Waste Landfill (SWL) or Hazardous Waste

Railroads

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius



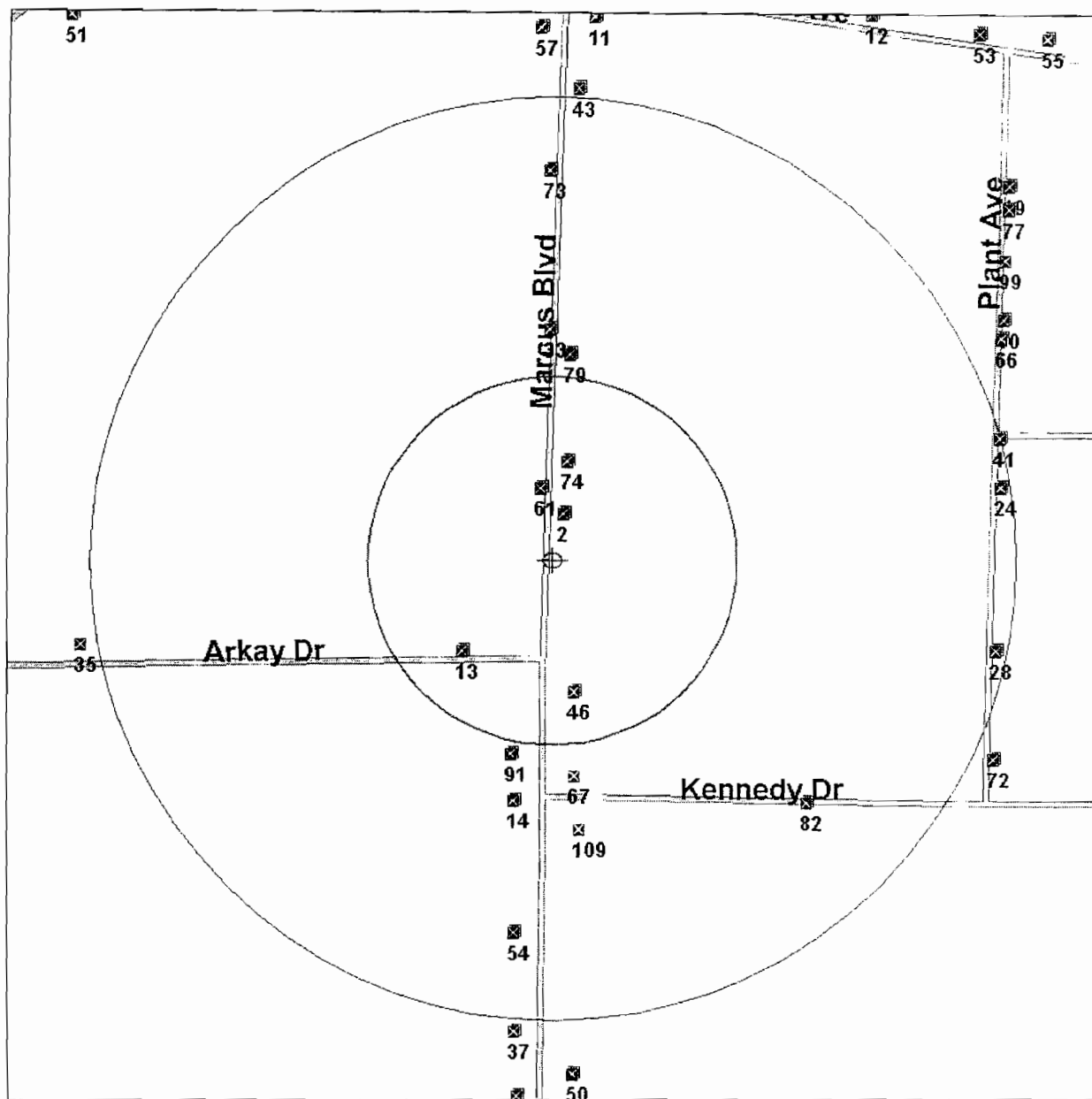
Environmental FirstSearch

.25 Mile Radius

ASTM Map: RCAGEN, ERNS, UST



145 MARCUS BLVD, HAUPPAUGE NY 11788



Source: 1999 U.S. Census TIGER Files

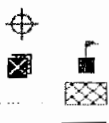
Target Site (Latitude: 40.812736 Longitude: -73.245984)

Identified Site, Multiple Sites, Receptor

NPL, Solid Waste Landfill (SWL) or Hazardous Waste

Railroads

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius



DataMap Technology Corporation

Environmental FirstSearch™ Report

TARGET PROPERTY:

145 MARCUS BLVD

HAUPPAUGE NY 11788

Job Number: TED00-01

PREPARED FOR:

11-13-00



Tel: (781) 320-3720

Fax: (781) 320-3715

Environmental FirstSearch
Search Summary Report

Target Site: 145 MARCUS BLVD
HAUPPAUGE NY 11788

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2 >	ZIP	TOTALS
State Wells	Y	02-02-98	1.25	0	0	0	0	2	6	8
Federal Wells	Y	NA	1.25	0	0	0	0	0	0	0
- TOTALS -				0	0	0	0	2	6	8

Notice of Disclaimer

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Waiver of Liability

Although DataMap Technology Corp. uses its best efforts to research the actual location of each site, DataMap Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of DataMap Technology Corp.'s services proceeding are signifying an understanding of DataMap Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations

*Environmental FirstSearch
Site Information Report*

Request Date: 11-13-00
Requestor Name: Salvatore Tedesco
Standard: ASTM

Search Type: COORD
Job Number: TED00-01

Target Address: 145 MARCUS BLVD
HAUPPAUGE NY 11788

Demographics

Sites: 8	Non-Geocoded: 6	Population: NA
Radon: OF THE 3 HOMES TESTED, THE AVG. PCI/L LEVEL WAS 1.1		

Site Location

	<u>Degrees (Decimal)</u>	<u>Degrees (Min/Sec)</u>		<u>UTMs</u>
Longitude:	-73.245984	-73:14:46	Easting:	647939.528
Latitude:	40.812736	40:48:46	Northing:	4519238.03
			Zone:	18

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1.00 Mile(s)

Services:

ZIP				
Code	City Name	ST	Dist/Dir	Sel
11717	BRENTWOOD	NY	0.35 SE	Y
11722	CENTRAL ISLIP	NY	0.99 SE	N
11787	SMITHTOWN	NY	1.00 NE	N

	<u>Requested?</u>	<u>Date</u>
Sanborns	N	
Aerial Photographs	N	
Topo Maps (hardcopy)	N	
City Directories	N	
Title Search	N	
Municipal Reports	N	
Online Topo Map	N	

Environmental FirstSearch
Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 8 **GEOCODED:** 2 **NON GEOCODED:** 6 **SELECTED:** 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	PWS	SUFFOLK COUNTY WATER AUTHORITY 5110526-314/A	POND ROAD OAKDALE NY 11788	1 11 NW	1
2	PWS	SUFFOLK COUNTY WATER AUTHORITY 5110526-313/A	POND ROAD OAKDALE NY 11788	1 11 NW	1

Environmental FirstSearch
Sites Summary Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TOTAL: 8 **GEOCODED:** 2 **NON GEOCODED:** 6 **SELECTED:** 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
3	PWS	CENTRAL ISLIP PSYCHIATRIC CTR 5103013-002/A	BOX A WEST BRENTWOOD NY 11717	NON GC	
4	PWS	CENTRAL ISLIP PSYCHIATRIC CTR 5103013-003/A	BOX A WEST BRENTWOOD NY 11717	NON GC	
5	PWS	CENTRAL ISLIP PSYCHIATRIC CTR 5103013-004/A	BOX A WEST BRENTWOOD NY 11717	NON GC	
6	PWS	CENTRAL ISLIP PSYCHIATRIC CTR 5103013-001/A	BOX A WEST BRENTWOOD NY 11717	NON GC	
7	PWS	PILGRIM PSYCHIATRIC CENTER 5103016-001/A	SAGTIKOS STATE PARKWAY BRENTWOOD NY 11717	NON GC	
8	PWS	PILGRIM PSYCHIATRIC CENTER 5103016-002/A	SAGTIKOS STATE PARKWAY BRENTWOOD NY 11717	NON GC	

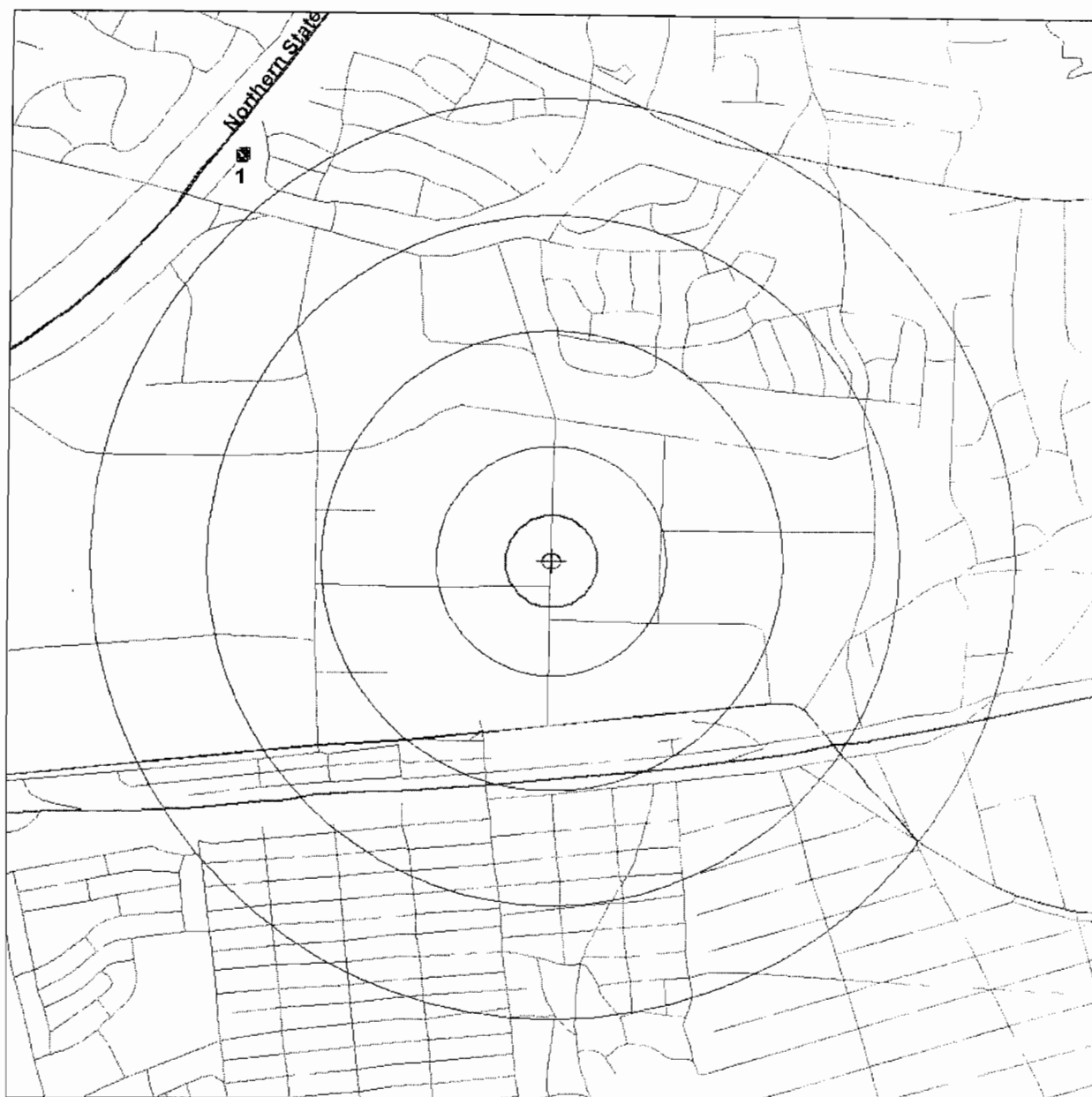


Environmental FirstSearch

1 Mile Radius
Fed. Wells State Wells Sites



145 MARCUS BLVD, HAUPPAUGE NY 11788



Source: 1999 U.S. Census TIGER Files

Target Site (Latitude: 40.812736 Longitude: -73.245984)

Identified Site, Multiple Sites, Receptor

NPL, Solid Waste Landfill (SWL) or Hazardous Waste

Railroads

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius



Public Water Supply, DEP Zone II Boundaries

Federal Wells



Environmental FirstSearch Federal Databases and Sources

1. **NPL: National Priority List.** The EPA's list of confirmed or proposed Superfund sites. Source: Environmental Protection Agency.

Updated quarterly.
2. **CERCLIS: Comprehensive Environmental Response Compensation and Liability Information System.** The EPA's database of current and potential Superfund sites currently or previously under investigation. Source: Environmental Protection Agency.

Updated quarterly.
3. **RCRIS: Resource Conservation and Recovery Information System.** The EPA's database of registered hazardous waste generators and treatment, storage and disposal facilities. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List). Source: Environmental Protection Agency.

Updated quarterly.
4. **ERNS: Emergency Response Notification System.** The EPA's database of emergency response actions. Source: Environmental Protection Agency.

Updated quarterly.
5. **NPDES: National Pollution Discharge Elimination System.** The EPA's database of all permitted facilities receiving and discharging effluents. Source: Environmental Protection Agency.

Updated semi-annually.
6. **FINDS: The Facility Index System.** The EPA's Index of identification numbers associated with a property or facility which the EPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the EPA office that may have files on the site or facility. Source: Environmental Protection Agency.

Updated semi-annually.
7. **TRIS: Toxic Release Inventory System.** The EPA's database of all facilities that have had or may be prone to toxic material releases. Source: Environmental Protection Agency.

Updated semi-annually.
8. **ACEC: Areas of Critical Environmental Concern.** This database contains contact information for threatened and endangered species. Source: U.S. Fish and Wildlife Services, Ecological Services Offices; State GIS Departments.

Updated periodically.

9. **Floodplains** - 100 year and 500 year flood zone boundaries for select counties in the United States. Source: Federal Emergency Management Agency (FEMA).

This database will be updated by us as new data becomes available for purchase.

10. **Historic Sites**- National Register of Historical Places Database. The nation's official list of cultural resources worthy of preservation. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. Source: National Park Service.

Updated yearly.

11. **Wetlands** - U.S. Fish and Wildlife Service produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This data is available for select areas of the United States. Source: U.S. Fish and Wildlife Service, National Wetlands Inventory.

This database will be updated by us as new data becomes available for purchase.

12. **Land Use** - Federal Land data includes information from the following government agencies including Bureau of Indian Affairs, Bureau of Reclamation, Bureau of Land Management, Department of Defense, Forest Service, Fish and Wildlife Service, National Park Service, and the Tennessee Valley Authority. This database also contains data regarding wild and scenic rivers. Source: USGS.

Updated periodically.

Environmental FirstSearch New York Databases and Sources

1. **State Sites:** The New York State Department of Environmental Conservation's Registry of Inactive Hazardous Waste Disposal Sites. The database contains information on all Class 1, Class 2, Class 2a, Class 3, Class 4, and Class 5 locations maintained by the Division of Hazardous Waste Remediation.

Updated quarterly.

The Hazardous Substance Waste Disposal Site Study list maintained by the New York State Department of Environmental Conservation is also included within the State Sites database.

Updated as available.

2. **Spills:** The New York State Department of Environmental Conservation's database of emergency response actions and spill releases maintained by the Division of Spills Management.

Updated quarterly.

3. **Landfills:** The New York State Department of Environmental Conservation's Active Facilities Registry maintained by the Division of Solid and Hazardous Materials.

Updated annually.

4. **UST:** The New York State Department of Environmental Conservation's database of Petroleum Bulk Storage (PBS) facilities, Major Oil Storage Facilities (MOSF), and Chemical Bulk Storage (CBS) facilities maintained by the Division of Spills Management and delegated Counties (Nassau, Suffolk, Rockland, and Cortland Counties).

Updated quarterly.

5. **PWS:** The State of New York Department of Health database of Public Water Supply (PWS) wells maintained by the Bureau of Public Water Supply.

Updated annually.

6. **LUST:** The New York State Department of Environmental Conservation's database of Leaking Underground Storage Tanks (LUSTs) maintained by the Division of Spills Management. The database is derived from the Spills database.

Updated quarterly.

DataMap Technology Corporation

Environmental FirstSearch™ Report

TARGET PROPERTY:

145 MARCUS BLVD

HAUPPAUGE NY 11788

Job Number: TED00-01

PREPARED FOR:

10-23-00



Tel: (781) 320-3720

Fax: (781) 320-3715

Environmental FirstSearch
Site Information Report

Request Date: 10-23-00
Requestor Name: Salvatore Tedesco
Standard: ASTM

Search Type: COORD
Job Number: TED00-01

Target Address: 145 MARCUS BLVD
HAUPPAUGE NY 11788

Demographics

Sites: 519	Non-Geocoded: 150	Population: NA
Radon: OF THE 3 HOMES TESTED, THE AVG. PCI/L LEVEL WAS 1.1		

Site Location

	<u>Degrees (Decimal)</u>	<u>Degrees (Min/Sec)</u>	<u>UTMs</u>
Longitude:	-73.245984	-73:14:46	Easting: 647939.528
Latitude:	40.812736	40:48:46	Northing: 4519238.03
		Zone:	18

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1.00 Mile(s)

Services:

ZIP				
Code	City Name	ST	Dist/Dir	Sel
11717	BRENTWOOD	NY	0.35 SE	Y
11722	CENTRAL ISLIP	NY	0.99 SE	N
11787	SMITHTOWN	NY	1.00 NE	N

	<u>Requested?</u>	<u>Date</u>
Sanborns	N	
Aerial Photographs	N	
Topo Maps (hardcopy)	N	
City Directories	N	
Title Search	N	
Municipal Reports	N	
Online Topo Map	N	

Environmental FirstSearch
Search Summary Report

Target Site: 145 MARCUS BLVD
HAUPPAUGE NY 11788

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2 >	ZIP	TOTALS
NPL	Y	07-27-00	1.00	0	0	0	0	0	0	0
CERCLIS	Y	08-10-00	1.00	0	3	0	0	4	0	7
RCRA TSD	Y	06-22-00	1.00	0	0	0	0	0	0	0
RCRA COR	Y	06-22-00	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	06-22-00	0.50	0	4	7	53	-	18	82
RCRA NLR	Y	06-22-00	0.50	0	2	4	48	-	7	61
ERNS	Y	01-06-00	0.50	0	1	0	2	-	2	5
NPDES	Y	10-18-99	0.50	0	0	1	3	-	2	6
TRIS	Y	07-16-98	0.50	0	2	4	6	-	0	12
State Sites	Y	04-01-00	1.00	0	2	0	1	3	2	8
Spills-1990	Y	07-01-00	0.50	0	11	8	30	-	52	101
Spills-1980	Y	10-01-99	0.50	0	3	5	28	-	36	72
SWL	Y	12-01-99	1.00	0	0	0	0	0	1	1
Permits	Y	NA	0.50	0	0	1	7	-	13	21
REG UST/AST	Y	07-01-00	0.50	1	7	11	68	-	13	100
Leaking UST	Y	07-01-00	0.50	0	7	5	27	-	4	43
- TOTALS -				1	42	46	273	7	150	519

Notice of Disclaimer

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***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

CERCLIS SITE

SEARCH ID: 2 **DIST/DIR:** 0.03 NE **MAP ID:** 2

NAME: COMPUTER CIRCUITS
ADDRESS: 145 MARCUS BOULEVARD
HAUPPAUGE NY 11788

REV:
ID1: NYD125499673
ID2: 0202636
STATUS: FINAL
PHONE:

CONTACT:

DESCRIPTION:

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	State, Fund Financed		06-29-1987
FINAL LISTING ON NPL	EPA Fund-Financed		05-10-1999
HRS PACKAGE Being considered for proposal to the NPL	EPA Fund-Financed		11-30-1997
PRELIMINARY ASSESSMENT Low	State, Fund Financed		07-01-1987
PROPOSAL TO NPL	EPA Fund-Financed		07-28-1998
REMOVAL ASSESSMENT	EPA Fund-Financed Primary	06-02-1994	02-27-1995
SITE INSPECTION Low	State, Fund Financed	06-29-1987	07-01-1987

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

CERCLIS SITE

SEARCH ID: 3 **DIST/DIR:** 0.75 NW **MAP ID:** 3

NAME: ELECTRO MOTIVE RESEARCH CORPORATION
ADDRESS: 35 DAVIDS DRIVE
HAUPPAUGE NY 11788

REV:
ID1: NYD981184187
ID2: 0202297
STATUS: NFRAP-N
PHONE:

CONTACT:

DESCRIPTION:

CIRCUITBOARD MANUFACTURING FIRM SUSPECTED OF DISCHARGING HEAVY METALS AND SOLVENTS TO UNDERGROUND CESSPOOLS-COPPER, IRONLEAD, NICKEL, AND ZINC CONFIRMED (ALTHOUGH NO DATA LOCATED AS YET). POTENTIAL GROUND-WATER CONTAMINATION.

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	State, Fund Financed		03-26-1986
PRELIMINARY ASSESSMENT Low	State, Fund Financed	03-26-1986	03-28-1986
SITE INSPECTION Deferred to RCRA (Subtitle C)	EPA Fund-Financed		04-06-1992

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

CERCLIS SITE			
SEARCH ID: 5	DIST/DIR: 0.66 SE	MAP ID: 5	
NAME: GLARO ADDRESS: 735 OLD WILLETS PATH HAUPPAUGE NY 11787		REV: ID1: NYD002048627 ID2: 0201964 STATUS: NOT PROPOSED PHONE:	
CONTACT:			
DESCRIPTION:			
ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	State, Fund Financed		06-01-1988
PRELIMINARY ASSESSMENT High	EPA Fund-Financed	12-21-1988	12-29-1988

CERCLIS SITE			
SEARCH ID: 6	DIST/DIR: 0.88 NW	MAP ID: 6	
NAME: MICROWAVE POWER ADDRESS: 330 OSER AVE. HAUPPAUGE NY 11788		REV: ID1: NYD044470680 ID2: 0202957 STATUS: NFRAP-N PHONE:	
CONTACT:			
DESCRIPTION:			
ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	EPA Fund-Financed		02-28-1989
PRELIMINARY ASSESSMENT NFRAP (No Futher Remedial Action Planned)	EPA Fund-Financed	02-28-1989	03-31-1989

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

CERCLIS SITE

SEARCH ID: 7 **DIST/DIR:** 0.72 NE **MAP ID:** 7

NAME: UNEXCELLED CASTINGS
ADDRESS: 663 OLD WILLETS PATH
HAUPPAUGE NY 11787

REV:
ID1: NYD057729238
ID2: 0201573
STATUS: NFRAP-N
PHONE:

CONTACT:

DESCRIPTION:

LEAD CONCENTRATIONS HIGHER THAN GROUND-WATER STANDARDS WERE DETECTED IN A SAMPLE TAKEN FROM A STORM DRAIN SHARED WITH OTHER LOCAL BUSINESSES. A SAMPLE OF UNEXCELLED CASTINGS WASTESTREAM DID NOT CONTAIN CONCENTRATIONS OF LEAD ABOVE DETECTIOLEAD CONCE NTRATIONS HIGHER THAN GROUND-WATER STANDARDS WERE DETECTED IN A SAMPLE TAKEN FROM A STORM DRAIN SHARED WITH OTHER LOCAL BUSINESSES. A SAMPLE OF UNEXCELLED CASTINGS WASTESTREAM DID NOT CONTAIN CONCENTRATIONS OF LEAD ABOVE DETECTIO

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	EPA Fund-Financed		04-01-1983
HRS PACKAGE	Other		04-01-1983
PRELIMINARY ASSESSMENT Low	EPA Fund-Financed		04-01-1983
PRELIMINARY ASSESSMENT NFRAP (No Futher Remedial Action Planned	State, Fund Financed		03-26-1986
SITE INSPECTION NFRAP (No Futher Remedial Action Planned	EPA Fund-Financed	04-01-1983	04-01-1983
SITE INSPECTION NFRAP (No Futher Remedial Action Planned	EPA Fund-Financed	04-01-1985	04-30-1985

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 145	DIST/DIR: 0.34 NE	MAP ID: 12	
NAME: 100 OSER AVENUE ADDRESS: 100 OSER AVENUE HAUPPAUGE NY 11788		REV: 04/01/00 ID1: 152162 ID2: NYD068011543 STATUS: PHONE:	
CONTACT:			
CLASS CODE: 2	REGION: 1	ESTIMATED SIZE: 2.5 ACRES	
SITE TYPE: OPEN DUMP: LAGOON: POND:		STRUCTURE: X LANDFILL:	
<u>SITE OWNER/OPERATOR INFORMATION:</u>			
CURRENT OWNER(S) NAME:		Anorad Corporation	
CURRENT OWNER(S) ADDRESS:		100 Oser Avenue Hauppauge NY 11788	
OPERATOR(S) DURING DISPOSAL:		Sands Textile Finishers, Inc.	
OPERATOR(S) ADDRESS:		100 Oser Avenue Hauppauge NY 11788	
HAZARDOUS WASTE DISPOSAL PERIOD:		1973	TO: 1985
<u>SITE DESCRIPTION:</u>			
From 1973 to 1985, this property was owned by Vanderbilt Industrial Park and occupied by Sands Textile Finishers, Inc., a commercial bulk dry cleaning operation. The property was purchased in 1985 by Mr. Anwar Chitayat through the Suffolk County Industrial Development Agency. Anorad Corp., a manufacturer of positioning equipment, has occupied the Site since 1987. While at this property, Sands Textiles discharged industrial wastes into a 55 gallon drum which discharged to a roof drain system on site. The liquid in this drum contained 100,000 ppb of tetrachloroethylene (PCE). Soil sampled from the roof drain leaching pool was found to contain 12,000 ppm of PCE as well as 70 ppm of trichloroethylene (TCE). Soil samples were acquired from five other potentially contaminated areas at which high concentrations of PCE, TCE and several other volatile organic compounds (VOCs) were detected. Several groundwater monitoring wells, both temporary and permanent, have been installed and sampled at this site. Elevated concentrations of several VOCs have been detected in the groundwater. Most significantly, PCE has been detected in the on-site groundwater at up to 44,000 ppb. Upgradient groundwater is also contaminated by these VOCs, but at much lower concentrations. Public supply wells which are down gradient from this facility have been impacted by VOCs. These wells are presently receiving granular activated carbon treatment. Pall-Rai, a facility upgradient from 100 Oser Avenue, has contributed to the groundwater contamination in the area. The site has been referred to the State Superfund for a RI/FS and IRM which are currently underway. The IRM consists of a Soil Vapor Extraction system to be installed on site in the spring of 2000.			
CONFIRMED HAZARDOUS WASTE DISPOSAL:		QUANTITY:	
VOCs (solvents) F002 Wastes		unknown	
<u>ANALYTICAL DATA AVAILABLE FOR:</u>			
GROUNDWATER: X		SURFACE WATER:	
AIR:		SEDIMENT:	

- Continued on next page -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 145	DIST/DIR: 0.34 NE	MAP ID: 12	
NAME: 100 OSER AVENUE ADDRESS: 100 OSER AVENUE HAUPPAUGE NY 11788		REV: 04/01/00 ID1: 152162 ID2: NYD068011543 STATUS: PHONE:	
CONTACT:			
SOIL: X			
APPLICABLE STANDARDS EXCEEDED FOR:			
GROUNDWATER: X		SURFACE WATER:	
AIR:		DRINKING WATER: X	
GEOTECHNICAL INFORMATION:			
SOIL/ROCK TYPE: Sand and gravel.			
DEPTH TO GROUNDWATER: Range: 70 to 75 feet.			
LEGAL ACTION:			
TYPE:			
STATUS:			
REMEDIATION:			
PROPOSED:		DESIGN:	
ACTIVE: X		COMPLETE:	
ASSESSMENT OF ENVIRONMENTAL PROBLEMS:			
Volatile Organic Compounds (VOCs), presumably from this site, have impacted a public water supply wellfield and private wells. Potential exists for this plume to contaminate groundwater fed ponds in county and state parks and in the Nissequogue River. These surface waters are used for public fishing.			
ASSESSMENT OF HEALTH PROBLEMS:			
The soil and groundwater at 100 Oser Ave are contaminated with volatile organic compounds (VOCs). Groundwater is also contaminated with metals. A public drinking water wellfield located downgradient from this site has been impacted with VOCs, possibly from this site. Carbon filters are installed at the public wellfield station to treat the public water supply. A soil gas survey detected high levels of tetrachloroethene (PCE) in soil vapor beneath and surrounding the on-site building. The concentrations of PCE detected in the on-site building and neighboring commercial building exceeded the NYSDOH indoor air guideline value of 100 micrograms per cubic meter. PCE vapors were not detected in the basements and living spaces of residences closest to the site. An on-site soil vapor extraction system (SVE) is proposed to reduce contaminant levels in soil and soil vapor. Further investigations are necessary to fully evaluate potential exposures to site-related contaminants.			

Environmental FirstSearch Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 146	DIST/DIR: 0.03 NE	MAP ID: 2	
NAME: COMPUTER CIRCUITS	REV: 04/01/00		
ADDRESS: 145 MARCUS BOULEVARD	ID1: 152034		
HAUPPAUGE NY 11729	ID2: NYD125499673		
CONTACT:	STATUS:		
	PHONE:		
<u>ANALYTICAL DATA AVAILABLE FOR:</u>			
GROUNDWATER: X	SURFACE WATER:		
AIR:	SEDIMENT: X		
SOIL:			
<u>APPLICABLE STANDARDS EXCEEDED FOR:</u>			
GROUNDWATER: X	SURFACE WATER:		
AIR:	DRINKING WATER:		
<u>GEOTECHNICAL INFORMATION:</u>			
SOIL/ROCK TYPE:	Sand and gravel.		
DEPTH TO GROUNDWATER:	Range: 100 to 105 feet.		
<u>LEGAL ACTION:</u>			
TYPE:			
STATUS:			
<u>REMEDIATION:</u>			
PROPOSED:		DESIGN:	
ACTIVE:		COMPLETE:	
ASSESSMENT OF ENVIRONMENTAL PROBLEMS:			
Groundwater contamination from wastewater discharged to leaching pools. The wastewater often contained excessive concentrations of heavy metals. Groundwater at the site has been found to contain up to 3000 ppb of TCE. Other chlorinated solvents have also been found in the groundwater at lower concentrations. Recent GW results show decreasing concentrations.			
ASSESSMENT OF HEALTH PROBLEMS:			
Groundwater is the primary source of drinking water in the area. Public water supply wells are 300 feet to the northeast of the site. These wells are contaminated with volatile organic compounds above drinking water standards and are being treated to remove contamination. The source of contamination is not known. Environmental data for the site is limited. Additional environmental data is necessary to fully evaluate the potential for human exposure to site related contamination, which will be obtained during the upcoming remedial investigation.			

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 147	DIST/DIR: 0.75 NW	MAP ID: 3	
NAME: ELECTRO MOTIVE RESEARCH CORP. ADDRESS: 35 DAVIDS DRIVE HAUPPAUGE NY 11788 SUFFOLK		REV: 05/20/99 ID1: 152104 ID2: NYD981184187 STATUS: PHONE:	
CONTACT:			
CLASS CODE: D1	REGION: 1	ESTIMATED SIZE: 0.25 ACRES	
SITE TYPE:			
OPEN DUMP:	STRUCTURE: X		
LAGOON:	LANDFILL:		
POND:			
SITE OWNER/OPERATOR INFORMATION:			
CURRENT OWNER(S) NAME: Davids Drive Properties			
CURRENT OWNER(S) ADDRESS: 310 Osner Ave. Hauppauge NY 11788			
OPERATOR(S) DURING DISPOSAL: Electro Motive Research Corp.			
OPERATOR(S) ADDRESS: 35 Davids Drive Hauppauge NY 11787			
HAZARDOUS WASTE DISPOSAL PERIOD: 1975		TO: 1979	
SITE DESCRIPTION:			
The Electro Motive Research Corp. was a former circuit board manufacturing firm that leased the western half of a building at 35 Davids Drive. There are two storm drains that are located directly behind the building in the loading dock area. The storm drains connect underground to a leachpool which is located in the center of the parking lot. In 1979, employees of the Electro Motive Corp. were seen dumping drums of waste behind the building in a dirt area. Sampling of the storm drains and leaching pools done in 1979 and 1980 revealed elevated levels of copper, iron, nickel, lead, silver and zinc. A Phase I Investigation was completed in June of 1987, and a Phase II Investigation was completed in 1993. There is documented disposal of hazardous waste based on the known generation of listed hazardous waste, sightings of employees dumping wastes on the property and analytical results from sampling done by the Suffolk County Department of Health which revealed lead at levels above the characteristic standard of 5 ppm. No significant threat was identified during the Phase II Investigation, however.			
CONFIRMED HAZARDOUS WASTE DISPOSAL:		QUANTITY:	
Copper		unknown	
Iron		unknown	
Lead		unknown	
Nickel		unknown	
ANALYTICAL DATA AVAILABLE FOR:			
GROUNDWATER:	X	SURFACE WATER:	
AIR:		SEDIMENT:	
SOIL:	X		
APPLICABLE STANDARDS EXCEEDED FOR:			
GROUNDWATER:		SURFACE WATER:	
AIR:		DRINKING WATER:	

- Continued on next page -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 147	DIST/DIR: 0.75 NW	MAP ID: 3	
NAME: ELECTRO MOTIVE RESEARCH CORP. ADDRESS: 35 DAVIDS DRIVE HAUPPAUGE NY 11788 SUFFOLK		REV: 05/20/99 ID1: 152104 ID2: NYD981184187 STATUS: PHONE:	
CONTACT:			
<u>GEOTECHNICAL INFORMATION:</u> SOIL/ROCK TYPE: Sand and Gravel DEPTH TO GROUNDWATER: Approximately 115 feet			
<u>LEGAL ACTION:</u> TYPE: IRM- Consent Order STATUS:			
<u>REMEDATION:</u> PROPOSED: ACTIVE:			
DESIGN: COMPLETE:			
ASSESSMENT OF ENVIRONMENTAL PROBLEMS: There is a probable groundwater contamination plume at this site caused by discharge of heavy metals and solvent wastes.			
ASSESSMENT OF HEALTH PROBLEMS: The rear of the building is completely fenced and should prevent trespassers from entering site properties. Sediments in the catch basins are contaminated with metals, but unless these sediments are disturbed or brought to the surface there is little chance of persons being exposed to the sediments. The potential for surface soils to be contaminated has not been evaluated to date. The groundwater is contaminated with 1,1,1-trichloroethane, however, exposures are not expected because there are no private wells in use near the site.			

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 148	DIST/DIR: 0.11 SE	MAP ID: 4	
NAME: EMR CIRCUITS, INC. ADDRESS: 99 MARCUS BLVD. HAUPPAUGE NY 11788 SUFFOLK		REV: 05/20/99 ID1: 152105 ID2: STATUS: PHONE:	
CONTACT:			
CLASS CODE: D2	REGION: 1	ESTIMATED SIZE: 1 ACRES	
SITE TYPE:			
OPEN DUMP:	STRUCTURE: X		
LAGOON:	LANDFILL:		
POND:			
SITE OWNER/OPERATOR INFORMATION:			
CURRENT OWNER(S) NAME: Grenlein Company			
CURRENT OWNER(S) ADDRESS: c/o N. Klein 175 Great Neck Road Great Neck NY 11021			
OPERATOR(S) DURING DISPOSAL: EMR Circuits			
OPERATOR(S) ADDRESS: 99 Marcus Blvd. Hauppauge NY			
HAZARDOUS WASTE DISPOSAL PERIOD: Feb 1981		TO: Present	
SITE DESCRIPTION:			
The site is a former circuitboard manufacturing facility that illegally discharged spent solvents to two underground leachpools for nearly two years. This dumping was halted in 1984. The Suffolk Co. DHS received complaints, investigated and finally required remediation of the leaching pools. The wastes and soils were removed and replaced with clean sand and gravel in 1984. The question of groundwater contamination remained, and a Phase II investigation was undertaken by the Responsible Party. The Final Phase II investigation was submitted to DEC in January 1992. Additional Sampling of groundwater was undertaken by the RP at the request of the DEC in June 1992. The results of investigation show that this site does not contribute to groundwater contamination in this area, and the remediation completed in 1984 was adequate to remediate this site. No significant threat is associated with this site.			
CONFIRMED HAZARDOUS WASTE DISPOSAL:		QUANTITY:	
Trichloroethane		Unknown	
Trichloroethylene			
Tetrachloroethylene			
Ethyltoluene			
xylene			
Trimethylbenzene			
Trichlorobenzene			
Methylethyl-ketone			
Copper, nickel			
Lead, chromium			
ANALYTICAL DATA AVAILABLE FOR:			
GROUNDWATER: X		SURFACE WATER:	
AIR:		SEDIMENT:	
SOIL:			
APPLICABLE STANDARDS EXCEEDED FOR:			
GROUNDWATER: X		SURFACE WATER:	
AIR:		DRINKING WATER:	

- Continued on next page -

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE

SEARCH ID: 148

DIST/DIR: 0.11 SE

MAP ID: 4

NAME: EMR CIRCUITS, INC.
ADDRESS: 99 MARCUS BLVD.
HAUPPAUGE NY 11788
SUFFOLK

REV: 05/20/99
ID1: 152105
ID2:
STATUS:
PHONE:

CONTACT:

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE: Sand
DEPTH TO GROUNDWATER: 100 feet to glacial aquifer

LEGAL ACTION:

TYPE: Consent Order PII
STATUS: OS

REMEDATION:

PROPOSED: **DESIGN:**
ACTIVE: **COMPLETE:** X

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Heavy discharge to ground through hidden leaching pools for a four year period into central part of deep recharge area. This contaminated leaching pit area has been removed by the RP. No groundwater contamination attributable to this disposal has been found.

ASSESSMENT OF HEALTH PROBLEMS:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE

SEARCH ID: 149	DIST/DIR: 0.66 SE	MAP ID: 5

NAME: GLARO INC.
ADDRESS: 735 OLD WILLETS PATH
HAUPPAUGE NY 11788

REV: 04/01/00
ID1: 152124
ID2: NYD002048627
STATUS:
PHONE:

CONTACT:

CLASS CODE: 2	REGION: 1	ESTIMATED SIZE: 3.3 ACRES

SITE TYPE:

OPEN DUMP:	STRUCTURE: X	
LAGOON:	LANDFILL:	
POND:		

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER(S) NAME: Harry Glass
CURRENT OWNER(S) ADDRESS: 735 Old Willets Path
Hauppauge NY

OPERATOR(S) DURING DISPOSAL: Robert Betensky
OPERATOR(S) ADDRESS: 735 Old Willets Path
Hauppauge NY

HAZARDOUS WASTE DISPOSAL PERIOD: 1974 **TO:** early 1985

SITE DESCRIPTION:

This is an active industrial facility that has been in operation for the past twenty three years. Known discharges of tetrachloroethylene waste have gone into drywells and onto the surface of the ground. Tetrachloroethylene wastes are estimated to have been approximately 20 gallons per day. This practice ended in early 1985. Waste discharges have been observed and documented. Samples were taken in July and November of 1981, and again in January and February of 1985. There is known contamination with chlorinated solvents from discharges; this site poses a significant threat to public and private water supplies, since the area is served by a sole source aquifer. The Division of Environmental Enforcement negotiated a Consent Order to investigate the site, and it was signed on March 31, 1995. The draft Remedial Investigation/Feasibility Study (RI/FS) work plan was received September 27, 1995 and was approved. The Quality Assurance Project Plan (QAPP) and Citizen Participation Plan was completed in May 1996, and field work began in June 1996 and was completed in July 1996. A remedy of air sparging/soil vapor extraction was selected in the March 1997 ROD for the limited soil contamination in the source area and the high concentrations of contaminants in the groundwater. The remedy was completed and began operation in November 1998.

CONFIRMED HAZARDOUS WASTE DISPOSAL:
Tetrachloroethylene and other solvents

QUANTITY:
approximately 271 tons

ANALYTICAL DATA AVAILABLE FOR:

GROUNDWATER: X	SURFACE WATER:	
AIR:	SEDIMENT:	
SOIL:		

APPLICABLE STANDARDS EXCEEDED FOR:

- Continued on next page -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 149	DIST/DIR: 0.66 SE	MAP ID: 5	
NAME: GLARO INC. ADDRESS: 735 OLD WILLETS PATH HAUPPAUGE NY 11788		REV: 04/01/00 ID1: 152124 ID2: NYD002048627 STATUS: PHONE:	
CONTACT:			
GROUNDWATER:	X	SURFACE WATER:	
AIR:		DRINKING WATER:	
<u>GEOTECHNICAL INFORMATION:</u>			
SOIL/ROCK TYPE:		Sand.	
DEPTH TO GROUNDWATER:		Range: 125 to 130 feet.	
<u>LEGAL ACTION:</u>			
TYPE:		Consent Order -RI/FS	
STATUS:		OS	
<u>REMEDIATION:</u>			
PROPOSED:		DESIGN:	
ACTIVE:		COMPLETE: X	
ASSESSMENT OF ENVIRONMENTAL PROBLEMS: Samples from groundwater from three wells show serious contamination of groundwater, which is a source of drinking water.			
ASSESSMENT OF HEALTH PROBLEMS: Solvents (volatile organic compounds) were discharged to on-site drywells, contaminating the soil beneath them. The majority of the site is paved and contamination is at depth, so exposures to site-related contaminants are not expected. Groundwater on-site is contaminated with several volatile organic compounds. The area is served by public water, so exposures to contaminated groundwater are not expected. Four public drinking water supply well fields are within 8,100 feet of the site. Three wells are treated because of contamination with volatile organic compounds. The source of the contamination is not known. A remediation system was installed at the site and is currently in operation to address soil and groundwater contamination.			

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE

SEARCH ID: 150 **DIST/DIR:** 0.72 NE **MAP ID:** 7

NAME: UNEXCELLED CASTINGS
ADDRESS: 663-671 OLD WILLETS PATH
HAUPPAUGE NY 11787

REV: 05/20/99
ID1: 152019
ID2: NYD057729238
STATUS:
PHONE:

CONTACT:

CLASS CODE: D1 **REGION:** I **ESTIMATED SIZE:** ACRES

SITE TYPE:

OPEN DUMP: **STRUCTURE:** X
LAGOON: **LANDFILL:**
POND:

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER(S) NAME: Vanderbilt Associates
CURRENT OWNER(S) ADDRESS: 633-671 Old Willets Path,
Hauppauge NY 11787

OPERATOR(S) DURING DISPOSAL: Unexcelled Castings
OPERATOR(S) ADDRESS: 663-670 Old Willets Path
Hauppauge NY

HAZARDOUS WASTE DISPOSAL PERIOD: **TO:**

SITE DESCRIPTION:

This is an active casting firm. The company uses phenolic binders in the sand cases as part of their operation. A Phase I was completed in 1987. The Phase I Report concluded that it is not appropriate to consider this a hazardous waste site. Follow up sampling conducted in 1989 confirmed the Phase I findings.

CONFIRMED HAZARDOUS WASTE DISPOSAL: **QUANTITY:**

ANALYTICAL DATA AVAILABLE FOR:

GROUNDWATER: **SURFACE WATER:** X
AIR: **SEDIMENT:** X
SOIL:

APPLICABLE STANDARDS EXCEEDED FOR:

GROUNDWATER: **SURFACE WATER:**
AIR: **DRINKING WATER:**

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE: Soil
DEPTH TO GROUNDWATER:

- Continued on next page -

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE

SEARCH ID: 150	DIST/DIR: 0.72 NE	MAP ID: 7

NAME: UNEXCELLED CASTINGS
ADDRESS: 663-671 OLD WILLETS PATH
HAUPPAUGE NY 11787

REV: 05/20/99
ID1: 152019
ID2: NYD057729238
STATUS:
PHONE:

CONTACT:

LEGAL ACTION:

TYPE:
STATUS:

REMEDATION:

PROPOSED:	DESIGN:
ACTIVE:	COMPLETE:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

None:

ASSESSMENT OF HEALTH PROBLEMS:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE			
SEARCH ID: 399	DIST/DIR: NON GC	MAP ID:	
NAME: S.C.W.A. WELLFIELD - HAUPPAUGE ADDRESS: OVAL DRIVE HAUPPAUGE NY		REV: 05/20/99 ID1: 152076 ID2: STATUS: PHONE:	
CONTACT:			
CLASS CODE: D1	REGION: 1	ESTIMATED SIZE:	ACRES
SITE TYPE:			
OPEN DUMP: X	STRUCTURE:		
LAGOON:	LANDFILL:		
POND:			
<u>SITE OWNER/OPERATOR INFORMATION:</u>			
CURRENT OWNER(S) NAME:			
CURRENT OWNER(S) ADDRESS: NY			
OPERATOR(S) DURING DISPOSAL:			
OPERATOR(S) ADDRESS: NY			
HAZARDOUS WASTE DISPOSAL PERIOD:		TO: ,1978	
<u>SITE DESCRIPTION:</u>			
Public water supply well. Well is contaminated by unknown source.			
CONFIRMED HAZARDOUS WASTE DISPOSAL:		QUANTITY:	
Trichloroethylene		unknown	
Tetrachloroethylene		unknown	
<u>ANALYTICAL DATA AVAILABLE FOR:</u>			
GROUNDWATER: X		SURFACE WATER:	
AIR:		SEDIMENT:	
SOIL:			
<u>APPLICABLE STANDARDS EXCEEDED FOR:</u>			
GROUNDWATER: X		SURFACE WATER:	
AIR:		DRINKING WATER: X	
<u>GEOTECHNICAL INFORMATION:</u>			
SOIL/ROCK TYPE:			
DEPTH TO GROUNDWATER:			
<u>LEGAL ACTION:</u>			
TYPE:			

- Continued on next page -

JOB: TED00-01

Selected Site Details Page - 20

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE

SEARCH ID: 400	DIST/DIR: NON GC	MAP ID:

NAME: WATCH HILL SAND AND GRAVEL ADDRESS: RTE. 111 MOTOR PKWY. HAUPPAUGE NY 11788 SUFFOLK CONTACT:	REV: 05/20/99 ID1: 152084 ID2: STATUS: PHONE:

CLASS CODE: D1	REGION: 1	ESTIMATED SIZE: 45 ACRES

SITE TYPE:

OPEN DUMP: LAGOON: POND:	STRUCTURE: LANDFILL: X

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER(S) NAME:	Expressway Research + Development Co
CURRENT OWNER(S) ADDRESS:	350 Mid Island Plaza Hicksville NY 11801

OPERATOR(S) DURING DISPOSAL:	Water Hill Sand & Gravel
OPERATOR(S) ADDRESS:	Old Northport Road Kings Park NY

HAZARDOUS WASTE DISPOSAL PERIOD: TO:

SITE DESCRIPTION:

This site was used as a construction and demolition landfill. A Phase I report has been completed. No hazardous waste disposal has been documented at this site.

CONFIRMED HAZARDOUS WASTE DISPOSAL: Unknown	QUANTITY:

ANALYTICAL DATA AVAILABLE FOR:

GROUNDWATER: AIR: SOIL:	SURFACE WATER: SEDIMENT:

APPLICABLE STANDARDS EXCEEDED FOR:

GROUNDWATER: AIR:	SURFACE WATER: DRINKING WATER:

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE:	Sandy gravel
DEPTH TO GROUNDWATER:	

LEGAL ACTION:

- Continued on next page -

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SITE

SEARCH ID: 400

DIST/DIR: NON GC

MAP ID:

NAME: WATCH HILL SAND AND GRAVEL
ADDRESS: RTE. 111 MOTOR PKWY.
HAUPPAUGE NY 11788
SUFFOLK

REV: 05/20/99
ID1: 152084
ID2:
STATUS:
PHONE:

CONTACT:

TYPE:
STATUS:

REMEDIATION:

PROPOSED:

DESIGN:

ACTIVE:

COMPLETE:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

None related to the disposal of hazardous waste.

ASSESSMENT OF HEALTH PROBLEMS:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

SOLID WASTE LANDFILL SITE

SEARCH ID: 489	DIST/DIR: NON GC	MAP ID:

NAME: PILGRIM STATE HOSP. SLF
ADDRESS: PILGRIM STATE HOSPIT
BRENTWOOD NY 11717

REV: 12/01/99
ID1: 1-52S23
ID2:
STATUS: INACTIVE
PHONE:

CONTACT: NYS DEPT OF MENTAL HYGIEN

SITE DESCRIPTION

REGULATORY STATUS: NONE
DEC REGION: 1
AQUIFER TYPE: SOLE
WASTE TYPE(S):

SINGLE LINER SYSTEM: NO	SINGLE COMPOSITE LINER SYSTEM: NO	
DOUBLE LINER SYSTEM: NO	DOUBLE COMPOSITE LINER SYSTEM: NO	

DATE FIRST RECEIVED WASTE:	DATE STOPPED RECEIVING WASTE:
360 PERMIT NUMBER: 0	
360 PERMIT ISSUE DATE:	
DATE AUTHORIZED TO OPERATE:	DATE OPERATION PERMIT EXPIRES:
DATE ORDER ON CONSENT SIGNED:	ACCOMPLISH DATE OF ORDER:

CONSTRUCTION PERMIT NUMBER: 0	DATE CONSTRUCTION PERMIT EXPIRES:
DATE AUTHORIZED TO CONSTRUCT:	

OWNER INFORMATION

OWNER:	NYS DEPT OF MENTAL HYGIEN
ADDRESS:	PILGRIM STATE HOSPIT BRENTWOOD, NY 11717
OPERATOR/CONTACT NAME:	NYS DEPT OF MENTAL HYGIEN
PHONE:	() -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TRIS SITE			
SEARCH ID: 133	DIST/DIR: 0.13 SW	MAP ID: 14	
NAME: APPLIED DIGITAL DATA CORP. ADDRESS: 100 MARCUS BLVD. HAUPPAUGE NY 11788		REV: ID1: NYD049205602 ID2: 11788PPLDD100MA STATUS: OPEN PHONE: 5162315400	
CONTACT: MERCY CORDERO			
DETAILS NOT AVAILABLE			

TRIS SITE			
SEARCH ID: 134	DIST/DIR: 0.13 SW	MAP ID: 14	
NAME: APPLIED DIGITAL DATA CORP. ADDRESS: 100 MARCUS BLVD. HAUPPAUGE NY 11788 SUFFOLK		REV: ID1: 11788PPLDD100MA ID2: NYD049205602 STATUS: 0 PHONE: 5162315400	
CONTACT: MERCY CORDERO			
DETAILS NOT AVAILABLE			

TRIS SITE			
SEARCH ID: 135	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: ARKAY PACKAGING CORP. ADDRESS: 22 ARKAY DR. HAUPPAUGE NY 11788 SUFFOLK		REV: ID1: NYD001635622 ID2: 11788RKYP22ARK STATUS: OPEN PHONE: 2732000	
CONTACT: WALTER SHIELDS			
DETAILS NOT AVAILABLE			

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 153 **DIST/DIR:** 0.48 NE **MAP ID:** 62

NAME: AIL SYSTEMS
ADDRESS: 45 OSER AVENUE
HAUPPAUGE NY

REV: 01/16/96
ID1: 9512797
ID2:
STATUS: CLOSED
PHONE:

CONTACT:

SPILL DATE: 1/15/96
SPILL TIME: 10:15

DATE REPORTED: 1/15/96
TIME REPORTED: 10:38

MATERIAL SPILLED: #2 FUEL OIL
MATERIAL CLASS: 1

AMOUNT SPILLED: 5 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: HUMAN ERROR
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: NON-COMMERCIAL/INSTITUTIONAL
REPORTED BY: 01
CALLER REMARKS:
DRIVER DIDN T HEAR VENT ALARM.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: NONE
SPILL CONTACT: A.I.L. SYSTEMS

TELEPHONE: (516) 595-3480

SPILLER: MEENAN OIL
ADDRESS: 3020 BURNS AVENUE
WANTAGH, NY
SPILLER CONTACT: FRAN DAMANTI

TELEPHONE: (516) 783-1000

CALLER: FRAN DAMANTI
AGENCY: MEENAN OIL CO
TELEPHONE: (516) 783-1000

NOTIFIER: SHARON TESTA
AGENCY: MEENAN OIL CO
TELEPHONE: (516) 783-1000

LAST DEC UPDATE: 01/16/96
DOES CLEAN UP MEET STANDARDS? YES
DEC REMARKS:

CLOSE DATE: 01/16/96
PENALTY RECOMMENDED? NO

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 156	DIST/DIR: 0.05 NE	MAP ID: 74	
NAME: APEX PLASTICS INDUST ADDRESS: 155 MARCUS BLVD HAUPPAUGE NY		REV: 11/09/92 ID1: 9110694 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 1/14/92 SPILL TIME: 11:00		DATE REPORTED: 1/14/92 TIME REPORTED: 11:59	
MATERIAL SPILLED: GASOLINE MATERIAL CLASS: 1		AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: TANK TEST FAILURE RESOURCE AFFECTED: GROUNDWATER WATERBODY AFFECTED: SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL REPORTED BY: 05 CALLER REMARKS: 5K FAILED GROSS LEAK, PETROTITE SYSTEM, BONA FIDE TESTER			
REGION: 1	UST TRUST? YES		
SPILL INVESTIGATOR: T/T/F SPILL CONTACT:		TELEPHONE:	
SPILLER: APEX PLASTICS INDUST ADDRESS: P.O. 11008 HAUPPAUGE, NY			
SPILLER CONTACT:		TELEPHONE:	
CALLER: ANN CARFORA AGENCY: BONA FIDE INDUSTRIES TELEPHONE: (516) 758-7421		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 11/09/92 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: 04/16/92: TANK REMOVED 2/21/92, 2 YDS CONT SOIL REMOVED AND DISPOSED.		CLOSE DATE: 04/16/92 PENALTY RECOMMENDED? NO	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 157	DIST/DIR: 0.05 NE	MAP ID: 74	
NAME: APEX PLATIC ADDRESS: 155 MARCUS BLVD HAUPPAUGE NY		REV: 10/30/95 ID1: 9509237 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 10/26/95 SPILL TIME: 06:30		DATE REPORTED: 10/26/95 TIME REPORTED: 08:56	
MATERIAL SPILLED: #2 FUEL OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 3 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL:		EQUIPMENT FAILURE	
RESOURCE AFFECTED:		ON LAND	
WATERBODY AFFECTED:			
SOURCE OF SPILL:		COMMERCIAL/INDUSTRIAL	
REPORTED BY:		01	
CALLER REMARKS: LINE MALFUNCTION GOING INTO BOILER - SERVICE MAN ON SCENE FOR REPAIR AND CLEAN UP			
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: NONE			
SPILL CONTACT:		TELEPHONE:	
SPILLER: APEX PLATIC ADDRESS: 155 MARCUS BLVD HAUPPAUGE,			
SPILLER CONTACT:		TELEPHONE:	
CALLER: STEVE SIERO AGENCY: APEX PLASTIC TELEPHONE: (516) 231-8888		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 10/30/95 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: NO OTHER ACTION REQ D		CLOSE DATE: 10/27/95 PENALTY RECOMMENDED? NO	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 158 **DIST/DIR:** 0.13 SW **MAP ID:** 14

NAME: APPLIED DIGITAL DATA	REV: 11/27/91
ADDRESS: 100 MARCUS BLVD	ID1: 9109103
HAUPPAUGE NY	ID2:
CONTACT:	STATUS: CLOSED
	PHONE:

SPILL DATE: 11/25/91	DATE REPORTED: 11/25/91
SPILL TIME: 18:15	TIME REPORTED: 19:49

MATERIAL SPILLED: #2 FUEL OIL	AMOUNT SPILLED: 8 G
MATERIAL CLASS: 1	AMOUNT RECOVERED: 0 G

CAUSE OF SPILL:	EQUIPMENT FAILURE
RESOURCE AFFECTED:	ON LAND
WATERBODY AFFECTED:	
SOURCE OF SPILL:	COMMERCIAL/INDUSTRIAL
REPORTED BY:	OTHER
CALLER REMARKS:	
UNK CAUSE, SPILL CLEANED UP	

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: NONE	TELEPHONE:
SPILL CONTACT:	

SPILLER: APPLIED DIGITAL DATA	
ADDRESS:	

SPILLER CONTACT:	TELEPHONE: (516) 231-5400

CALLER: RONNY FRANZ	NOTIFIER:
AGENCY: COMMANDER OIL	AGENCY:
TELEPHONE: (516) 922-7000	TELEPHONE:

LAST DEC UPDATE: 11/27/91	CLOSE DATE: 11/27/91
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO
DEC REMARKS:	
11/27/91: NO RESPONSE NEEDED.	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 160	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: ARKAY PACKAGING CORP ADDRESS: 22 ARKAY DRIVE HAUPPAUGE NY		REV: 05/25/95 ID1: 9405200 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 7/15/94 SPILL TIME: 18:30		DATE REPORTED: 7/15/94 TIME REPORTED: 18:52	
MATERIAL SPILLED: #2 FUEL OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: RESOURCE AFFECTED: WATERBODY AFFECTED: SOURCE OF SPILL: REPORTED BY: CALLER REMARKS:		TANK TEST FAILURE GROUNDWATER COMMERCIAL/INDUSTRIAL 05 10K FAILED -.1652, TYREE TESTER, TOOK SYSTEM OUT OF SERVICE, WILL NOTIFY SCHD	
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: T/T/F SPILL CONTACT:		TELEPHONE:	
SPILLER: ARKAY PACKAGING CORP ADDRESS:			
SPILLER CONTACT:		TELEPHONE:	
CALLER: JIM LEONARD AGENCY: TYREE TELEPHONE: (516) 249-3150		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 05/25/95 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS:		CLOSE DATE: 05/23/95 PENALTY RECOMMENDED? NO	
05/23/95: TANK REMOVED 9/24/94 LAMANNO ATTENDED, TOTAL OF 2YDS OF CONT SOIL REMOVED AT WHICH POINT CONTAMINATION WAS NO LONGER DETECTED, SOIL DISPOSED OF NO FURTHER ACTION.			

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 166 **DIST/DIR:** 0.07 SW **MAP ID:** 13

NAME: EUA COGENEX ADDRESS: 22 ARKAY DRIVE HAUPPAUGE NY	REV: 11/10/92 ID1: 9205963 ID2: STATUS: CLOSED PHONE:
CONTACT:	

SPILL DATE: 8/23/92	DATE REPORTED: 8/24/92
SPILL TIME: 13:00	TIME REPORTED: 10:45

MATERIAL SPILLED: WASTE OIL	AMOUNT SPILLED: 85 G
MATERIAL CLASS: 1	AMOUNT RECOVERED: 0 G

MATERIAL SPILLED: MOTOR OIL	AMOUNT SPILLED: 0
MATERIAL CLASS: 1	AMOUNT RECOVERED: 0

CAUSE OF SPILL: EQUIPMENT FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: 01
CALLER REMARKS:
GENERATOR ENCLOSURE LINES MELTED 1 GENERATOR AFFECTED

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: DEROSA	TELEPHONE:
SPILL CONTACT:	

SPILLER: EUA COGENEX	TELEPHONE:
ADDRESS:	
SPILLER CONTACT:	

CALLER: ROCK CUMMINGS	NOTIFIER:
AGENCY: EUA COGENEX	AGENCY:
TELEPHONE: (508) 441-0090	TELEPHONE:

LAST DEC UPDATE: 11/10/92	CLOSE DATE: 08/27/92
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO
DEC REMARKS: 08/25/92: SPILL CLEANED UP-NO FURTHER ACTION.	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 167	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: EVA COGENICS ADDRESS: 22 ARKAY DRIVE HAUPPAUGE NY		REV: 11/10/92 ID1: 9205995 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 8/24/92 SPILL TIME: 08:30		DATE REPORTED: 8/24/92 TIME REPORTED: 16:02	
MATERIAL SPILLED: #2 FUEL OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: OTHER RESOURCE AFFECTED: ON LAND WATERBODY AFFECTED: SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL REPORTED BY: 02 CALLER REMARKS: CO GEN PLANT HAD SPILL, FIRE THIS WEEKEND SPILL ON GROUND, CLEANUP MAY HAVE STARTED, SEE 92-05963, NO OTHER INFO			
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: DEROSA SPILL CONTACT:		TELEPHONE:	
SPILLER: EVA COGENICS ADDRESS:			
SPILLER CONTACT:		TELEPHONE: (508) 441-0090	
CALLER: JEAN FREY AGENCY: ADMIN ASSIST TELEPHONE: (516) 273-2000		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 11/10/92 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS:		CLOSE DATE: 08/25/92 PENALTY RECOMMENDED? NO	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 168 **DIST/DIR:** 0.50 SW **MAP ID:** 49

NAME: FIRST ALLEN PARTNER LTD	REV: / /
ADDRESS: 89 CABOT STREET	ID1: 9401391
HAUPPAUGE NY	ID2:
CONTACT:	STATUS: ACTIVE
	PHONE:

SPILL DATE: 4/28/94	DATE REPORTED: 4/28/94
SPILL TIME: 16:20	TIME REPORTED: 08:30

MATERIAL SPILLED: #2 FUEL OIL	AMOUNT SPILLED: 0 G
MATERIAL CLASS: 1	AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: 05
CALLER REMARKS:
TYREE TESTER, TANK FAILED AT -.248, SYSTEM FAILURE, TYREE TO REPLACE TANK IN A FEW DAYS, NO OTHERS NOTIFIED

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: T/T/F	TELEPHONE:
SPILL CONTACT:	

SPILLER: FIRST ALLEN PARTNER LTD	TELEPHONE:
ADDRESS: 101 AUTUMN DRIVE	
HAUPPAUGE,	
SPILLER CONTACT:	

CALLER: ELLEN PENNA	NOTIFIER:
AGENCY: TYREE	AGENCY:
TELEPHONE: (516) 249-3150	TELEPHONE:

LAST DEC UPDATE: / /	CLOSE DATE: / /
DOES CLEAN UP MEET STANDARDS? NO	PENALTY RECOMMENDED? NO
DEC REMARKS:	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 171 **DIST/DIR:** 0.37 NW **MAP ID:** 31

NAME: JACO ELECTRONIC
ADDRESS: 145 OSER AVENUE
HAUPPAUGE NY

REV: 07/23/90
ID1: 9002759
ID2:
STATUS: CLOSED
PHONE:

CONTACT:

SPILL DATE: 6/8/90
SPILL TIME: 13:30

DATE REPORTED: 6/8/90
TIME REPORTED: 15:00

MATERIAL SPILLED: #2 FUEL OIL
MATERIAL CLASS: 1

AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: NON-COMMERCIAL/INSTITUTIONAL
REPORTED BY: 05
CALLER REMARKS:
10K FAILED GROSS LEAK. ISLAND PUMP & TANK TESTER.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: LEUNG
SPILL CONTACT:

TELEPHONE:

SPILLER: JACO ELECTRONIC
ADDRESS: 145 OSER AVENUE
HAUPPAUGE, NY

SPILLER CONTACT:

TELEPHONE:

CALLER: CHARLIE PRICE
AGENCY: ISLAND PUMP & TANK
TELEPHONE: (516) 261-1590

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 07/23/90
DOES CLEAN UP MEET STANDARDS? YES
DEC REMARKS:

CLOSE DATE: 07/20/90
PENALTY RECOMMENDED? NO

07/20/90: PIPING REPLACED 6/21, SYSTEM PASSED RETEST.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 172 **DIST/DIR:** 0.37 NW **MAP ID:** 31

NAME: JACO ELECTRONICS
ADDRESS: 145 OSER AVENUE
HAUPPAUGE NY

REV: 07/24/96
ID1: 9602106
ID2:
STATUS: CLOSED
PHONE:

CONTACT:

SPILL DATE: 5/13/96
SPILL TIME: 18:30

DATE REPORTED: 5/13/96
TIME REPORTED: 19:54

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: 05
CALLER REMARKS:

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: T/T/F
SPILL CONTACT: CHARLES FERRY **TELEPHONE:** (516) 273-5500

SPILLER: JACO ELECTRONICS
ADDRESS: 145 OSER AVENUE
HAUPPAUGE,
SPILLER CONTACT: CHARLES FERRY **TELEPHONE:** (516) 273-5500

CALLER: ROBERT NEDWICK **NOTIFIER:** ROBERT NEDWICK
AGENCY: ISLAND PUMP AND TANK **AGENCY:** ISLAND PUMP AND TANK
TELEPHONE: (516) 261-1590 **TELEPHONE:** (516) 261-1590

LAST DEC UPDATE: 07/24/96 **CLOSE DATE:** 07/23/96
DOES CLEAN UP MEET STANDARDS? YES **PENALTY RECOMMENDED?** NO

DEC REMARKS:
TANK BLED AND PASSED SYSTEM RETEST 6/5/96, NO CONTAMINATION FOUND PER ISLAND PUMP AND TANK. NO FURTHER ACTION NEEDED AT THIS TIME

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 176	DIST/DIR: 0.28 NE	MAP ID: 10

NAME: LILCO ADDRESS: 110 PLANT AVENUE HAUPPAUGE NY	REV: 10/05/95 ID1: 9416968 ID2: STATUS: CLOSED PHONE:
CONTACT:	

SPILL DATE: 3/31/95	DATE REPORTED: 3/31/95
SPILL TIME: 12:15	TIME REPORTED: 13:05

MATERIAL SPILLED: NON PCB OIL	AMOUNT SPILLED: 1 G
MATERIAL CLASS: 1	AMOUNT RECOVERED: 0 G

CAUSE OF SPILL:	EQUIPMENT FAILURE
RESOURCE AFFECTED:	ON LAND
WATERBODY AFFECTED:	
SOURCE OF SPILL:	COMMERCIAL/INDUSTRIAL
REPORTED BY:	01
CALLER REMARKS: AT TOWN OF HAUPPAUGE	

REGION: 1	UST TRUST?	NO

SPILL INVESTIGATOR: MATTHEWS	
SPILL CONTACT:	TELEPHONE:

SPILLER: LILCO	
ADDRESS:	
SPILLER CONTACT:	TELEPHONE:

CALLER: MICHAEL TUCKER	NOTIFIER:
AGENCY: LILCO	AGENCY:
TELEPHONE: (516) 391-6406	TELEPHONE:

LAST DEC UPDATE: 10/05/95	CLOSE DATE: 10/04/95
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO
DEC REMARKS: 10/04/95: CLEANUP BY LILCO, PCB ANALYSIS REC VD.	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 177	DIST/DIR: 0.28 NE	MAP ID: 10	
NAME: LILCO ADDRESS: 110 PLANT AVENUE HAUPPAUGE NY		REV: 06/19/90 ID1: 9002553 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 6/5/90 SPILL TIME: 14:30		DATE REPORTED: 6/5/90 TIME REPORTED: 15:30	
MATERIAL SPILLED: NON PCB OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 50 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: RESOURCE AFFECTED: WATERBODY AFFECTED: SOURCE OF SPILL: REPORTED BY: CALLER REMARKS:		EQUIPMENT FAILURE GROUNDWATER COMMERCIAL/INDUSTRIAL 01 LEAKING PAD MOUNT TRANSFORMER (600 GAL CAPACITY) UNKNOWN DURATION OF LEAK. MPC BEGIN CLEANUP ON 6/6/90	
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: ACAMPORA SPILL CONTACT:		TELEPHONE:	
SPILLER: LILCO ADDRESS:			
SPILLER CONTACT:		TELEPHONE:	
CALLER: MIKE LAURO AGENCY: LILCO TELEPHONE: (516) 420-6143		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 06/19/90 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS:		CLOSE DATE: 06/15/90 PENALTY RECOMMENDED? NO	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 191	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: U.A COGENEX ADDRESS: 22 ARKAY DRIVE HAUPPAUGE NY		REV: 03/15/94 ID1: 9104259 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 7/22/91 SPILL TIME: 07:15		DATE REPORTED: 7/22/91 TIME REPORTED: 07:25	
MATERIAL SPILLED: WASTE OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 10 G AMOUNT RECOVERED: 0 G	
MATERIAL SPILLED: MOTOR OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 0 AMOUNT RECOVERED: 0	
CAUSE OF SPILL:		EQUIPMENT FAILURE	
RESOURCE AFFECTED:		ON LAND	
WATERBODY AFFECTED:			
SOURCE OF SPILL:		COMMERCIAL VEHICLE	
REPORTED BY:		01	
CALLER REMARKS: CRANK CASE OVERFILLED AND WAS LEAKING. PLAN TO HIRE SOMEONE TO PERFORM CLEANUP.			
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: KISPRT			
SPILL CONTACT:		TELEPHONE:	
SPILLER: U.A COGENEX ADDRESS: 51 VIRGINIA AVENUE WEST NOYACK, NY			
SPILLER CONTACT:		TELEPHONE:	
CALLER: ERNIE DAMINI AGENCY: U.A. COGENEX TELEPHONE: (914) 391-9633		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 03/15/94 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: 03/12/94: AFFECTED SOIL REMOVED. NO NEED FOR FURTHER ACTION.		CLOSE DATE: 03/12/94 PENALTY RECOMMENDED? NO	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE

SEARCH ID: 195 **DIST/DIR:** 0.27 NE **MAP ID:** 66

NAME: UNK ADDRESS: 90 PLANT AVENUE HAUPPAUGE NY	REV: 06/09/95 ID1: 8910754 ID2: STATUS: CLOSED PHONE:
CONTACT:	

SPILL DATE: 2/11/90	DATE REPORTED: 2/11/90
SPILL TIME: 18:40	TIME REPORTED: 20:17

MATERIAL SPILLED: UNKNOWN PETROLEUM	AMOUNT SPILLED: 150 G
MATERIAL CLASS: 1	AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: UNKNOWN
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: UNKNOWN
REPORTED BY: 04
CALLER REMARKS:
FUEL SPILLED IN PARKING LOT. HAUPPAUGE F.D ON SCENE.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: RAYMOND	TELEPHONE:
SPILL CONTACT:	

SPILLER: UNK
ADDRESS:

SPILLER CONTACT:	TELEPHONE:

CALLER: DISPATCHER #93
AGENCY: SMITHTOWN CODE ENFORCEMEN
TELEPHONE: (516) 360-7553

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 06/09/95
DOES CLEAN UP MEET STANDARDS? YES
DEC REMARKS:

CLOSE DATE: 09/22/92
PENALTY RECOMMENDED? NO

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE																																																																														
SEARCH ID: 209	DIST/DIR: 0.13 SW	MAP ID: 14																																																																												
NAME: NORTHVILLE INDUSTRIES		REV:	07/20/98																																																																											
ADDRESS: 100 MARCUS BLVD		ID1:	8606298																																																																											
HAUPPAUGE NY		ID2:																																																																												
SUFFOLK		STATUS:	CLOSED																																																																											
CONTACT:		PHONE:																																																																												
<table style="width: 100%;"><tr><td style="width: 33%;">SPILL DATE: 01/09/87</td><td style="width: 33%;">DATE REPORTED: 01/09/87</td><td style="width: 34%;"></td></tr><tr><td>SPILL TIME: 18:45</td><td>TIME REPORTED: 19:15</td><td></td></tr><tr><td>MATERIAL SPILLED: #2 FUEL OIL</td><td>AMOUNT SPILLED: 100 G</td><td></td></tr><tr><td>MATERIAL CLASS: PETROLEUM</td><td>AMOUNT RECOVERED: 0 G</td><td></td></tr><tr><td colspan="3">CAUSE OF SPILL: TANK OVERFILL</td></tr><tr><td colspan="3">RESOURCE AFFECTED: IN SEWER</td></tr><tr><td colspan="3">WATERBODY AFFECTED:</td></tr><tr><td colspan="3">SOURCE OF SPILL: TANK TRUCK</td></tr><tr><td colspan="3">REPORTED BY: RESPONSIBLE PARTY</td></tr><tr><td colspan="3">CALLER REMARKS:</td></tr><tr><td colspan="3">OVERFILL DURING DELIVERY OUT OF VENTS INTO LOAD DOCK AREA TO DRAIN</td></tr><tr><td>REGION: 1</td><td>UST TRUST?</td><td>NO</td></tr><tr><td>SPILL INVESTIGATOR: PARISH FD</td><td colspan="2">TELEPHONE:</td></tr><tr><td>SPILL CONTACT:</td><td colspan="2"></td></tr><tr><td>SPILLER: NORTHVILLE INDUSTRIES</td><td colspan="2"></td></tr><tr><td>ADDRESS: SOUND SHORE ROAD</td><td colspan="2"></td></tr><tr><td>RIVERHEAD, NY</td><td colspan="2"></td></tr><tr><td>SPILLER CONTACT:</td><td colspan="2">TELEPHONE: (727) 560-</td></tr><tr><td>CALLER:</td><td colspan="2">NOTIFIER:</td></tr><tr><td>AGENCY:</td><td colspan="2">AGENCY:</td></tr><tr><td>TELEPHONE:</td><td colspan="2">TELEPHONE:</td></tr><tr><td>LAST DEC UPDATE: 07/20/98</td><td colspan="2">CLOSE DATE: 01/12/87</td></tr><tr><td>DOES CLEAN UP MEET STANDARDS? YES</td><td colspan="2">PENALTY RECOMMENDED? NO</td></tr><tr><td colspan="3">DEC REMARKS:</td></tr><tr><td colspan="3">/ / : SPILLER CLEANED UP.</td></tr></table>				SPILL DATE: 01/09/87	DATE REPORTED: 01/09/87		SPILL TIME: 18:45	TIME REPORTED: 19:15		MATERIAL SPILLED: #2 FUEL OIL	AMOUNT SPILLED: 100 G		MATERIAL CLASS: PETROLEUM	AMOUNT RECOVERED: 0 G		CAUSE OF SPILL: TANK OVERFILL			RESOURCE AFFECTED: IN SEWER			WATERBODY AFFECTED:			SOURCE OF SPILL: TANK TRUCK			REPORTED BY: RESPONSIBLE PARTY			CALLER REMARKS:			OVERFILL DURING DELIVERY OUT OF VENTS INTO LOAD DOCK AREA TO DRAIN			REGION: 1	UST TRUST?	NO	SPILL INVESTIGATOR: PARISH FD	TELEPHONE:		SPILL CONTACT:			SPILLER: NORTHVILLE INDUSTRIES			ADDRESS: SOUND SHORE ROAD			RIVERHEAD, NY			SPILLER CONTACT:	TELEPHONE: (727) 560-		CALLER:	NOTIFIER:		AGENCY:	AGENCY:		TELEPHONE:	TELEPHONE:		LAST DEC UPDATE: 07/20/98	CLOSE DATE: 01/12/87		DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO		DEC REMARKS:			/ / : SPILLER CLEANED UP.		
SPILL DATE: 01/09/87	DATE REPORTED: 01/09/87																																																																													
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DEC REMARKS:																																																																														
/ / : SPILLER CLEANED UP.																																																																														

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 217 **DIST/DIR:** 0.28 SE **MAP ID:** 50

NAME: STANDARD MICRO SYS CORP ADDRESS: 35 MARCUS BLVD HAUPPAUGE NY SUFFOLK CONTACT:	REV: 07/20/98 ID1: 8606106 ID2: STATUS: CLOSED PHONE:

SPILL DATE: 12/30/86 SPILL TIME: 01:30	DATE REPORTED: 12/30/86 TIME REPORTED: 09:35

MATERIAL SPILLED: ETHYLENE GLYCOL MATERIAL CLASS: HAZARDOUS	AMOUNT SPILLED: 300 G AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: EQUIPMENT FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS:
SPILLED ONTO FLOOR GOT INTO GW DISCHARGING WASTE TREATMENT SYSTEM.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: SPDES UNIT FD SPILL CONTACT:	TELEPHONE:

SPILLER: STANDARD MICROSYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE, NY SPILLER CONTACT:	TELEPHONE: (273) 310-

CALLER: AGENCY: TELEPHONE:	NOTIFIER: AGENCY: TELEPHONE:

LAST DEC UPDATE: 07/20/98 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: / / : SPILLER TO NOTIFY SCDHS. / / : SPILLER TO NOTIFY SCDHS. SPDES FACILITY-REFERRED TO SPDES UNIT.	CLOSE DATE: 12/31/86 PENALTY RECOMMENDED? NO

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 218	DIST/DIR: 0.28 SE	MAP ID: 50

NAME: STANDARD MICRO SYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE NY SUFFOLK CONTACT:	REV: 07/21/98 ID1: 8606600 ID2: STATUS: CLOSED PHONE:

SPILL DATE: 01/25/87 SPILL TIME: 16:00	DATE REPORTED: 01/27/87 TIME REPORTED: 11:45

MATERIAL SPILLED: ETHYLENE GLYCOL MATERIAL CLASS: HAZARDOUS	AMOUNT SPILLED: 100 L AMOUNT RECOVERED: 0 L

CAUSE OF SPILL: RESOURCE AFFECTED: WATERBODY AFFECTED: SOURCE OF SPILL: REPORTED BY: CALLER REMARKS:	EQUIPMENT FAILURE ON LAND COMMERCIAL/INDUSTRIAL RESPONSIBLE PARTY SPOILED INSIDE OF BLDG. SOME EXITED BLDG AND ENTERED ON SITE TREATMENT PLANT.

REGION: 1	UST TRUST? NO	

SPILL INVESTIGATOR: SPDES UNIT FD SPILL CONTACT:	TELEPHONE:

SPILLER: STANDARD MICROSYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE, NY SPILLER CONTACT:	TELEPHONE: (273) 310-

CALLER: AGENCY: TELEPHONE:	NOTIFIER: AGENCY: TELEPHONE:

LAST DEC UPDATE: 07/21/98 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS:	CLOSE DATE: 01/30/87 PENALTY RECOMMENDED? NO

// : PLANT BEING SAMPLED FOR ETHYLENE GLYCOL. // : PLANT BEING SAMPLED FOR ETHYLENE GLYCOL 1/28/87
REFERRED TO SPDES UNIT 1/28/87.

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE			
SEARCH ID: 219	DIST/DIR: 0.28 SE	MAP ID: 50	
NAME: STANDARD MICRO SYSTEMS		REV:	09/04/98
ADDRESS: 35 MARCUS BLVD		ID1:	8708182
HAUPPAUGE NY		ID2:	
SUFFOLK		STATUS:	CLOSED
CONTACT:		PHONE:	
SPILL DATE:	12/11/87	DATE REPORTED:	12/21/87
SPILL TIME:	12:00	TIME REPORTED:	14:30
CAUSE OF SPILL:	TANK FAILURE		
RESOURCE AFFECTED:	ON LAND		
WATERBODY AFFECTED:			
SOURCE OF SPILL:	COMMERCIAL/INDUSTRIAL		
REPORTED BY:	RESPONSIBLE PARTY		
CALLER REMARKS:			
TANK-7K-& SECONDRY CONTAINMENT FAILED. TANKK TO BE REMOVED 12/28/87.WILL ATTEMPT TO NEUTRALIZE SOIL IN PLACE.			
REGION:	1	UST TRUST?	NO
SPILL INVESTIGATOR:	O NEILL	FD	
SPILL CONTACT:			TELEPHONE:
SPILLER:	STANDARD MICRO SYSTEMS		
ADDRESS:	35 MARCUS BLVD		
	HAUPPAUGE, NY		
SPILLER CONTACT:			TELEPHONE: (516) 273-3100
CALLER:	NOTIFIER:		
AGENCY:	AGENCY:		
TELEPHONE:	TELEPHONE:		
LAST DEC UPDATE:	09/04/98	CLOSE DATE:	01/14/88
DOES CLEAN UP MEET STANDARDS?	YES	PENALTY RECOMMENDED?	NO
DEC REMARKS:			
/ / : VERTICAL TANK UNDERGROUD TANK IN CONCRETE VAULT. / / : VERTICAL TANK UNDERGROUD TANK IN CONCRETE VAULT.WASTE ACID TANK REMOVED 12/28.BROKEN SEAM ON BOTTOM.SCDH TO FOLLOU UP AS NEEDED.			
10/10/95: THIS IS ADDITIONAL INFORMATION ABOUT MATERIAL SPILLED FROM THE TRANSLATION OF THE OLD SPILL FILE: WASTE ACIDS.			

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 221	DIST/DIR: 0.11 SW	MAP ID: 91

NAME: STANDARD MICROSYSTEMS
ADDRESS: 110 MARCUS BLVD
HAUPPAUGE NY

REV: 08/28/98
ID1: 8702539
ID2:
STATUS: CLOSED
PHONE:

CONTACT:

SPILL DATE: 06/29/87
SPILL TIME: 15:00

DATE REPORTED: 06/29/87
TIME REPORTED: 15:20

MATERIAL SPILLED: #2 FUEL OIL
MATERIAL CLASS: PETROLEUM

AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: TANK TESTER
CALLER REMARKS:
PETROTITE FAILURE 5K -.516 GPH.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: O NEILL FD
SPILL CONTACT:

TELEPHONE:

SPILLER: STANDARD MICROSYSTEMS COR
ADDRESS:

SPILLER CONTACT:

TELEPHONE: (516) 273-3100

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 08/28/98
DOES CLEAN UP MEET STANDARDS? YES
DEC REMARKS:

CLOSE DATE: 08/27/87
PENALTY RECOMMENDED? NO

// : F&N TESTER. // : F&N TESTER. 8/26/87 SYSTEM PASSED RETEST 8/18/87 AFTER PIPING REPAIRS. NO INSPECTION BY DEC.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE																																																	
SEARCH ID: 222	DIST/DIR: 0.28 SE	MAP ID: 50																																															
NAME: STANDARD MICROSYSTEMS		REV:	08/28/98																																														
ADDRESS: 35 MARCUS BLVD		ID1:	8702085																																														
HAUPPAUGE NY		ID2:																																															
SUFFOLK		STATUS:	CLOSED																																														
CONTACT:		PHONE:																																															
<table style="width: 100%;"><tr><td style="width: 45%;">SPILL DATE: 06/12/87</td><td style="width: 55%;">DATE REPORTED: 06/12/87</td></tr><tr><td>SPILL TIME: 14:00</td><td>TIME REPORTED: 16:00</td></tr><tr><td>MATERIAL SPILLED: UNKNOWN MATERIAL</td><td>AMOUNT SPILLED: 0 G</td></tr><tr><td>MATERIAL CLASS: UNKNOWN</td><td>AMOUNT RECOVERED: 0 G</td></tr><tr><td colspan="2">CAUSE OF SPILL: EQUIPMENT FAILURE</td></tr><tr><td colspan="2">RESOURCE AFFECTED: AIR</td></tr><tr><td colspan="2">WATERBODY AFFECTED:</td></tr><tr><td colspan="2">SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL</td></tr><tr><td colspan="2">REPORTED BY: RESPONSIBLE PARTY</td></tr><tr><td colspan="2">CALLER REMARKS: 1 CUBIC YARD. DISSAPATED INTO THE AIR.</td></tr><tr><td>REGION: 1</td><td>UST TRUST? NO</td></tr><tr><td>SPILL INVESTIGATOR: AIR QUALITY FD</td><td>TELEPHONE:</td></tr><tr><td>SPILL CONTACT:</td><td></td></tr><tr><td>SPILLER: STANDARD MICROSYSTEMS</td><td></td></tr><tr><td>ADDRESS: 35 MARCUS BLVD</td><td></td></tr><tr><td>HAUPPAUGE, NY</td><td></td></tr><tr><td>SPILLER CONTACT:</td><td>TELEPHONE:</td></tr><tr><td>CALLER:</td><td>NOTIFIER:</td></tr><tr><td>AGENCY:</td><td>AGENCY:</td></tr><tr><td>TELEPHONE:</td><td>TELEPHONE:</td></tr><tr><td>LAST DEC UPDATE: 08/28/98</td><td>CLOSE DATE: 07/02/87</td></tr><tr><td>DOES CLEAN UP MEET STANDARDS? YES</td><td>PENALTY RECOMMENDED? NO</td></tr><tr><td colspan="2">DEC REMARKS: / / : REFERRED TO AIR QUALITY 6/17/87.</td></tr></table>				SPILL DATE: 06/12/87	DATE REPORTED: 06/12/87	SPILL TIME: 14:00	TIME REPORTED: 16:00	MATERIAL SPILLED: UNKNOWN MATERIAL	AMOUNT SPILLED: 0 G	MATERIAL CLASS: UNKNOWN	AMOUNT RECOVERED: 0 G	CAUSE OF SPILL: EQUIPMENT FAILURE		RESOURCE AFFECTED: AIR		WATERBODY AFFECTED:		SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL		REPORTED BY: RESPONSIBLE PARTY		CALLER REMARKS: 1 CUBIC YARD. DISSAPATED INTO THE AIR.		REGION: 1	UST TRUST? NO	SPILL INVESTIGATOR: AIR QUALITY FD	TELEPHONE:	SPILL CONTACT:		SPILLER: STANDARD MICROSYSTEMS		ADDRESS: 35 MARCUS BLVD		HAUPPAUGE, NY		SPILLER CONTACT:	TELEPHONE:	CALLER:	NOTIFIER:	AGENCY:	AGENCY:	TELEPHONE:	TELEPHONE:	LAST DEC UPDATE: 08/28/98	CLOSE DATE: 07/02/87	DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO	DEC REMARKS: / / : REFERRED TO AIR QUALITY 6/17/87.	
SPILL DATE: 06/12/87	DATE REPORTED: 06/12/87																																																
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LAST DEC UPDATE: 08/28/98	CLOSE DATE: 07/02/87																																																
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO																																																
DEC REMARKS: / / : REFERRED TO AIR QUALITY 6/17/87.																																																	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 223 **DIST/DIR:** 0.28 SE **MAP ID:** 50

NAME: STANDARD MICROSYSTEMS
ADDRESS: 35 MARCUS BLVD
HAUPPAUGE NY
SUFFOLK

REV: 09/04/98
ID1: 8800247
ID2:
STATUS: CLOSED
PHONE:

CONTACT:

SPILL DATE: 04/18/88
SPILL TIME: 15:00

DATE REPORTED: 04/19/88
TIME REPORTED: 09:00

MATERIAL SPILLED: #2 FUEL OIL
MATERIAL CLASS: PETROLEUM

AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: TANK TESTER
CALLER REMARKS:
10K FAILED PETROTITE AT -.225GPH. F&N TESTER.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: GOERTZ FD
SPILL CONTACT:

TELEPHONE:

SPILLER: STANDARD MICROSYSTEM
ADDRESS: 35 MARCUS BLVD
HAUPPAUGE, NY

SPILLER CONTACT:

TELEPHONE: (516) 273-3100

CALLER: SCOTT
AGENCY: F&N
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 09/04/98
DOES CLEAN UP MEET STANDARDS? YES

CLOSE DATE: 09/13/88
PENALTY RECOMMENDED? NO

DEC REMARKS:
09/13/88: F&N DID RETEST ON SYSTEM ON 8/19 AFTER AIR POCKETS WERE BLED & SYSTEM PASSED. DEC NOT PRESENT DURING RETEST.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE			
SEARCH ID: 224	DIST/DIR: 0.28 SE	MAP ID: 50	
NAME: STANDARD MICROSYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE NY SUFFOLK CONTACT:		REV: 08/03/98 ID1: 8700160 ID2: STATUS: CLOSED PHONE:	
SPILL DATE: 04/04/87 SPILL TIME: 12:00		DATE REPORTED: 04/07/87 TIME REPORTED: 09:00	
MATERIAL SPILLED: SULFURIC ACID MATERIAL CLASS: HAZARDOUS		AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: UNKNOWN RESOURCE AFFECTED: ON LAND WATERBODY AFFECTED: SOURCE OF SPILL: UNKNOWN REPORTED BY: CITIZEN CALLER REMARKS: ANONY. CALLED. EMPLOYEE OF STD MICROSYSTEMS-A SPILL OCCURRED INSIDE OF BUILDING IN WHICH IT WAS NOT REPORTED.			
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: WALEK FD SPILL CONTACT:		TELEPHONE:	
SPILLER: STANDARD MICROSYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE, NY SPILLER CONTACT:		TELEPHONE:	
CALLER: AGENCY: TELEPHONE:		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 08/03/98 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: / / : REFERRED TO DSW.SOIL BORINGS DONE. 5/18/87 SMC WILL NUTRALIZE.		CLOSE DATE: 05/18/87 PENALTY RECOMMENDED? NO	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 225 **DIST/DIR:** 0.28 SE **MAP ID:** 50

NAME: STANDARD MICROSYSTEMS	REV: 07/13/98
ADDRESS: 35 MARCUS BLVD	ID1: 8604398
HAUPPAUGE NY	ID2:
SUFFOLK	STATUS: CLOSED
CONTACT:	PHONE:

SPILL DATE: 08/27/86	DATE REPORTED: 10/08/86
SPILL TIME:	TIME REPORTED: 12:00

CAUSE OF SPILL: EQUIPMENT FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS:
HOSE BURST ON COOLING SYSTEM, SPILLED INTO & OUT OF BUILDING, MOPPED UP INSIDE & ADDED TO SPILL OUTSIDE.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: SCHD FD	TELEPHONE:
SPILL CONTACT:	

SPILLER: STANDARD MICROSYSTEMS	TELEPHONE:
ADDRESS: 35 MARCUS BLVD	
HAUPPAUGE, NY 11788	
SPILLER CONTACT:	

CALLER:	NOTIFIER:
AGENCY:	AGENCY:
TELEPHONE:	TELEPHONE:

LAST DEC UPDATE: 07/13/98	CLOSE DATE: 10/08/86
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO

DEC REMARKS:
/ / : SCHD (JOHN GLADDIS) TO INSPECT 10/16. / / : SCHD (JOHN GLADDIS) TO INSPECT 10/16 DURING ANNUAL INSPECTION. NO NOTIFICATION LETTER SENT. 10/10/95: THIS IS ADDITIONAL INFORMATION ABOUT MATERIAL SPILLED FROM THE TRANSLATION OF THE OLD SPILL FILE: 10-20% ETHYLENE GLY.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 227 **DIST/DIR:** 0.28 SE **MAP ID:** 50

NAME: STANDARD MICROSYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE NY SUFFOLK CONTACT:	REV: 09/04/98 ID1: 8800332 ID2: STATUS: CLOSED PHONE:

SPILL DATE: 04/09/88 SPILL TIME: 03:00	DATE REPORTED: 04/11/88 TIME REPORTED: 09:40

CAUSE OF SPILL: EQUIPMENT FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS:
FIRST NOTED ON 4/9/88. SCDHS ADVISED BY SPILLER.

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: WALEK FD SPILL CONTACT:	TELEPHONE:

SPILLER: STANDARD MICROSYSTEMS ADDRESS: 35 MARCUS BLVD HAUPPAUGE, NY SPILLER CONTACT:	TELEPHONE: (516) 273-3100

CALLER: ED MONTEVIDAS AGENCY: STANDARD MICROSYSTEMS TELEPHONE: (516) 273-3100	NOTIFIER: AGENCY: TELEPHONE:

LAST DEC UPDATE: 09/04/98 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS:	CLOSE DATE: 12/13/88 PENALTY RECOMMENDED? NO

12/13/88: AREA ALL CLEAN. NO FURTHER ACTION NEEDED. 220 GALS OF LIQUID & 2 YDS OF MATERIAL WERE REMOVED.
10/10/95: THIS IS ADDITIONAL INFORMATION ABOUT MATERIAL SPILLED FROM THE TRANSLATION OF THE OLD SPILL FILE:
ETHYLENE GLYCOL.

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 228 **DIST/DIR:** 0.28 SE **MAP ID:** 50

NAME: STD. MIRCO SYS	REV: 12/27/90
ADDRESS: 35 MARCUS BLVD	ID1: 8801976
HAUPPAUGE NY	ID2:
SUFFOLK	STATUS: CLOSED
CONTACT:	PHONE:

SPILL DATE: 06/02/88	DATE REPORTED: 06/02/88
SPILL TIME: 18:45	TIME REPORTED: 20:12

CAUSE OF SPILL:	HUMAN ERROR
RESOURCE AFFECTED:	ON LAND
WATERBODY AFFECTED:	
SOURCE OF SPILL:	COMMERCIAL/INDUSTRIAL
REPORTED BY:	RESPONSIBLE PARTY

CALLER REMARKS:
LEAKING TANK AREA BEING EXCAVATED, FOAM PADS INTO EXCAVATION. 2040 CALLED COMPANY: AREA BEING EXCAVATED PUTTING INTO DRUMS FOR REMOVAL. AREA LEFT OPEN FOR DEC TO CHECK ON 06/03/88

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: ACAMPORA	TELEPHONE:
SPILL CONTACT:	

SPILLER: STD MIRCO SYS	TELEPHONE:
ADDRESS:	
SPILLER CONTACT:	

CALLER: SUSAN COOK	NOTIFIER:
AGENCY: STD MIRCO SYS	AGENCY:
TELEPHONE: (516) 273-3100	TELEPHONE:

LAST DEC UPDATE: 12/27/90	CLOSE DATE: 12/24/90
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO

DEC REMARKS:
10/10/95: THIS IS ADDITIONAL INFORMATION ABOUT MATERIAL SPILLED FROM THE TRANSLATION OF THE OLD SPILL FILE:
PRECO - TOLUENE.

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 230 **DIST/DIR:** 0.37 NE **MAP ID:** 53

NAME: TIFFEN MAN F CORP ADDRESS: 90 OSER AVENUE HAUPPAUGE NY	REV: 09/01/98 ID1: 8705521 ID2: STATUS: CLOSED PHONE:
CONTACT:	

SPILL DATE: 09/30/87	DATE REPORTED: 09/30/87
SPILL TIME: 12:00	TIME REPORTED: 16:00

MATERIAL SPILLED: #2 FUEL OIL	AMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUM	AMOUNT RECOVERED: 0 G

CAUSE OF SPILL:	TANK TEST FAILURE
RESOURCE AFFECTED:	GROUNDWATER
WATERBODY AFFECTED:	
SOURCE OF SPILL:	COMMERCIAL/INDUSTRIAL
REPORTED BY:	TANK TESTER
CALLER REMARKS: LINE LEAK 5K GAL TANK.	

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: GOERTZ FD	TELEPHONE:
SPILL CONTACT:	

SPILLER: TIFFEN MAN F CORP	TELEPHONE:
ADDRESS: 90 OSER AVENUE	
HAUPPAUGE, NY	
SPILLER CONTACT:	

CALLER:	NOTIFIER:
AGENCY:	AGENCY:
TELEPHONE:	TELEPHONE:

LAST DEC UPDATE: 09/01/98	CLOSE DATE: 01/11/88
DOES CLEAN UP MEET STANDARDS? YES	PENALTY RECOMMENDED? NO

DEC REMARKS:
/ / : G&M DEGE TESTER. TO BE RETESTED. / / : G&M DEGE TESTER. TO BE RETESTED. TIFFEN MFG REPLACED RRETURN
LINE,DEGE RETEST & PASSED 10/5/87.NO INITIAL REPORT SENT.DEC NOT PRESENT.

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS 80's SITE

SEARCH ID: 232 **DIST/DIR:** 0.13 SW **MAP ID:** 14

NAME: UNK ADDRESS: 100 MARCUS BLVD HAUPPAUGE NY SUFFOLK CONTACT:	REV: 07/29/92 ID1: 8704775 ID2: STATUS: CLOSED PHONE:

SPILL DATE: 09/09/87 SPILL TIME: 09:15	DATE REPORTED: 09/09/87 TIME REPORTED: 10:01

MATERIAL SPILLED: GASOLINE MATERIAL CLASS: PETROLEUM	AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: ABANDONED DRUMS
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: UNKNOWN
REPORTED BY: POLICE DEPARTMENT

CALLER REMARKS:
2 55GAL DRUMS UNK MATERIAL & 3 5GAL PAILS HYDRAULIC OIL BEHIND BLDG IN INDUSTRIAL PARK. LAB DATA INDICATE GAS/OIL, AQUEOUS AMMONIA, AND UNK CLEANING SOLVENT. ***PROVISIONAL EPA ID #NYP000873414***

REGION: 1 **UST TRUST?** NO

SPILL INVESTIGATOR: ACAMPORA
SPILL CONTACT:

TELEPHONE:

SPILLER: UNK
ADDRESS:

SPILLER CONTACT:

TELEPHONE:

CALLER: OFFICER BOGASKI
AGENCY: SUFF CTY PD
TELEPHONE: (516) 231-5400

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 07/29/92

CLOSE DATE: 01/11/88

DOES CLEAN UP MEET STANDARDS? YES

PENALTY RECOMMENDED? NO

DEC REMARKS:

09/09/87: A: DEC NOTIFIED BY SUFF CTY PD (CASE # UNK) OF 2 ABANDONED DRUMS BEHIND APPLIED DIGITAL DATA. CONTACT: BRUCE KERR ADD 100 MARCUS BLVD 516-231-5400. 09/09/87: B: DEC (ACAMPORA) RESPOND. ALSO PRESENT- BOB MORCERF (SUFF CTY HEALTH CASE # UNK) AND KERR. ONE DRUM IS GREEN W/RED LIQUID, OTHER IS BLACK W/BLACK LIQUID. ALSO 3 5GAL PAILS HYDRAULIC OIL. 09/09/87: C: TOPS ARE CORRODED AND LOOSE, BUT NO SPILLAGE THUS FAR. PHOTOS SEEM TO SHOW LABELS, BUT NO INFO RECORDED BY DEC. EVIDENTLY, NO LEAD ON SPILLER. 09/09/87: D: DEC HIRED MPC TO PICK UP AND PROPERLY DISPOSE. PEDNEAULT TO ANALYZE FOR DISPOSAL. CLEANUP SATISFACTORY; NO FURTHER REMEDIAL ACTION NEEDED. 11/24/87: A: RECEIVE LAB DATA- ONE SAMPLE IS AQUEOUS AMMONIA, POSSIBLY ENGINE CLEANER ; SECOND IS A GASOLINE TRACE OF SOME SORT OF OIL ; THIRD IS CLEANING SOLVENT TYPE UNKNOWN . 11/24/87: B: ALL THREE HAVE TRACE OF LEAD (UP TO .26PPM), FLASH >212F, AND PH 6-9. 11/30/87: DEC OBTAINS PROVISIONAL EPA ID #NYP000873414 FOR THE TWO DRUMS. 12/01/87: MPC DISPOSES OF THE DRUMS AT RADIAC RESEARCH. 01/12/88: DEC CLOSES REGIONAL FILE. 10/10/95: THIS IS ADDITIONAL INFORMATION ABOUT MATERIAL SPILLED FROM THE TRANSLATION OF THE OLD SPILL FILE: CLEANERS/SOLVENTS?.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 250 **DIST/DIR:** 0.28 NE **MAP ID:** 10

NAME: AMERICAN TISSUE CORP
ADDRESS: 110 PLANT AVE
HAUPPAUGE NY 11788
SUFFOLK
CONTACT:

REV: 01/10/99
ID1: S8-0326
ID2:
STATUS:
PHONE:

FACILITY INFORMATION

OWNER NAME: RECKSON ASSOCIATES REALTY CORP
OWNER ADDRESS: 225 BROAD HOLLOW RD SUIT
MELVILLE NY 11747
PHONE: (516)694-6900

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 17. 2

TANK INFORMATION

TANK NUMBER: 1 **TANK STATUS:** UNDERGROUND HEATING OIL TNK <
1100 GALS
INSTALLED: 69 **STATUS DATE:**
TANK CAPACITY: 5000 GALLONS **PRODUCT:** #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 2 **TANK STATUS:** NOT SUBJECT TO ART 12
INSTALLED: 65 **STATUS DATE:**
TANK CAPACITY: 165 GALLONS **PRODUCT:** DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE: PUMPED
PERMIT DATE:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 251 **DIST/DIR:** 0.46 NE **MAP ID:** 42

NAME: AMERICAN TISSUE CORP ADDRESS: 135 ENGINEERS RD HAUPPAUGE NY 11788	REV: 01/10/99 ID1: S8-0192 ID2: STATUS: PHONE:

CONTACT:

FACILITY INFORMATION

OWNER NAME: AMERICAN TISSUE CORP
OWNER ADDRESS: 135 ENGINEERS RD
HAUPPAUGE NY 11788
PHONE: (516)435-9000

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 19.000

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED: 70	STATUS DATE: 01/01/87
TANK CAPACITY: 5000 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 2	TANK STATUS: ABANDONED
INSTALLED: 72	STATUS DATE: 10/08/98
TANK CAPACITY: 5000 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL FIBERGLASS
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 3	TANK STATUS: REMOVED
INSTALLED: 84	STATUS DATE: 09/01/92
TANK CAPACITY: 1320 GALLONS	PRODUCT: DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE OUT
DISPENSER:
FILL TYPE: PUMPED
PERMIT DATE:

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 252	DIST/DIR: 0.29 NE	MAP ID: 11

NAME: ANORAD CORP ADDRESS: 110 OSER AVE HAUPPAUGE NY SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0460 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: ANORAD CORP
OWNER ADDRESS: 110 OSER AVE
HAUPPAUGE NY
PHONE: (516)231-1990

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 61.000

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED:	STATUS DATE: 01/01/87
TANK CAPACITY: 10000 GALLONS	PRODUCT: #2 FUEL OIL
TANK TYPE: DOUBLE WALL FIBERGLASS	
TANK LOCATION: UNDER OUT	
DISPENSER: SUCTION	
FILL TYPE: PUMPED	
PERMIT DATE:	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 253	DIST/DIR: 0.05 NE	MAP ID: 74

NAME: APEX PLASTIC INDUSTRIES ADDRESS: 155 MARCUS BLVD HAUPPAUGE NY 11788 SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0350 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: APEX PLASTIC INDUSTRIES
OWNER ADDRESS: 155 MARCUS BLVD
HAUPPAUGE NY 11788
PHONE: (F)-

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 8.000

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	REMOVED
INSTALLED:		STATUS DATE:	02/21/92
TANK CAPACITY:	5000 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	SINGLE WALL PLAIN STEEL		
TANK LOCATION:	UNDER OUT		
DISPENSER:	SUCTION		
FILL TYPE:	PUMPED		
PERMIT DATE:			

TANK NUMBER:	2	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	92	STATUS DATE:	
TANK CAPACITY:	1000 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	DOUBLE WALL OTHER		
TANK LOCATION:	ABOVE OUT		
DISPENSER:	SUCTION		
FILL TYPE:	PUMPED		
PERMIT DATE:	04/29/96		

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 254 **DIST/DIR:** 0.07 SW **MAP ID:** 13

NAME: ARKAY PACKAGING CORP	REV: 01/10/99
ADDRESS: 22 ARKAY DR	ID1: S8-0104
HAUPPAUGE NY 11788	ID2:
SUFFOLK	STATUS:
CONTACT:	PHONE:

FACILITY INFORMATION

OWNER NAME: ARKAY PACKAGING CORP
OWNER ADDRESS: 22 ARKAY DR
HAUPPAUGE NY 11788
PHONE: (516)273-2000

DISTRICT: 800 **SECTION:** 181.00 **BLOCK:** 1 **LOT:** 2.000

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	REMOVED
INSTALLED:	81	STATUS DATE:	09/12/94
TANK CAPACITY:	10000 GALLONS	PRODUCT:	#2 FUEL OIL

TANK TYPE: SINGLE WALL STEEL BELOW GROUND
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER:	10	TANK STATUS:	REMOVED
INSTALLED:	91	STATUS DATE:	03/13/96
TANK CAPACITY:	345 GALLONS	PRODUCT:	DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE:
PERMIT DATE: 01/08/91

TANK NUMBER:	11	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	91	STATUS DATE:	
TANK CAPACITY:	16830 GALLONS	PRODUCT:	DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE:
PERMIT DATE: 01/08/91

TANK NUMBER:	12	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	91	STATUS DATE:	
TANK CAPACITY:	17075 GALLONS	PRODUCT:	DRUM STORAGE

- More Details Exist For This Site; Max Page Limit Reached -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 255 **DIST/DIR:** 0.19 SE **MAP ID:** 82

NAME: ATLANTIC PAPER & FOIL	REV: 01/10/99
ADDRESS: 325 KENNEDY DR	ID1: S8-0523
HAUPPAUGE NY	ID2:
SUFFOLK	STATUS:
CONTACT:	PHONE:

FACILITY INFORMATION

OWNER NAME: ATLANTIC PAPER & FOIL
OWNER ADDRESS: 325 KENNEDY DR
HAUPPAUGE NY 11788
PHONE: (000)000-0000

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 14. 2

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: UNDERGROUND HEATING OIL TNK <
1100 GALS	
INSTALLED: 68	STATUS DATE:
TANK CAPACITY: 10000 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

PERMITS SITE			
SEARCH ID: 241	DIST/DIR: 0.25 NE	MAP ID: 43	
NAME: PALL-RAI INC. ADDRESS: HAUPPAUGE NY 11788 CONTACT: A COLLINS		REV: ID1: 1-0108154 ID2: 02 STATUS: SSIGIND PHONE:	
SOURCE:		CLASS: SSIGIND	
REC WATER: GROUNDWATER		DES FLOW: 0.066 MG/D	
MAIL CONTACT: COMPANY: PALL-RAI INC ADDRESS: 225 MARCUS BOULEVARD HAUPPAUGE CITY: NY		TELEPHONE: ISSUE DATE: EXPIRE DATE:	
NOV:		ACTION NO:	
TYPE: GROUND TYPE: ISS:		REV DATE: TYPE: UNKNOWN TYPE: ISS:	

PERMITS SITE			
SEARCH ID: 242	DIST/DIR: 0.28 SE	MAP ID: 50	
NAME: STANDARD MICROSYSTEMS CORP. ADDRESS: HAUPPAUGE NY 11788 CONTACT: WALTER KMETA		REV: ID1: 1-0075833 ID2: 02 STATUS: SSIGIND PHONE:	
SOURCE:		CLASS: SSIGIND	
REC WATER: GROUNDWATER		DES FLOW: 0.011 MG/D	
MAIL CONTACT: COMPANY: STANDARD MICROSYSTEMS CORP. ADDRESS: 80 ARKAY DRIVE HAUPPAUGE CITY: NY		TELEPHONE: ISSUE DATE: EXPIRE DATE:	
NOV:		ACTION NO:	
TYPE: GROUND TYPE: ISS:		REV DATE: TYPE: UNKNOWN TYPE: ISS:	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TRIS SITE			
SEARCH ID: 136	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: ARKAY PACKAGING CORP. ADDRESS: 22 ARKAY DR. HAUPPAUGE NY 11788 SUFFOLK CONTACT: WALTER J. SHIELS	REV: ID1: 11788RKYP22ARK ID2: NYD001635622 STATUS: 0 PHONE: 5162732000		
DETAILS NOT AVAILABLE			

TRIS SITE			
SEARCH ID: 137	DIST/DIR: 0.25 NE	MAP ID: 43	
NAME: PALL RAI MFG. CO. ADDRESS: 225 MARCUS BLVD. HAUPPAUGE NY 11788 SUFFOLK CONTACT: LEONARD KRAKAUER	REV: ID1: NYD003907318 ID2: 11788RRSRC225MA STATUS: OPEN PHONE: 5162730911		
DETAILS NOT AVAILABLE			

TRIS SITE			
SEARCH ID: 138	DIST/DIR: 0.25 NE	MAP ID: 43	
NAME: PALL RAI MFG. CO. ADDRESS: 225 MARCUS BLVD. HAUPPAUGE NY 11788 SUFFOLK CONTACT: LEONARD KRAKAUER	REV: ID1: 11788RRSRC225MA ID2: NYD003907318 STATUS: 0 PHONE: 5162730911		
DETAILS NOT AVAILABLE			

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 281 **DIST/DIR:** 0.48 NW **MAP ID:** 69

NAME: HEARTLAND STP ADDRESS: OSER AVE HAUPPAUGE NY SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0556 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: SUFFOLK COUNTY DPW
OWNER ADDRESS: 335 YAPHANK AVE
YAPHANK NY 11980
PHONE: (516)852-4160

DISTRICT: 800 **SECTION:** 182.00 **BLOCK:** 01 **LOT:** 22. 6

TANK INFORMATION

TANK NUMBER: 1 INDOOR AND OUTDOOR TANK INSTALLED: 83 TANK CAPACITY: 1000 GALLONS	TANK STATUS: NON COMPLYING UNDERGROUND STATUS DATE: PRODUCT: METHANOL

TANK TYPE: OTHER SINGLE WALL COATED STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: GRAVITY
PERMIT DATE:

TANK NUMBER: 2 INDOOR AND OUTDOOR TANK INSTALLED: 83 TANK CAPACITY: 3000 GALLONS	TANK STATUS: NON COMPLYING UNDERGROUND STATUS DATE: PRODUCT: CAUSTIC

TANK TYPE: OTHER SINGLE WALL COATED STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: GRAVITY
PERMIT DATE:

TANK NUMBER: 3 INDOOR AND OUTDOOR TANK INSTALLED: 83 TANK CAPACITY: 660 GALLONS	TANK STATUS: NON COMPLYING UNDERGROUND STATUS DATE: PRODUCT: OTHER

TANK TYPE: OTHER SINGLE WALL COATED STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: GRAVITY
PERMIT DATE:

TANK NUMBER: 4	TANK STATUS: NOT SUBJECT TO ART 12

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 288 **DIST/DIR:** 0.37 NW **MAP ID:** 31

NAME: JACO ELECTRONICS INC	REV: 01/10/99
ADDRESS: 145 OSER AVE	ID1: S8-0344
HAUPPAUGE NY 11788	ID2:
SUFFOLK	STATUS:
CONTACT:	PHONE:

FACILITY INFORMATION

OWNER NAME: BEMAR REALTY
OWNER ADDRESS: 145 OSER AVE
HAUPPAUGE NY 11788
PHONE: (516)273-5500

DISTRICT: 800 **SECTION:** 182.00 **BLOCK:** 1 **LOT:** 21.000

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED: 78	STATUS DATE: 06/21/90
TANK CAPACITY: 10000 GALLONS	PRODUCT: GASOLINE

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: GRAVITY
PERMIT DATE:

TANK NUMBER: 2	TANK STATUS: UNDERGROUND HEATING OIL TNK <
1100 GALS	
INSTALLED: 78	STATUS DATE:
TANK CAPACITY: 10000 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 299 **DIST/DIR:** 0.25 NE **MAP ID:** 43

NAME: PALL RAI MFG CO ADDRESS: 225 MARCUS BLVD HAUPPAUGE NY 11788 SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0156 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: PALL RAI MFG CO
OWNER ADDRESS: 225 MARCUS BLVD
HAUPPAUGE NY 11788
PHONE: (000)000-0000

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 4.000

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED: 81	STATUS DATE: 10/13/94
TANK CAPACITY: 2000 GALLONS	PRODUCT: ORGANIC SOLVENT

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: ABOVE IN
DISPENSER: SUCTION
FILL TYPE: OTHER
PERMIT DATE:

TANK NUMBER: 10	TANK STATUS: PERMIT TO OPERATE
INSTALLED: 75	STATUS DATE:
TANK CAPACITY: 220 GALLONS	PRODUCT: CAUSTIC

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: GRAVITY
PERMIT DATE: 04/26/89

TANK NUMBER: 11	TANK STATUS: PERMIT TO OPERATE
INSTALLED: 75	STATUS DATE:
TANK CAPACITY: 220 GALLONS	PRODUCT: CAUSTIC

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: GRAVITY
PERMIT DATE: 04/26/89

TANK NUMBER: 12	TANK STATUS: PERMIT TO OPERATE
INSTALLED: 75	STATUS DATE:
TANK CAPACITY: 220 GALLONS	PRODUCT: CAUSTIC

- More Details Exist For This Site; Max Page Limit Reached -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 300 **DIST/DIR:** 0.25 NE **MAP ID:** 43

NAME: PALL RAI, INC. ADDRESS: 225 MARCUS BLVD. HAUPPAUGE NY 11788 CONTACT: LEONARD KRAKAUER	REV: 07/01/00 ID1: CBS1-000161 ID2: STATUS: INACTIVE PHONE: (516) 273-0911

CHEMICAL BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: MANUFACTURING
TOTAL ACTIVE TANKS ON SITE: 0
TOTAL FACILITY CAPACITY: 0 GALLONS
PBS NUMBER: **ICS NUMBER:** 1-166748 **MOSF NUMBER:**
ADDITIONAL ADDRESS INFO:

TYPE OF OWNER: CORPORATE/COMMERCIAL
OWNER SUB TYPE:
OWNER ADDRESS: 225 MARCUS BLVD.
HAUPPAUGE NY 11788
PHONE: (516) 273-0911

EMERGENCY CONTACT: RON SPINELLI
PHONE: (516) 273-0911

MAILING NAME: PALL RAI, INC.
ADDRESS: 225 MARCUS BLVD.
HAUPPAUGE NY 11788
ATTENTION: GINGER GALLIENNE
PHONE: (516) 273-0911

CERTIFICATE DATE: 8/19/91 **EXP. DATE:** 7/11/93
RENEWAL DATE: 4/1/93

TANK INFORMATION

TANK NUMBER: 1	STATUS: CLOSED - REMOVED
INSTALLED: 12/80	CLOSED: 02/93
TANK CAPACITY: 2000 GALLONS	
SUBSTANCE STORED: TOLUENE	
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST	
HAZARDOUS SUBSTANCE %: 100	

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: UNDERGROUND, VAULTED, WITH ACCESS
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: OTHER
SECONDARY CONTAINMENT: VAULT WITH ACCESS

PIPE TYPE: STEEL/IRON
PIPE LOCATION: ABOVEGROUND/UNDERGROUND COMBINATION
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: OTHER
SECONDARY CONTAINMENT: OTHER

LEAK DETECTION: NONE

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 306 **DIST/DIR:** 0.48 NW **MAP ID:** 69

NAME: SEWER DISTRICT #18H-HEARTLAND INDUS.
ADDRESS: OSER AVENUE
HAUPPAUGE NY 11788

REV: 07/01/00
ID1: CBS1-000336
ID2:
STATUS: ACTIVE FACILITY
PHONE: (516) 853-2799

CONTACT: PETER DI MAGGIO

CHEMICAL BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: UTILITY
TOTAL ACTIVE TANKS ON SITE: 3
TOTAL FACILITY CAPACITY: 2500 GALLONS
PBS NUMBER: **ICS NUMBER:** 1-168126 **MOSF NUMBER:**
ADDITIONAL ADDRESS INFO: SUFFOLK COUNTY

TYPE OF OWNER: LOCAL GOVERNMENT
OWNER SUB TYPE:
OWNER ADDRESS: 335 YAPHANK AVENUE
YAPHANK NY 11980
PHONE: (516) 852-4104

EMERGENCY CONTACT: JOHN R. DE MAIO
PHONE: (516) 852-4109

MAILING NAME: SUFFOLK COUNTY DEPT. DPW. DIV. OF SAN.
ADDRESS: 335 YAPHANK AVENUE
YAPHANK NY 11980
ATTENTION: JOHN R. DE MAIO
PHONE: (516) 852-4104

CERTIFICATE DATE: 9/10/99 **EXP. DATE:** 10/6/01
RENEWAL DATE: 7/6/99

TANK INFORMATION

TANK NUMBER: 00001 **STATUS:** IN SERVICE
INSTALLED: 07/93 **CLOSED:**
TANK CAPACITY: 1000 GALLONS
SUBSTANCE STORED: METHANOL
SUBSTANCE DESCRIPTION: MORE THAN ONE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 100

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
SECONDARY CONTAINMENT: DOUBLE-WALLED

PIPE TYPE: GALVANIZED STEEL
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DOUBLE-WALLED

LEAK DETECTION: INTERSTITIAL LINING

- More Details Exist For This Site; Max Page Limit Reached -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 311 **DIST/DIR:** 0.15 SE **MAP ID:** 109

NAME: STANDARD MICRO SYSTEMS
ADDRESS: 350 KENNEDY DR
HAUPPAUGE NY 11788

REV: 01/10/99
ID1: S8-0323
ID2:
STATUS:
PHONE:

CONTACT:

FACILITY INFORMATION

OWNER NAME: STANDARD MICRO SYSTEMS
OWNER ADDRESS: 35 MARCUS BLVD
HAUPPAUGE NY 11788
PHONE: (000)000-0000

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 2 **LOT:** 41.000

TANK INFORMATION

TANK NUMBER: 1 **TANK STATUS:** REMOVED
INSTALLED: **STATUS DATE:** 07/02/87
TANK CAPACITY: 7500 GALLONS **PRODUCT:** #4 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 312 **DIST/DIR:** 0.11 SW **MAP ID:** 91

NAME:	STANDARD MICROSYSTEMS	REV:	01/10/99
ADDRESS:	110 MACUS BLVD	ID1:	S8-0179
	HAUPPAUGE NY 11787	ID2:	
	SUFFOLK	STATUS:	
CONTACT:		PHONE:	

FACILITY INFORMATION

OWNER NAME: STANDARD MICROSYSTEMS
OWNER ADDRESS: 35 MARCUS BLVD
HAUPPAUGE NY 11788
PHONE: (000)000-0000

DISTRICT: 800 **SECTION:** 181.00 **BLOCK:** 1 **LOT:** 4.000

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	REMOVED
INSTALLED:	69	STATUS DATE:	06/21/95
TANK CAPACITY:	5000 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	SINGLE WALL PLAIN STEEL		
TANK LOCATION:	UNDER OUT		
DISPENSER:	SUCTION		
FILL TYPE:	PUMPED		
PERMIT DATE:			

TANK NUMBER:	2	TANK STATUS:	NOT SUBJECT TO ART 12
INSTALLED:		STATUS DATE:	
TANK CAPACITY:	1000 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	DOUBLE WALL OTHER		
TANK LOCATION:	ABOVE IN		
DISPENSER:			
FILL TYPE:			
PERMIT DATE:			

TANK NUMBER:	3	TANK STATUS:	APPROVED/NOT INSTALLED
INSTALLED:		STATUS DATE:	
TANK CAPACITY:	1200 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	DOUBLE WALL OTHER		
TANK LOCATION:	ABOVE IN		
DISPENSER:	SUCTION		
FILL TYPE:	GRAVITY		
PERMIT DATE:			

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 313 **DIST/DIR:** 0.28 SE **MAP ID:** 50

NAME: STANDARD MICROSYSTEMS	REV: 01/10/99
ADDRESS: 35 MARCUS BLVD	ID1: S8-0198
HAUPPAUGE NY 11787	ID2:
SUFFOLK	STATUS:
CONTACT:	PHONE:

FACILITY INFORMATION

OWNER NAME: STANDARD MOCROSYSTEMS
OWNER ADDRESS: 35 MARCUS BLVD
HAUPPAUGE NY 11788
PHONE: (516)273-3100

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 2 **LOT:** 42.000

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	84	STATUS DATE:	
TANK CAPACITY:	10000 GALLONS	PRODUCT:	#2 FUEL OIL

TANK TYPE: SINGLE WALL FIBERGLASS
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER:	10	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	91	STATUS DATE:	
TANK CAPACITY:	200 GALLONS	PRODUCT:	INDUSTRIAL WASTE

TANK TYPE: OTHER
TANK LOCATION: ABOVE IN
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE: 04/30/91

TANK NUMBER:	11	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	91	STATUS DATE:	
TANK CAPACITY:	200 GALLONS	PRODUCT:	INDUSTRIAL WASTE

TANK TYPE: OTHER
TANK LOCATION: ABOVE IN
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE: 04/30/91

TANK NUMBER:	12	TANK STATUS:	PERMIT TO OPERATE
INSTALLED:	91	STATUS DATE:	
TANK CAPACITY:	125 GALLONS	PRODUCT:	INDUSTRIAL WASTE

- More Details Exist For This Site; Max Page Limit Reached -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 275 **DIST/DIR:** 0.48 NE **MAP ID:** 62

NAME: EATON CORP ADDRESS: 45 OSER AVE HAUPPAUGE NY 11788 SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0273 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: WSI PROPERTIES INC
OWNER ADDRESS: 45 OSER AVE
HAUPPAUGE NY 11788
PHONE: (516)231-9800

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 67. 2

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED: 85	STATUS DATE: 08/01/91
TANK CAPACITY: 310 GALLONS	PRODUCT: INDUSTRIAL WASTE

TANK TYPE: OTHER
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: PUMPED
PERMIT DATE: 03/26/86

TANK NUMBER: 2	TANK STATUS: REMOVED
INSTALLED: 85	STATUS DATE: 08/01/91
TANK CAPACITY: 284 GALLONS	PRODUCT: INDUSTRIAL WASTE

TANK TYPE: OTHER
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: PUMPED
PERMIT DATE: 03/26/86

TANK NUMBER: 3	TANK STATUS: REMOVED
INSTALLED: 75	STATUS DATE: 05/02/97
TANK CAPACITY: 20000 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 276 **DIST/DIR:** 0.50 SW **MAP ID:** 49

NAME: EMR CIRCUITS INC ADDRESS: 89 CABOT CT HAUPPAUGE NY 11788 SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0205 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: HPM PROPERTY MGMT
OWNER ADDRESS: 101 AUTUMN DR
HAUPPAUGE NY 11788
PHONE: (000)000-0000

DISTRICT: 800 **SECTION:** 181.0 **BLOCK:** 3 **LOT:** 2.010

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED: 84	STATUS DATE: 01/01/89
TANK CAPACITY: 4000 GALLONS	PRODUCT: INDUSTRIAL WASTE

TANK TYPE: SINGLE WALL FIBERGLASS
TANK LOCATION: ABOVE IN
DISPENSER: SUCTION
FILL TYPE: OTHER
PERMIT DATE:

TANK NUMBER: 10	TANK STATUS: REMOVED
INSTALLED: 84	STATUS DATE: 01/01/89
TANK CAPACITY: 27 GALLONS	PRODUCT: OTHER

TANK TYPE: SINGLE WALL FIBERGLASS
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 11	TANK STATUS: REMOVED
INSTALLED: 84	STATUS DATE: 01/01/89
TANK CAPACITY: 1375 GALLONS	PRODUCT: DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 2	TANK STATUS: NOT INSTALLED
INSTALLED:	STATUS DATE:
TANK CAPACITY: 3000 GALLONS	PRODUCT: INDUSTRIAL WASTE

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 315 **DIST/DIR:** 0.13 SW **MAP ID:** 14

NAME: SUN RIVER DATA SYSTEM	REV: 01/10/99
ADDRESS: 100 MARCUS BLVD	ID1: S8-0163
HAUPPAUGE NY 11788	ID2:
SUFFOLK	STATUS:
CONTACT:	PHONE:

FACILITY INFORMATION

OWNER NAME: APPLIED DIGITAL DATA SYSTEMS
OWNER ADDRESS: 100 MARCUS BLVD
HAUPPAUGE NY 11788
PHONE: (000)000-0000

DISTRICT: 800 **SECTION:** 181.00 **BLOCK:** 1 **LOT:** 5.000

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	REMOVED
INSTALLED:	77	STATUS DATE:	10/06/88
TANK CAPACITY:	4000 GALLONS	PRODUCT:	GASOLINE

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: GRAVITY
PERMIT DATE:

TANK NUMBER:	2	TANK STATUS:	REMOVED
INSTALLED:	75	STATUS DATE:	10/06/88
TANK CAPACITY:	3000 GALLONS	PRODUCT:	WASTE OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: GRAVITY
PERMIT DATE:

TANK NUMBER:	3	TANK STATUS:	REMOVED
INSTALLED:	79	STATUS DATE:	03/04/96
TANK CAPACITY:	1100 GALLONS	PRODUCT:	DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE:
PERMIT DATE:

TANK NUMBER:	4	TANK STATUS:	REMOVED
INSTALLED:	79	STATUS DATE:	08/25/92
TANK CAPACITY:	10000 GALLONS	PRODUCT:	#2 FUEL OIL

- More Details Exist For This Site; Max Page Limit Reached -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 317 **DIST/DIR:** 0.37 NE **MAP ID:** 53

NAME: TIFFEN MFG CORP ADDRESS: 90 OSER AVE HAUPPAUGE NY 11788 SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0236 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: RECKSON ASSOCIATES REALTY CORP
OWNER ADDRESS: 225 BROAD HOLLOW RD SUIT
MELVILLE NY 11747
PHONE: (516)694-6900

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 60.000

TANK INFORMATION

TANK NUMBER: 1 1100 GALS INSTALLED: 77 TANK CAPACITY: 5000 GALLONS	TANK STATUS: UNDERGROUND HEATING OIL TNK < STATUS DATE: PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 2 INDOOR TANK INSTALLED: 77 TANK CAPACITY: 550 GALLONS	TANK STATUS: NON COMPLYING ABOVEGROUND STATUS DATE: PRODUCT: DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 3 INSTALLED: 89 TANK CAPACITY: 1375 GALLONS	TANK STATUS: PERMIT TO OPERATE STATUS DATE: PRODUCT: DRUM STORAGE

TANK TYPE:
TANK LOCATION: ABOVE IN
DISPENSER:
FILL TYPE:
PERMIT DATE: 07/31/89

TANK NUMBER: 4 INSTALLED: 78	TANK STATUS: NOT SUBJECT TO ART 12 STATUS DATE:

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 324 **DIST/DIR:** 0.31 NW **MAP ID:** 39

NAME:	UP PROPERTIES MULTI-OCCUPIED	REV:	01/10/99
ADDRESS:	129 OSER AVE	ID1:	S8-0631
	HAUPPAUGE NY	ID2:	
	SUFFOLK	STATUS:	
CONTACT:		PHONE:	

FACILITY INFORMATION

OWNER NAME: UP PROPERTIES
OWNER ADDRESS: P O BOX 151
MILL NECK NY 11765
PHONE: (516)671-3388

DISTRICT: 800 **SECTION:** 182.00 **BLOCK:** 1 **LOT:** 91.000

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	NOT SUBJECT TO ART 12
INSTALLED:		STATUS DATE:	
TANK CAPACITY:	1000 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	SINGLE WALL PLAIN STEEL		
TANK LOCATION:	UNDER OUT		
DISPENSER:	SUCTION		
FILL TYPE:	GRAVITY		
PERMIT DATE:			

TANK NUMBER:	2	TANK STATUS:	UNDERGROUND HEATING OIL TNK <
1100 GALS		STATUS DATE:	
INSTALLED:		PRODUCT:	#2 FUEL OIL
TANK CAPACITY:	1500 GALLONS		
TANK TYPE:	SINGLE WALL PLAIN STEEL		
TANK LOCATION:	UNDER OUT		
DISPENSER:			
FILL TYPE:			
PERMIT DATE:			

TANK NUMBER:	3	TANK STATUS:	NOT SUBJECT TO ART 12
INSTALLED:		STATUS DATE:	
TANK CAPACITY:	275 GALLONS	PRODUCT:	#2 FUEL OIL
TANK TYPE:	SINGLE WALL PLAIN STEEL		
TANK LOCATION:	ABOVE IN		
DISPENSER:	SUCTION		
FILL TYPE:	GRAVITY		
PERMIT DATE:			

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 326 **DIST/DIR:** 0.27 NE **MAP ID:** 66

NAME: VANDERBILT ASSOC ADDRESS: 90 PLANT AVE HAUPPAUGE NY SUFFOLK CONTACT:	REV: 01/10/99 ID1: S8-0593 ID2: STATUS: PHONE:

FACILITY INFORMATION

OWNER NAME: RECKSON ASSOCIATES REALTY CORP
OWNER ADDRESS: 225 BROAD HOLLOW RD SUIT
MELVILLE NY 11747
PHONE: (516)694-6900

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 17. 5

TANK INFORMATION

TANK NUMBER: 1	TANK STATUS: REMOVED
INSTALLED: 70	STATUS DATE: 09/21/84
TANK CAPACITY: 10000 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

TANK NUMBER: 2	TANK STATUS: NOT SUBJECT TO ART 12
INSTALLED: 84	STATUS DATE:
TANK CAPACITY: 275 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: ABOVE OUT
DISPENSER:
FILL TYPE:
PERMIT DATE:

TANK NUMBER: 3	TANK STATUS: NOT SUBJECT TO ART 12
INSTALLED: 90	STATUS DATE:
TANK CAPACITY: 275 GALLONS	PRODUCT: #2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: ABOVE OUT
DISPENSER:
FILL TYPE:
PERMIT DATE:

TANK NUMBER: 4	TANK STATUS: NOT SUBJECT TO ART 12
INSTALLED: 90	STATUS DATE:
TANK CAPACITY: 275 GALLONS	PRODUCT: #2 FUEL OIL

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch *Site Detail Report*

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

CERCLIS SITE			
SEARCH ID: 5	DIST/DIR: 0.66 SE	MAP ID: 5	
NAME: GLARO ADDRESS: 735 OLD WILLETS PATH HAUPPAUGE NY 11787		REV: ID1: NYD002048627 ID2: 0201964 STATUS: NOT PROPOSED PHONE:	
CONTACT:			
DESCRIPTION:			
ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	State, Fund Financed		06-01-1988
PRELIMINARY ASSESSMENT High	EPA Fund-Financed	12-21-1988	12-29-1988

CERCLIS SITE			
SEARCH ID: 6	DIST/DIR: 0.88 NW	MAP ID: 6	
NAME: MICROWAVE POWER ADDRESS: 330 OSER AVE. HAUPPAUGE NY 11788		REV: ID1: NYD044470680 ID2: 0202957 STATUS: NFRAP-N PHONE:	
CONTACT:			
DESCRIPTION:			
ACTION/QUALITY	AGENCY/RPS	START/RAA	END
DISCOVERY	EPA Fund-Financed		02-28-1989
PRELIMINARY ASSESSMENT NFRAP (No Futher Remedial Action Planned)	EPA Fund-Financed	02-28-1989	03-31-1989

Environmental FirstSearch *Site Detail Report*

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

CERCLIS SITE

SEARCH ID: 7 **DIST/DIR:** 0.72 NE **MAP ID:** 7

NAME: UNEXCELLED CASTINGS
ADDRESS: 663 OLD WILLETS PATH
HAUPPAUGE NY 11787

REV:
ID1: NYD057729238
ID2: 0201573
STATUS: NFRAP-N
PHONE:

CONTACT:

DESCRIPTION:

LEAD CONCENTRATIONS HIGHER THAN GROUND-WATER STANDARDS WERE DETECTED IN A SAMPLE TAKEN FROM A STORM DRAIN SHARED WITH OTHER LOCAL BUSINESSES. A SAMPLE OF UNEXCELLED CASTINGS WASTESTREAM DID NOT CONTAIN CONCENTRATIONS OF LEAD ABOVE DETECTIOLEAD CONCE NTRATIONS HIGHER THAN GROUND-WATER STANDARDS WERE DETECTED IN A SAMPLE TAKEN FROM A STORM DRAIN SHARED WITH OTHER LOCAL BUSINESSES. A SAMPLE OF UNEXCELLED CASTINGS WASTESTREAM DID NOT CONTAIN CONCENTRATIONS OF LEAD ABOVE DETECTIO

ACTION/QUALITY DISCOVERY	AGENCY/RPS EPA Fund-Financed	START/RAA	END 04-01-1983
HRS PACKAGE	Other		04-01-1983
PRELIMINARY ASSESSMENT Low	EPA Fund-Financed		04-01-1983
PRELIMINARY ASSESSMENT NFRAP (No Futher Remedial Action Planned)	State, Fund Financed		03-26-1986
SITE INSPECTION NFRAP (No Futher Remedial Action Planned)	EPA Fund-Financed	04-01-1983	04-01-1983
SITE INSPECTION NFRAP (No Futher Remedial Action Planned)	EPA Fund-Financed	04-01-1985	04-30-1985

Environmental FirstSearch *Site Detail Report*

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA GENERATOR SITE			
SEARCH ID: 10	DIST/DIR: 0.28 NE	MAP ID: 10	
NAME: AMERICAN TISSUE CORP ADDRESS: 110 PLANT AVE HAUPPAUGE NY 11788 CONTACT: AMERICAN TISSUE CORP		REV: ID1: NYD005924154 ID2: STATUS: SGN PHONE: 5164359000	
ADDRESS: 50 CABOT CT HAUPPAUGE NY 11788		NOTIFIED:	
ACTIVITIES: SG: GENERATES 100-1000 KG/MONTH OF HAZARDOUS WASTE		PART A:	
CM+E LIST:	VIOL DATE:	AGENCY:	UPDATED: 11-10-98
RAATS:	ACTION DATE:	DOCKET:	UPDATED:
VIOL:			
NUM:			
ENF:			
DATE:	ASSESS:	SETTLE:	

RCRA GENERATOR SITE			
SEARCH ID: 11	DIST/DIR: 0.29 NE	MAP ID: 11	
NAME: ANORAD CORP ADDRESS: 110 OSER AVE HAUPPAUGE NY 11788 Suffolk CONTACT: ANWAR CHITAYAT		REV: ID1: NYD068011543 ID2: STATUS: SGN PHONE: 2125551212	
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED:	
ACTIVITIES: SG: GENERATES 100-1000 KG/MONTH OF HAZARDOUS WASTE		PART A:	
CM+E LIST:	VIOL DATE: 03-16-90	AGENCY: S	UPDATED: 11-10-98
RAATS:	ACTION DATE:	DOCKET:	UPDATED:
VIOL: GER			
NUM: I			
ENF:			
DATE:	ASSESS:	SETTLE:	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA GENERATOR SITE			
SEARCH ID: 12	DIST/DIR: 0.29 NE	MAP ID: 11	
NAME: ANORAD CORP ADDRESS: 110 OSER AVE HAUPPAUGE NY 11788 Suffolk		REV: ID1: NYD002631455 ID2: STATUS: LGN PHONE: 2125551212	
CONTACT: OWNERNAME			
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES: LG: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: ACTION DATE:	AGENCY: DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: NUM: ENF: DATE:	ASSESS:	SETTLE:	

RCRA GENERATOR SITE			
SEARCH ID: 13	DIST/DIR: 0.34 NE	MAP ID: 12	
NAME: ANORAD TECHNOLOGY CENTER ADDRESS: 100 OSER AVE HAUPPAUGE NY 11788 Suffolk		REV: ID1: NYD065945875 ID2: STATUS: SGN PHONE: 5167579831	
CONTACT: ANWAR CHITAYAT			
ADDRESS: 20 BEACH HILL DR FORT SALONGA NY 11768		NOTIFIED: PART A:	
ACTIVITIES: SG: GENERATES 100-1000 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: ACTION DATE:	AGENCY: DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: NUM: ENF: DATE:	ASSESS:	SETTLE:	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA GENERATOR SITE			
SEARCH ID: 14	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: AR-KAY PACKAGING CORP ADDRESS: 22 ARKWAY DR HAUPPAUGE NY 11787		REV: ID1: NYD001635622 ID2: STATUS: LGN PHONE: 5165890404	
CONTACT: STERNIG SANDER			
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES: LG: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: 11-23-93 ACTION DATE:	AGENCY: E, S DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: GER, GLB NUM: 6 ENF: 310, 210 DATE: 07-08-88	ASSESS:	SETTLE:	

RCRA GENERATOR SITE			
SEARCH ID: 31	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: HAUPPAUGE COGENERATION FACILITY ADDRESS: 22 ARKAY DR HAUPPAUGE NY 11788		REV: ID1: NYD986983351 ID2: STATUS: VGN PHONE: 2014479000	
CONTACT: RIDGEWOOD NEW YORK POWER PARTNER LP			
ADDRESS: 947 LINWOOD AVE RIDGEWOOD NJ 07450		NOTIFIED: PART A:	
ACTIVITIES: VG: GENERATES LESS THAN 100 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: ACTION DATE:	AGENCY: DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: NUM: ENF: DATE:	ASSESS:	SETTLE:	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA GENERATOR SITE			
SEARCH ID: 34	DIST/DIR: 0.37 NW	MAP ID: 31	
NAME: JACO ELECTRONICS ADDRESS: 145 OSER AVE HAUPPAUGE NY 11787		REV: ID1: NYD986906865 ID2: STATUS: LGN PHONE: 5162735500	
CONTACT: FERRY CHARLES			
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES: LG: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: ACTION DATE:	AGENCY: DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: NUM: ENF: DATE:			
ASSESS:		SETTLE:	

RCRA GENERATOR SITE			
SEARCH ID: 48	DIST/DIR: 0.25 NE	MAP ID: 43	
NAME: PALL RAI, INC. ADDRESS: 225 MARCUS BLVD HAUPPAUGE NY 11787		REV: ID1: NYD003907318 ID2: STATUS: LGN PHONE: 5162730911	
CONTACT: DAGOSTINO VINCENT F			
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES: LG: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: 04-20-95 ACTION DATE:	AGENCY: S DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: GER, GLB NUM: 4 ENF: 310 DATE: 07-01-88			
ASSESS:		SETTLE:	

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA GENERATOR SITE			
SEARCH ID: 58	DIST/DIR: 0.50 SW	MAP ID: 49	
NAME: SIR SPEEDY PRINTING #8565 ADDRESS: 89 H CABOT CT HAUPPAUGE NY 11788 Suffolk CONTACT: ROTHSTEIN JOEL		REV: ID1: NYD986873362 ID2: STATUS: LGN PHONE: 5162348200	
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES: LG: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE			
CM+E LIST: RAATS:	VIOL DATE: ACTION DATE:	AGENCY: DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: NUM: ENF: DATE: ASSESS: SETTLE:			

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA NLR SITE			
SEARCH ID: 73	DIST/DIR: 0.28 NE	MAP ID: 10	
NAME: AMERICAN TISSUE CORP ADDRESS: 110 PLANT AVE HAUPPAUGE NY 11788		REV: ID1: NYD005924154 ID2: STATUS: NLR PHONE: 5164352121	
CONTACT: ROOZRHK SHAHRAN			
DETAILS NOT AVAILABLE			

RCRA NLR SITE			
SEARCH ID: 74	DIST/DIR: 0.29 NE	MAP ID: 11	
NAME: ANORAD CORP ADDRESS: 110 OSER AVE HAUPPAUGE NY 11788		REV: ID1: NYD068011543 ID2: STATUS: NLR PHONE: 5162311990	
CONTACT: MCMANUS DAVID			
DETAILS NOT AVAILABLE			

RCRA NLR SITE			
SEARCH ID: 75	DIST/DIR: 0.29 NE	MAP ID: 11	
NAME: ANORAD CORP ADDRESS: 110 OSER AVE HAUPPAUGE NY 11788		REV: ID1: NYD002631455 ID2: STATUS: NLR PHONE: 5162311990	
CONTACT: MCMANUS DAVID W			
DETAILS NOT AVAILABLE			

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA NLR SITE			
SEARCH ID: 76	DIST/DIR: 0.34 NE	MAP ID: 12	
NAME: ANORAD TECHNOLOGY CENTER ADDRESS: 100 OSER AVE HAUPPAUGE NY 11788		REV: ID1: NYD065945875 ID2: STATUS: NLR PHONE: 5162311990	
CONTACT: MCMANUS DAVID			
DETAILS NOT AVAILABLE			

RCRA NLR SITE			
SEARCH ID: 86	DIST/DIR: 0.47 SW	MAP ID: 22	
NAME: DATABIT INC ADDRESS: 89 ARKAY DR HAUPPAUGE NY 11788		REV: ID1: NYD981495070 ID2: STATUS: NLR PHONE: 5164354000	
CONTACT: SCHORN J P			
DETAILS NOT AVAILABLE			

*Environmental FirstSearch
Site Detail Report*

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA NLR SITE			
SEARCH ID: 90	DIST/DIR: 0.11 SE	MAP ID: 4	
NAME: ELECTRO MOTIVE RESEARCH CORP. ADDRESS: 99 MARCUS BLVD HAUPPAUGUE NY 11787		REV: ID1: NYD052777273 ID2: STATUS: NLR PHONE: 5162738880	
CONTACT: PHILLIPS ROGER			
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES:			
CM+E LIST: RAATS:	VIOL DATE: ACTION DATE:	AGENCY: DOCKET:	UPDATED: 11-10-98 UPDATED:
VIOL: NUM: ENF: DATE: ASSESS: SETTLE:			

RCRA NLR SITE			
SEARCH ID: 115	DIST/DIR: 0.50 SW	MAP ID: 49	
NAME: SIR SPEEDY PRINTING #8563 ADDRESS: 89 H CABOT CT HAUPPAUGE NY 11788		REV: ID1: NYD986873362 ID2: STATUS: NLR PHONE: 5162348200	
CONTACT: ROTHSTEIN JOEL			
DETAILS NOT AVAILABLE			

***Environmental FirstSearch
Site Detail Report***

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

RCRA NLR SITE			
SEARCH ID: 117	DIST/DIR: 0.27 NE	MAP ID: 66	
NAME: SYMBOL TECHNOLOGIES INC ADDRESS: 90 PLANT AVE HAUPPAUGE NY 11788		REV: ID1: NYD065973067 ID2: STATUS: NLR PHONE: 5162311821	
CONTACT: FEE PETER W			
ADDRESS: NOT REQUIRED NOT REQUIRED WY 99999		NOTIFIED: PART A:	
ACTIVITIES:			
CM+E LIST:	VIOL DATE:	AGENCY:	UPDATED: 11-10-98
RAATS:	ACTION DATE:	DOCKET:	UPDATED:
VIOL:			
NUM:			
ENF:			
DATE:	ASSESS:	SETTLE:	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

TRIS SITE			
SEARCH ID: 133	DIST/DIR: 0.13 SW	MAP ID: 14	
NAME: APPLIED DIGITAL DATA CORP. ADDRESS: 100 MARCUS BLVD. HAUPPAUGE NY 11788		REV: ID1: NYD049205602 ID2: 11788PPLDD100MA STATUS: OPEN PHONE: 5162315400	
CONTACT: MERCY CORDERO			
DETAILS NOT AVAILABLE			

TRIS SITE			
SEARCH ID: 134	DIST/DIR: 0.13 SW	MAP ID: 14	
NAME: APPLIED DIGITAL DATA CORP. ADDRESS: 100 MARCUS BLVD. HAUPPAUGE NY 11788 SUFFOLK		REV: ID1: 11788PPLDD100MA ID2: NYD049205602 STATUS: 0 PHONE: 5162315400	
CONTACT: MERCY CORDERO			
DETAILS NOT AVAILABLE			

TRIS SITE			
SEARCH ID: 135	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: ARKAY PACKAGING CORP. ADDRESS: 22 ARKAY DR. HAUPPAUGE NY 11788 SUFFOLK		REV: ID1: NYD001635622 ID2: 11788RKYP22ARK STATUS: OPEN PHONE: 2732000	
CONTACT: WALTER SHIELDS			
DETAILS NOT AVAILABLE			

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 159	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: ARKAY PACKAGING ADDRESS: 22 ARKAY DRIVE HAUPPAUGE NY		REV: 05/09/96 ID1: 9405517 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 7/22/94 SPILL TIME: 18:00		DATE REPORTED: 7/22/94 TIME REPORTED: 19:00	
MATERIAL SPILLED: #2 FUEL OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: RESOURCE AFFECTED: WATERBODY AFFECTED: SOURCE OF SPILL: REPORTED BY: CALLER REMARKS:		TANK TEST FAILURE GROUNDWATER COMMERCIAL/INDUSTRIAL 05 SYSTEM FAILURE TAKEN OUT OF SERVICE, TO EXCAVATE AND RETEST, TYREE TESTER	
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: T/T/F SPILL CONTACT:		TELEPHONE:	
SPILLER: ARKAY PACKAGING ADDRESS:			
SPILLER CONTACT:		TELEPHONE:	
CALLER: JIM LEONARD AGENCY: TYREE TELEPHONE: (516) 249-3150		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 05/09/96 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: 05/24/95: TANK REMOVED 9/13/94, GIBBONS ATTENDED, 5 YDS CONTAMINATED SOIL REMOVED AT WHICH POINT CONTAMINATION WAS NO LONGER DETECTED IN THE EXCAVATION. SOIL DISPOSED OF. NO FURTHER ACTION.		CLOSE DATE: 05/24/95 PENALTY RECOMMENDED? NO	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

STATE SPILLS SITE			
SEARCH ID: 160	DIST/DIR: 0.07 SW	MAP ID: 13	
NAME: ARKAY PACKAGING CORP ADDRESS: 22 ARKAY DRIVE HAUPPAUGE NY		REV: 05/25/95 ID1: 9405200 ID2: STATUS: CLOSED PHONE:	
CONTACT:			
SPILL DATE: 7/15/94 SPILL TIME: 18:30		DATE REPORTED: 7/15/94 TIME REPORTED: 18:52	
MATERIAL SPILLED: #2 FUEL OIL MATERIAL CLASS: 1		AMOUNT SPILLED: 0 G AMOUNT RECOVERED: 0 G	
CAUSE OF SPILL: TANK TEST FAILURE RESOURCE AFFECTED: GROUNDWATER WATERBODY AFFECTED: SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL REPORTED BY: 05 CALLER REMARKS: 10K FAILED - 1652, TYREE TESTER, TOOK SYSTEM OUT OF SERVICE, WILL NOTIFY SCHD			
REGION: 1		UST TRUST? NO	
SPILL INVESTIGATOR: T/T/F SPILL CONTACT:		TELEPHONE:	
SPILLER: ARKAY PACKAGING CORP ADDRESS:			
SPILLER CONTACT:		TELEPHONE:	
CALLER: JIM LEONARD AGENCY: TYREE TELEPHONE: (516) 249-3150		NOTIFIER: AGENCY: TELEPHONE:	
LAST DEC UPDATE: 05/25/95 DOES CLEAN UP MEET STANDARDS? YES DEC REMARKS: 05/23/95: TANK REMOVED 9/24/94 LAMANNO ATTENDED, TOTAL OF 2YDS OF CONT SOIL REMOVED AT WHICH POINT CONTAMINATION WAS NO LONGER DETECTED, SOIL DISPOSED OF NO FURTHER ACTION.		CLOSE DATE: 05/23/95 PENALTY RECOMMENDED? NO	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 145 MARCUS BLVD
HAUPPAUGE NY 11788

JOB: TED00-01

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 275 **DIST/DIR:** 0.48 NE **MAP ID:** 62

NAME: EATON CORP
ADDRESS: 45 OSER AVE
HAUPPAUGE NY 11788
SUFFOLK
CONTACT:

REV: 01/10/99
ID1: S8-0273
ID2:
STATUS:
PHONE:

FACILITY INFORMATION

OWNER NAME: WSI PROPERTIES INC
OWNER ADDRESS: 45 OSER AVE
HAUPPAUGE NY 11788
PHONE: (516)231-9800

DISTRICT: 800 **SECTION:** 185.00 **BLOCK:** 1 **LOT:** 67. 2

TANK INFORMATION

TANK NUMBER:	1	TANK STATUS:	REMOVED
INSTALLED:	85	STATUS DATE:	08/01/91
TANK CAPACITY:	310 GALLONS	PRODUCT:	INDUSTRIAL WASTE

TANK TYPE: OTHER
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: PUMPED
PERMIT DATE: 03/26/86

TANK NUMBER:	2	TANK STATUS:	REMOVED
INSTALLED:	85	STATUS DATE:	08/01/91
TANK CAPACITY:	284 GALLONS	PRODUCT:	INDUSTRIAL WASTE

TANK TYPE: OTHER
TANK LOCATION: ABOVE IN
DISPENSER: GRAVITY
FILL TYPE: PUMPED
PERMIT DATE: 03/26/86

TANK NUMBER:	3	TANK STATUS:	REMOVED
INSTALLED:	75	STATUS DATE:	05/02/97
TANK CAPACITY:	20000 GALLONS	PRODUCT:	#2 FUEL OIL

TANK TYPE: SINGLE WALL PLAIN STEEL
TANK LOCATION: UNDER OUT
DISPENSER: SUCTION
FILL TYPE: PUMPED
PERMIT DATE:

Human Health Risk Assessment

FORMER COMPUTER CIRCUITS SUPERFUND SITE

145 Marcus Boulevard
Hauppauge
Suffolk County, New York



P.W. GROSSER CONSULTING, Inc.
630 Johnson Avenue, Suite 7
Bohemia, NY 11716
Phone: (631) 589-6353
Fax: (631) 589-8705

December 29, 2006

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FORMER COMPUTER CIRCUITS SITE
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1.0 INTRODUCTION

The objective of the human health risk assessment (HHRA) is to assess potential human health risks associated with the contaminants identified during the RI investigation. This objective has been pursued through the evaluation of potential carcinogenic and non-carcinogenic hazards to human populations which are associated with the chemical contaminants present, and/or originating, on the property.

P.W. Grosser Consulting Inc.(PWGC), was contracted by 145 Marcus Blvd. Corp. to prepare and implement the Remedial Investigation/Feasibility Study(RI/FS) Work plan for the Former Computer Circuits Site, located at 145 Marcus Boulevard, Hauppauge , New York (**Figure 1**).

The RI/FS Work plan, entitled *Revised Final Work plan For Remedial Investigation/Feasibility Study, Former Computer Circuits Superfund Site, Town of Smithtown, Suffolk County, New York* which is supported by the *Site-Specific Quality Assurance Project Plan (QAPP)*, *Field Sampling Plan (FSP)*, *Site Management Plan (SMP)*, and *Health and Safety Plan (HASP)* was submitted to the US Environmental Protection Agency (EPA) in August 2001, and approved by EPA on October 5, 2001.

The site was placed on the National Priorities List (NPL) effective May 10, 1999 and assigned EPA Index No. CERCLA-02-2000-2036. The RI/FS was conducted by PWGC in accordance with the terms and conditions as set forth in the Administrative Order on Consent (AOC) executed on September 29, 2000, and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA).

1.1 Overview of the Risk Assessment Process

It is important to note that a risk assessment does not determine if any health effects have occurred or will occur as a result of exposures to chemicals at the Site. Instead, a risk assessment determines the probability (chance) that health effects might result from exposure to chemicals at the property and how those exposures may occur.

The HHRA consists of the following five components:

- An evaluation of the Site analytical data to determine constituents of potential concern;
- An exposure assessment to identify potentially exposed populations and potential exposure pathways and to estimate exposure concentrations and intakes for each relevant exposure pathway;
- A toxicity assessment to evaluate both qualitative and quantitative toxicological information to assist in determining the most appropriate toxicity values;
- A risk characterization to estimate the potential for adverse effects due to both carcinogenic and noncarcinogenic risks; and
- An analysis of the uncertainties associated with the risk estimates.

The HHRA has been prepared in accordance with existing CERCLA guidance documents including the following:

- *USEPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual-Part A, Interim Final (EPA/504/1-89/002);*
- *USEPA. 1991. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual Supplemental Guidance "Standard Default Exposure Factors" Interim Final (OSWER 9285.6-03);*
- *USEPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments), (OSWER 9285.7-01D-1)*
- *USEPA, 2002. Supplement Guidance for Developing Soil Screening Levels for Superfund Sites*
- *USEPA, 2002. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils*
- *USEPA, 2004. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessments), (OSWER 92857-02EP)*

The complete list of all documents used to complete this HHRA is included in the Section 8.0 References.

1.2 Scope of Risk Assessment

The objectives of the RI included the collection of sufficient environmental data to establish point-of-exposure concentrations to assess human health and ecological risks associated with current and potential future uses of the site. The results of the risk assessment will be used to select a remedy to eliminate, reduce, or control unacceptable risks to human health or the environment, and to develop a Record of Decision (ROD) that is consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40CFR Part 300. Specific data that was collected and defined during the RI included the following:

- The potential source areas of soil and/or groundwater contamination;
- The direction and rate of groundwater movement from the source areas;
- The horizontal and vertical extent and characteristics of soil contamination that may serve as a source for groundwater contamination;
- The horizontal and vertical extent and degree of groundwater contamination;
- The optimum locations of permanent monitoring wells to monitor contamination and remedial efforts, and;
- The geologic and hydrogeologic properties and dimensions of geologic units that are being affected by soil and groundwater contamination.

2.0 IDENTIFICATION OF EXPOSURE PATHWAYS AND POTENTIAL RECEPTOR POPULATIONS

2.1 Historical Background

The conceptual model developed for the site (**Figure 2**) describes the initial and secondary release mechanisms and sources, the migration pathway of the contaminants and the potential exposure routes to human receptors. The origin of the contamination at the Former Computer Circuits site was the result of the discharge of processing waters used in the manufacture of printed circuit boards to an on-site leaching pool system located along the south side of the building. As the ability of the pools to receive and recharge the wastewater diminished, overflow events occurred in which the discharge ran along the surface to a storm drain catch basin located in the adjacent roadway (Marcus Blvd.). Additionally, trichloroethylene-affected rinse water associated with a silk-screening process, and photographic chemicals, generated by a dark room, were sporadically discharged via a wash sink, to a single leaching structure located on the north side of the building.

The site is located within an industrial park, and is surrounded by other light industrial and commercial properties. Future land use of this area is likely to remain under industrial use for the foreseeable future.

2.2 Identification of Potential Human Exposure

Under the present land use exposure scenario, construction/excavation and landscape workers could be exposed to subsurface and/or surface contaminants in the soil on a transient basis. Commercial workers occupying the building could be exposed to subsurface volatiles in soil via partitioning to the indoor air.

Contaminants transported through the soil column may reach groundwater, dissolve and potentially travel off-site in the direction of groundwater flow. The industrial area surrounding the site as well as a residential area located approximately 2,500 feet northeast of the site are serviced by two municipal supply wells (SCWA, Well#s S1436 & S44774) located on Falcon Drive, approximately 3,900 feet from the site. Future exposures (ingestion, dermal) could occur to commercial workers in the industrial park or to off-site residents if contaminants were to reach the supply wells or a hypothetical private well within the residential area. It is not known if contaminants leaving the Former Computer Circuits property would reach the supply wells, or what the actual concentration would be following transport, dilution at the wellhead and blending prior to distribution. According to the New York State Department of Health (NYSDOH) both wells have operational treatment systems to remove VOCs, and are routinely monitored to assure compliance within standards. There are no known private wells within the residential area. This relegates potential exposure from impacted tap water to a future scenario.

Exposure to on-site commercial workers through the volatilization of contaminants in groundwater to indoor air is not considered, since the depth to groundwater at the site is 100 feet below the surface. However, exposure to off-site residents is evaluated qualitatively, since the depth to groundwater in the residential area is approximately 60 feet below surface, and the possibility exists that at least some of the homes will have basements.

The exposure pathways described above are presented in **Table 1** for both the current and future exposure scenarios.

2.2.1 Groundwater

Under current exposure conditions, residents located downgradient of the site could be exposed to volatile organics in groundwater if they were to reach the area in sufficient concentration to transfer to the vapor phase and migrate through the home's foundation to the indoor air.

If no remedial action is taken, residents located in the sub-division north and northeast of the site could also be exposed to contaminants in groundwater in the future via tap water if the contaminants in groundwater were to reach the municipal supply wells and enter the distribution system above limits, or to reach a hypothetical private potable water well. Residents using affected tap water could be exposed to contaminants through ingestion (drinking), dermal contact (bathing) and inhalation (showering) of vapors. Commercial workers in the area supplied by the municipal supply well could also be exposed in the future to contaminants in groundwater via tap water. Exposure through tap water is an extremely conservative assumption and highly unlikely for the following reasons:

- current well treatment operations at the wellhead to remove contaminants originating from a New York State Department of Environmental Conservation (NYSDEC) Class II inactive hazardous waste (State Superfund) site located at 100 Oser Avenue;
- periodic monitoring of the municipal water supply quality by the water purveyor as required by the Suffolk County Department of Health Services (SCDHS);
- attenuation during transport from the Former Computer Circuits site to the Falcon Drive well field approximately 3,900 feet away;
- source water modeling performed by the SCDHS indicates that the Former Computer Circuits Site is located outside of the supply well capture zone;
- dilution at the wellhead, conservatively estimated to be at a ratio of 100 to 1;
- blending within the distribution system;
- assumes impacts to the well field would continue unabated at on-site concentrations for 6 years for a resident child, 25 years for an on-site commercial worker and 30 years for a resident adult;
- there are no documented private wells downgradient of the Former Computer Circuits site.

Since exposure via tap water is not possible under current conditions, it is evaluated under the future scenario only. Although prohibited by Suffolk County Law, future exposure conditions could also include the installation of a private well for drinking water purposes hydraulically downgradient of the Former Computer Circuits site. This scenario while possible (if the law is violated) is unlikely

since the area is serviced by public water. The nearest residence hydraulically downgradient of the Former Computer Circuits site is located approximately 2,000 feet northeast of the site.

2.2.2 Subsurface Soil

Contaminants entering the ground through the leach pool system would affect subsurface soils and potentially reach the groundwater approximately 100 feet below the ground surface. Volatile contaminants in the subsurface soils could partition to the vapor phase and migrate to subsurface structures such as utility trenches or possibly enter the building through cracks in the concrete slab foundation. Construction/excavation workers engaged in excavation activities, and commercial workers inside of the building could then be exposed to VOCs through the inhalation pathway.

Ingestion or direct contact with subsurface contaminated soil for construction/excavation workers is unlikely since the typical depth of utility work is limited to the upper 5 feet and impacted soil was typically encountered at a starting depth of 15-25 feet. The impacted soil areas were also limited to the immediate vicinity of the former leaching structures, which are located beyond the utility access points to the building. To be conservative, these pathways have been evaluated.

Future remediation workers engaged in activities to mitigate soil impacts would be trained to limit exposure through the use of personnel protective equipment and the site Health and Safety Plan as required under the Hazardous Waste Operations and Emergency Response (HAZWOPER) program administered by the Occupational Safety and Health Administration (OSHA). The remediation workers are only expected to be on the site for approximately six months installing a soil vapor extraction system. Therefore, the exposure would be conservatively the same as the construction/excavation workers and will not be quantitatively evaluated.

Residents are not exposed to subsurface soils unless they are also commercial workers or construction workers employed at the site.

2.2.3 Surface Soil

The majority of the site in the vicinity of the former leach pool system is paved, however it is probable that the discharge may have reached the exposed soil near the southeast corner of the building. Contaminants present in the surface soil zone (0-2 ft) could become airborne during future construction or routine grounds maintenance, such as mowing or raking. Workers engaged in these activities could then be potentially exposed to contaminants through dermal, ingestion or inhalation (fugitive dust) pathways.

Trespassers (ages 7 to 17) may also be exposed to surface soils. This scenario is unlikely based on the existence of the fence, and it is an industrial area not frequented by the general public. Because the majority of the site is paved or covered with vegetation, the exposure time and frequency would be less than the landscaper; therefore, this exposure will not be quantitatively evaluated.

Residents and commercial workers are not exposed to surface soils unless they are also construction/excavation or landscape workers engaged in activities at the site.

3.0 CHEMICALS OF POTENTIAL CONCERN (COPC)

The analytical data collected during the remedial investigation were consolidated into a statistical format suitable for conducting the HRRA in accordance with EPA Region 2 guidance, and evaluated to identify the COPCs that will be carried through the quantitative risk assessment. The COPCs are constituents that are potentially site-related and whose data are of sufficient quality for use in the quantitative risk assessment.

3.1 Data Screening Procedures

The first screening criteria for COPC development is a comparison of the maximum detected concentration to Region 9 Preliminary Remediation Goals (PRGs) for soil, groundwater, and indoor air. PRGs are risk-based concentrations, derived from standardized equations combining exposure information assumptions with EPA toxicity data. They are considered to be protective for humans (including sensitive groups), over a lifetime. The PRGs used were based on combined (dermal, inhalation, ingestion) industrial exposures for surface/subsurface soils, combined residential exposures (ingestion, dermal, inhalation) for groundwater, and ambient air for indoor air (inhalation) including either a hazard index of 1/10 or a cancer risk of 1×10^{-6} (one in one million). The "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils" was used for screening groundwater to evaluate if a vapor intrusion investigation is warranted. The Guidance states that it is not to be used for the evaluation of subsurface soil concentration (USEPA, 2002a).

The second step in the development of COPCs is to screen out those constituents which are rarely or infrequently detected, and which may be artifacts in the data due to sampling, analytical or other problems. Infrequent detection, which is defined as less than or equal to 5 percent detection in the total number of samples analyzed for each medium, resulted in the exclusion of the chemical as a COPC. Additionally, chemicals considered to be essential human nutrients including calcium, sodium, magnesium, and potassium, were also excluded as COPCs, unless present at high concentrations (i.e. above naturally occurring levels). As per Region 2 requirements, Class A (known human) carcinogens were included regardless of other screening criteria except where inappropriate (i.e., does not volatilize, etc.)

3.2 Analytical Methods

Samples were analyzed in accordance with the NYSDEC Analytical Services Protocols (ASP). The analytical methods and quality assurance/quality control (QA/QC) are discussed in more detail in the Remedial Investigation Report (PWGC, 2003)

3.2.1 Groundwater

Residents north and northeast of the site and commercial workers on-site could be exposed to contaminants in groundwater through the use of tap water in the future. Residents could also be exposed to contaminants through inhalation of contaminant vapors emanating from groundwater (i.e., vapor intrusion). The groundwater data set used to evaluate this exposure route consisted of 14 near-site vertical profile samples and two rounds of sampling a 12 well monitoring network (on-site, near-site) for a total of 38 groundwater samples.

Due to turbidity problems, vertical profile samples were analyzed for VOCs only. Monitoring well samples were analyzed for volatile organic compounds (VOCs) including Freon, semivolatile organic compounds (SVOCs) and metals including cyanide during the first round and VOCs plus Freon and metals plus cyanide during the second round.

3.2.2 Subsurface Soil

Construction activities can also result in exposure to subsurface soils. The data set used to evaluate subsurface soil consisted of 23 samples selected from the on-site laboratory screening results of 226 shallow (<25') boring samples, and 7 samples selected from the on-site laboratory screening results of 58 deep (15' to 205') boring samples. Subsurface soil samples were analyzed for Target Compound List (TCL) VOCs, SVOCs, Target Analyte List (TAL) metals, cyanide and Freon. Volatile contaminants in the subsurface soils could partition to the vapor phase and migrate to subsurface structures such as utility trenches or possibly enter the on-site building through cracks and pores in the concrete slab foundation. This pathway was evaluated through the collection of indoor air samples, which were analyzed for VOCs.

3.2.3 Surface Soil

Contaminants present in the surface soil zone (0-2 ft) could become airborne during future construction/excavation or routine landscaping activities. The data set used to evaluate shallow soil consisted of five samples collected at a depth of 0-6 inches. Surface soil samples were analyzed for TCL VOCs, SVOCs, TAL metals, cyanide and Freon.

3.2.4 Quality Assurance /Quality Control

The quality of the analytical data used in this risk assessment was assured through the application of a QA/QC program as detailed in the Quality Assurance Project Plan (PWGC, 2001). The QA/QC objective for the field investigation, as stated in the plan, was to develop and implement procedures that provide data of known and documented quality. QA/QC characteristics for data include precision, accuracy, representativeness, completeness, and comparability. The purpose of the QA/QC activities developed for this site was to verify the integrity of the work performed at the site to assure that the data collected is of the appropriate type and quality needed for the intended use.

The QA/QC program included the preparation and analysis of field and laboratory QA/QC samples such as field blanks, trip blanks and matrix spike duplicates. Third party data validation was performed on the laboratory results of soil and groundwater samples submitted for contaminant analysis (VOCs, SVOCs and metals). Sample results which were qualified with an "R" (rejected) were not used in the risk assessment.

3.3 Identification of Copcs

The results of the screening procedures for COPCs are presented in **Table 2.1** through **Table 2.6** for each of the identified exposure scenarios.

3.3.1 Groundwater

Thirty-eight groundwater samples were collected and analyzed for VOCs, SVOCs, and TAL metals. Tetrachloroethene (PCE), Trichloroethene (TCE), Chromium VI, Iron, Manganese and Nickel were

all selected as COPCs for on-site groundwater, as shown in **Tables 2.1, 2.2, and 2.3**. Chromium VI was the only detected Class A Carcinogen. In **Table 2.2 and 2.3** Manganese, Nickel, Iron and Chromium VI were eliminated as COPCs in the groundwater to indoor air pathway, for both vapor intrusion and showering, since the volatilization of metals under these conditions does not occur.

3.3.2 Subsurface Soils

Thirty subsurface soil samples were collected and analyzed for VOCs, SVOCs, and TAL metals. Trichloroethene, Benzo(a)pyrene, and Arsenic were selected as COPCs for subsurface soils, as shown in **Table 2.4**. The potential for subsurface soil contamination to result in vapor intrusion to the building was evaluated through the collection of indoor air samples from inside of the Computer Circuits facility. Acetone, 1,1,1-Trichloroethane, 1,2-Dichloroethane, Chloromethane, Methylene Chloride, Trichloroethene, and Vinyl Chloride were selected as COPCs for indoor air, as shown in **Table 2.5**.

3.3.3 Surface Soils

Five surface soil samples were collected and analyzed for VOCs, SVOCs, and TAL metals. Benzo(a)pyrene, N-Nitros-di-n-propylamine, and arsenic were selected as COPCs for surface soils, as shown in **Table 2.6**.

4.0 EXPOSURE ASSESSMENT

The objective of the exposure assessment is to quantify the type and magnitude of exposures by potential receptors to the COPCs that are present at, or migrating from, the Former Computer Circuits Site.

In Section 4.1, the statistical analyses that are used to determine a conservative Exposure Point Concentration (EPC) are presented. In Section 4.3, the equations that are used to determine the Chronic Daily Intake (CDI) of COPCs are presented along with the exposure factor assumptions.

It is important to realize that exposure to a chemical does not necessarily result in any adverse effects. Humans are routinely exposed to chemicals, that in much higher doses, would cause serious adverse effects. Humans are well equipped to handle small amounts of natural or man-made chemicals. The concept of dose-response is fundamental to predicting whether an adverse effect is even possible following exposure to a toxic chemical. Most people have an intuitive understanding that two aspirin tablets will not likely result in toxic effects. On the other hand, most people understand that two hundred aspirin tablets swallowed at one time will likely result in serious problems, and that there is an amount of aspirin that any individual could consume every day for an entire lifetime that would have virtually no effect. This is precisely how US EPA recommends that assessment of potential health hazards from chemical exposure is quantified: a “safe” level of exposure or acceptable daily intake is determined with wide margins of safety.

4.1 Exposure Point Concentrations (Epc)

A statistical analysis of the data sets was performed to determine a representative concentration for each of the identified COPCs in each medium. The concentration term used in the exposure equations, the EPC, is an estimate of the arithmetic average concentration for a contaminant based on the sampling results. For constituents with at least one detection in a sample, the sample quantitation limit of the remaining samples reported as nondetected (i.e., U qualifier) in the data set were divided by two and the resulting proxy concentrations were used in the statistical calculations. Because of the uncertainty associated with estimating the true average concentration at a site, the 95 percent upper confidence limit (UCL) of the arithmetic mean, was used as the EPC. The 95 percent UCL provides reasonable confidence that the true site average concentration will not be underestimated. Data sets with less than 10 data points often provide poor estimates of the average mean concentration. In this case, the maximum detected concentration was taken as the EPC, instead of the 95 percent UCL of the arithmetic mean. This is established as a conservative (high) estimate of the exposure concentration.

In most cases, the EPA considers it reasonable to assume Superfund soil sampling data to be log normally distributed. Groundwater data was assumed to also be log normally distributed. The 95 percent UCL equation for log normal data distributions is as follows:

$$95\% \text{ UCL(EPC)} = e^{(x + ((0.5)(s^2)) + sH/\sqrt{(n-1)})}$$

UCL = Upper Confidence Limit (mg/kg)
x = mean of the transformed data (mg/kg)

s	=	standard deviation of the transformed data
H	=	H-statistic (Gilbert, 1986)
n	=	number of samples

COPC data sets were first transformed by taking the natural log of each sample result before calculating the arithmetic mean. Taking the natural log of a number less than or equal to one results in a value that is either negative or equal to zero. Since the units used for the soil data (mg/kg) in **Table 2** result in values less than or equal to one, a factor of 1000 was applied before transforming the data. The EPC was then divided by 1000 to obtain the final value. Where the data sets for the COPCs failed the test for normality and for log normality, the USEPA Software for Calculating Upper Confidence Limits ProUCL Version 3.00.02 was used to evaluate nonparametric statistics (USEPA, 2004a).

The EPC calculated for each of the COPCs represents a conservative estimate of the true average concentration. In the event that the calculated EPC is greater than the maximum detected concentration, the maximum concentration is used instead of the calculated EPC value. Medium-specific concentrations and EPC values are summarized in **Table 3.1** through **Table 3.6**.

4.2 Exposure Pathways

The identification of exposure pathways describes the route that the COPC takes to travel from the source to the individual. An exposure pathway will link the sources, locations and types of sources with human receptors and activity patterns to determine the magnitude, frequency and duration of the exposure.

A number of environmental medium-specific exposure pathways were identified that may contribute to the cumulative dose of constituents that a potentially exposed population could receive on-site or off-site. Each exposure pathway consists of the following elements:

- a source and mechanism of release of constituents to the environment;
- an environmental transport medium or mechanism of transfer of constituents among environmental media;
- a point of potential contact of humans to the contaminated medium; and
- an identified route of exposure (ingestion, inhalation, etc.).

An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur. Exposure assessments for current exposure and future exposure scenarios are discussed in the following sections.

4.2.1 Current Exposure Scenarios

The potentially exposed populations under the current exposure scenario include on-site commercial workers, on-site excavation/construction workers, on-site landscape workers. Estimates of the exposures are based on measurements of existing on-site and near-site conditions. In addition, off-site exposure to residents from vapor intrusion from groundwater was qualitatively evaluated.

Six environmental medium exposure-related pathways are evaluated in the excavation/construction worker exposure assessment:

- Incidental ingestion of subsurface soil;
- Direct contact with subsurface soil;
- Inhalation of fugitive dust due to subsurface soil disturbances
- Incidental ingestion of surface soil;
- Direct dermal contact with surface soil; and
- Inhalation of fugitive dust due to surface soil disturbances.

Table 4.1 and **Table 4.2** present the exposure pathway parameters that are used to estimate intake of site-related constituents through all identified pathways for on-site excavation/construction workers involved in activities at the Former Computer Circuits Site. The average adult excavation/construction worker is assumed to weigh 70 kg (USEPA, 1991). Based on an on-site excavation/construction worker's average work week, the adult receptor is exposed to COPCs originating from subsurface and surface soils for periods of an average 8-hour work-day (USEPA, 1991) and is estimated to work at one specific site for only 250 days per year within one work year for exposure frequency.

Three environmental media exposure-related pathways are evaluated in the landscape worker exposure assessment:

- incidental ingestion of surface soil;
- direct dermal contact with surface soil; and
- inhalation of fugitive dust from surface soil disturbances.

Table 4.3 presents the exposure pathway parameters that are used to estimate intake of site-related constituents through all identified pathways for on-site workers involved in landscaping activities at the Former Computer Circuits Site. The average adult landscape worker is assumed to weigh 70 kg (USEPA, 1991). Current exposure periods for landscape workers are assumed to be approximately 32 days a year for an approximate duration of 25 years (USEPA, 2004b). Thirty-two days a year is the upper bound estimate of grass cutting in Region 2. EPA suggests a landscaper performs activities on-site one day a week for the length of 9 months a year, excluding winter months. It is also assumed that the same landscaper is present for each activity performed on-site and that the site owner is loyal to the same landscaper for an average 25 years.

Typical on-site commercial workers exposure to environmental media is evaluated in the current exposure scenario. For the on-site commercial worker, the evaluated exposure pathway is:

- Inhalation of subsurface soil vapors migrating through the foundation to indoor air.

Table 4.4 presents the exposure pathway parameters that are used to estimate intake of site-related constituents through all identified pathways for an on-site commercial worker for subsurface soil vapors.

The average adult commercial worker is assumed to weigh 70 kg (USEPA, 1991). Based on an on-site commercial worker's average workweek, the adult receptor is exposed to COPCs originating from subsurface soil for an average 250 days a year (USEPA, 1991) for approximately 25 years of occupational tenure (USEPA, 1991), as a RME.

One environmental medium exposure-related pathway is evaluated for off-site resident exposure assessment:

- Adult exposure to indoor vapors through the transfer of VOCs from groundwater to indoor air; and
- Child (1 to 6 years) exposure to indoor vapors through the transfer of VOCs from groundwater to indoor air.

4.2.2 Future Exposure Scenarios

If no remedial work is performed to improve the current conditions at the Former Computer Circuits Site, future exposure to identified exposed populations could occur. The potentially exposed populations under the future exposure conditions have been determined to be on-site commercial workers, on-site excavation/construction and landscape workers, and off-site residents. An off-site resident is assumed to reside downgradient with respect to groundwater flow from the Former Computer Circuits Site. Estimates of the exposures are based on measurements of currently existing on-site conditions.

Typical off-site adult and child (ages 1 to 6 years) residents exposure to environmental media is evaluated in the hypothetical future exposure scenario. For the off-site adult and child residents, evaluated exposure pathways are:

- Adult ingestion of groundwater through the use of tap water;
- Child (1 to 6 years) ingestion of groundwater through the use of tap water;
- Adult absorption through direct dermal contact with groundwater through bathing/showering;
- Child (1 to 6 years) absorption through direct dermal contact with groundwater through bathing;
- Adult inhalation of groundwater vapors emanating from a showerhead; and
- Child (1 to 6 years) inhalation of groundwater vapors emanating from a showerhead.

The exposure pathway parameters used to estimate intake of site-related constituents through all identified pathways for adult and child (1 to 6 years) residents are listed in **Table 4.5** and **Tables 4.6**. The average off-site adult resident is assumed to weigh 70 kilograms (kg) (USEPA, 1991). The average 6 year old child is assumed to weigh 15 kg (USEPA, 1991b). This conservative exposure scenario assumes that adult residents would live downgradient of groundwater flow from the site for up to 30 years (USEPA, 2004) and that residents would use on-site groundwater for all domestic water needs. Child residents are assumed to live downgradient of groundwater flow from the site for up to 6 years (USEPA, 1991) and children would also use on-site groundwater for all domestic

water needs. The exposures through the use of tap water assume that a private well for potable use is installed hydraulically downgradient of the Former Computer Circuits site or that the municipal wells will be impacted by site-related contaminants. This scenario assumes the following conditions apply:

- current well treatment operations at the wellhead to remove contaminants originating from a New York State Department of Environmental Conservation (NYSDEC) Class II inactive hazardous waste (State Superfund) site located at 100 Oser Avenue will cease prior to arrival of site-related contaminants;
- periodic monitoring of the municipal water supply quality by the water purveyor as required by the Suffolk County Department of Health Services (SCDHS) will cease prior to arrival of site-related contaminants;
- attenuation does not occur during transport from the Former Computer Circuits site to the Falcon Drive well field approximately 3,900 feet away;
- source water modeling performed by the SCDHS which indicates that the Former Computer Circuits Site is located outside of the supply well capture zone is incorrect;
- dilution at the wellhead, conservatively estimated to be at a ratio of 100 to 1, does not occur;
- blending within the distribution system does not take place;
- impacts to the well field continue unabated at on-site concentrations for 6 (child) to 30 years (adult);
- a private well is installed for potable use hydraulically downgradient of the site at a location which will intercept the hypothetical plume;
- attenuation of contaminants does not occur during the 2,000 foot transport to the nearest “downgradient” residence.

Typical on-site adult commercial workers exposure to environmental media is evaluated in the hypothetical future exposure scenario. For the on-site adult commercial worker, evaluated exposure pathways are:

- Ingestion of groundwater through the use of tap water originating from an off-site municipal supply well; and
- Inhalation of subsurface soil vapors migrating through the foundation to indoor air.

The exposure pathway parameters used to estimate intake of site-related constituents through all identified pathways for adult commercial worker is presented in **Table 4.7** and **Table 4.8**. The average adult on-site commercial worker is assumed to weigh 70kg (USEPA, 1991). The conservative exposure scenario assumes that the commercial worker is on-site an average 250 days a year (USEPA, 1991), for an average 25 years of occupational tenure and consumes 1 liter of water per day (USEPA, 1991).

Conservative assumptions involving potential future impact to commercial workers that may use the Falcon Drive well field for the future use scenario include:

- current well treatment operations at the wellhead to remove contaminants originating from

- a New York State Department of Environmental Conservation (NYSDEC) Class II inactive hazardous waste (State Superfund) site located at 100 Oser Avenue will cease prior to the arrival of impacts originating from the Former Computer Circuits Site;
- periodic monitoring of the municipal water supply quality by the water purveyor as required by the Suffolk County Department of Health Services (SCDHS) is suspended;
 - attenuation does not occur during transport from the Former Computer Circuits site to the Falcon Drive well field approximately 3,900 feet away;
 - source water modeling performed by the SCDHS which indicates that the Former Computer Circuits Site is located outside of the supply well capture zone is incorrect;
 - dilution at the wellhead, conservatively estimated to be at a ratio of 100 to 1, does not occur;
 - blending of water from different sources does not occur within the distribution system;
 - impacts to the well field continue unabated at on-site concentrations for 25 years.

Typical excavation/construction worker exposures to environmental media are evaluated for adults in the hypothetical future exposure scenario. There are seven environmental medium exposure-related pathways evaluated for excavation/construction worker:

- incidental ingestion of subsurface soil;
- direct dermal contact with subsurface soil;
- inhalation of fugitive dusts due to subsurface soil disturbances;
- incidental ingestion of surface soil;
- direct dermal contact with surface soil; and
- inhalation of fugitive dust due to surface soil disturbances.

The exposure pathway parameters used in to estimate intakes of site-related constituents through all identified pathways for adult excavation/construction worker are listed in **Table 4.9** and **Table 4.10**. The average adult excavation/construction worker is assumed to weigh 70 kg (USEPA, 1991). Future exposure periods for excavation/construction workers are assumed to be an average 8-hour work-day (USEPA, 1991) for an estimated 250 days per year, for one year.

Typical landscape workers' exposures to environmental media are evaluated for adults in the hypothetical future exposure scenario. There are three environmental medium exposure-related pathways evaluated for the landscape worker:

- incidental ingestion of surface soil;
- direct dermal contact with surface soil; and
- inhalation of fugitive dust from surface soil disturbances;

The exposure pathway parameters used in exposure algorithms to estimate intake of site-related constituents through all identified pathways for adult landscape worker is presented in **Table 4.11**. The average adult on-site landscape worker is assumed to weigh 70 kg (USEPA, 1991). Future exposure periods for landscape workers are assumed to be an

approximate 32 days a year for an approximate duration of 25 years (USEPA, 2004b). Thirty-two days a year is the upper bound estimate of grass cutting in Region 2. EPA suggests a landscaper performs activities on-site one day a week for the length of 9 months a year, excluding winter months. It is also assumed that the same landscaper is present for each activity performed on-site and that the site owner is loyal to the same landscaper for an average 25 years.

4.3 Quantification of Exposure

In this section, individual exposure point concentrations (EPC) from Section 4.1 and the exposure pathways identified in Section 4.2 are combined to quantify the magnitude, frequency and duration of exposure.

For each exposure pathway a medium-specific exposure equation was selected to estimate the chronic daily intake (CDI) in milligrams per kilogram per day (mg/kg/day) of substance mass in contact with the body. The CDI represents an averaged daily dose of a COPC ingested, inhaled or absorbed by a receptor. The averaged dose is critical for determining the degree of health risk/hazard associated with exposure to each COPC, and also accounts for much of the inherent uncertainty associated with exposure assessment.

The three categories of variables present in the equations used to calculate the CDI include:

- chemical-related variable (exposure point concentration);
- exposure scenario variables (contact rate, body weight, duration and frequency);
- and assessment determined variable (averaging time).

For each identified pathway, the intake variables were selected so that, when combined, an estimate of the reasonable maximum exposure (RME) would be represented. The RME is the maximum exposure that can reasonably be expected to occur at a site.

4.3.1 Ingestion of Groundwater

Ingestion of COPCs found in groundwater is assumed to occur from drinking tap water, for children and adults in the future off-site residential scenario, and for future commercial workers within the area served by the Falcon Drive Well field. In this case, VOCs present in on-site and near-site groundwater are assumed to migrate 3,900 feet to the nearest well field, or 2,000 feet to the nearest hypothetical residential well, without attenuating. In the case of the commercial worker, contaminants in groundwater entering the municipal distribution system would be ingested while drinking tap water at work. For the off-site resident, contaminants in groundwater entering either the municipal distribution system or a hypothetical private well would be ingested while drinking tap water at home.

$$\text{CDI} = (\text{CW} \times \text{IRW} \times \text{EF} \times \text{ED} \times \text{CF}) / (\text{AT} \times \text{BW}) \quad (\text{USEPA, 1989})$$

where:

CDI	=	chronic daily intake of constituents in groundwater (mg/kg-day)
IRW	=	ingestion rate (L/day)
CW	=	constituent concentration in groundwater (mg/L)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
CF	=	conversion factor (mg/ug)
AT	=	averaging time (days)
BW	=	body weight (kg)

The ingestion rate for drinking water for adults is assumed to be 2 Liters/day (L/day) for RME and 1 L/day for children ages 1 to 6 years and for commercial workers (USEPA, 1991). Use of groundwater as a drinking water source by adults is assumed to occur 350 days for 30 years (RME) (USEPA, 1991). Exposure duration for children is 6 years (USEPA, 1991). For commercial workers, the exposure duration is 250 days for 25 years.

4.3.2 Dermal Contact With Groundwater

Dermal absorption of COPCs found in groundwater is assumed to occur during bathing/showering for adults and children in the future off-site residential scenario. In this case contaminants present in on-site and near-site groundwater are assumed to migrate 3,900 feet to the nearest well field, or 2,000 feet to the nearest hypothetical residential well, without attenuating and then be absorbed through the skin while showering or bathing.

The CDI is referred to as the Dermally Absorbed Dose (DAD) for dermal contact. The DAD for constituents in on-site groundwater due to dermal absorption while bathing or showering is calculated by the following formula (USEPA, 2004):

$$\text{DAD} = (\text{DA}_{\text{event}} \times \text{EV} \times \text{ED} \times \text{SA}) / (\text{AT} \times \text{BW})$$

where:

DAD	=	dermally absorbed dose (mg/kg-day)
DA_{event}	=	absorbed dose per event (mg/cm ² -event)(chemical specific)
SA	=	skin surface area available for contact (cm ²)
EV	=	event frequency (events/day)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (years)
AT	=	averaging time (days)
BW	=	body weight (kg)

$$\text{DA}_{\text{event}} \text{ (for organic compounds where } \tau_{\text{event}} \leq t^*) = 2\text{FA} \times K_p \times C_w (6\tau_{\text{event}} \times t_{\text{event}} / \Pi)^{1/2}$$

Where:

FA	=	fraction absorbed water (dimensionless/chemical specific)

K_p	=	dermal permeability coefficient of compound in water (cm/hr/chemical specific)
C_w	=	chemical concentration in groundwater (mg/cm ³)
τ_{event}	=	lag time per event (hr/event)
t_{event}	=	event duration (hr/event)
t^*	=	time to reach steady-state (hr) = $2.4\tau_{\text{event}}$

$$DA_{\text{event}} \text{ (for inorganic compounds)} = K_p \times C_w \times t_{\text{event}}$$

Where:

K_p	=	dermal permeability coefficient of compound in water (cm/hr/chemical specific)
C_w	=	chemical concentration in groundwater (mg/cm ³)
t_{event}	=	event duration (hr/event)

This route/pathway accounts for daily exposure to water while bathing and/or showering. Total body surface area (18,000 square centimeters [cm²] for adults, and 6,600 cm² for a 6 year old child) was assumed for this scenario (USEPA, 2004). Shower time was assumed to be 0.58 hours/day for adults and bathing time was assumed 1 hour/day for children for RME exposure (USEPA, 2004).

The spreadsheet ORG04_01.XLS and INORG04_01.XLS were used for the calculations of the DAD.

4.3.3 Inhalation of Ground Water Vapors During Showering

Inhalation of COPCs found in groundwater is assumed to occur during showering for adults and children in the future off-site residential scenario. In this case, contaminants in groundwater entering either the municipal distribution system through a future residential well would be released as a vapor (VOCs) for exposure via inhalation during showering. The following formula is used to calculate the CDI of COPCs in groundwater due to inhalation during showering (USEPA, 1989):

$$CDI = (CA \times IR \times ET \times EF \times ED) / (AT \times BW)$$

where:

CA	=	concentration in air (mg/m ³)
IR	=	inhalation rate (m ³ /day)
ET	=	exposure time (hr/day)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (yrs)
AT	=	averaging time (days)
BW	=	body weight (kg)

The inhalation rate for adults during showering is assumed to be 1 cubic meters per hour (m³/hr) and 1 m³/hr was used for the child (USEPA, 1991). Shower time was assumed to be

0.58 hours/day for adults and bathing time was assumed 1 hour/day for children for RME exposure (USEPA, 2004).

Children were conservatively assumed to be exposed to the same vapors emanating from a showerhead although most young children are likely to take baths instead of showers, and the baths are often drawn before the child is placed in the tub. Use of groundwater as a source for bathing by adults is assumed to occur 350 days for 30 years (RME) (USEPA, 1991). Exposure duration for children is 350 days for 6 years (USEPA, 1991).

To calculate the concentration in air from groundwater concentrations for the showering scenario, the Andelman Model modified by Schaum was used; therefore,

$$CA = (C_{amax}/2)t_1 + C_{amax}t_2/(t_1 + t_2)$$

Where:

C_{amax}	=	maximum concentration of contaminant in air (mg/m ³)
t_1	=	time of shower (hr)
t_2	=	time after shower (hr)
C_{amax}	=	$C_w f F_w t_1 / V$
C_w	=	water concentration (mg/L)
f	=	fraction volatilized (unitless)
F_w	=	water flow rate, L/hr
t_1	=	time of shower (hr)
V	=	Bathroom volume (m ³)

Andelman reported volatilization fractions ranging from 0.5 to 0.9. The volatilization fraction of 0.45 was used for PCE and 0.49 for TCE. The time of the shower for the adult was 0.2 hrs/day where the time after the shower was 0.38 hr/day (to account for the RME value of 0.58 hrs/day for showering.) For the child, the time used for both bathing and time after bathing was 0.5 hrs/day.

A water flow rate of 1000 L/hr and bathroom volume of 16 m³ were used (the maximum of the default values for the shower model.) (Schaum, 1994).

An inhalation rate for adults within a residence is assumed to be 20 m³/day, and 10 m³/day for children between the ages of 1 and 6 years (USEPA, 1991). Exposure frequency for adults and children at a residence is 350 days a year (USEPA, 1991). Exposure duration for adults at a residence is 30 years (USEPA, 1991) based on calculated population mobility and is 6 years for a young child (USEPA, 1991). For inhalation of indoor vapors inside a residence, exposure time was assumed to be 24 hours/day for adults and for children (USEPA, 1991). Additional information can be found in **Tables A-1, A-2, A-3, and A-4.**

4.3.4 Inhalation of Vapors From Groundwater to Indoor Air

Inhalation of VOCs found in groundwater is assumed to occur in the residential area downgradient of the site via the groundwater to indoor air pathway for the current and future residential scenario. In this case VOCs present in on-site and near-site groundwater are assumed to migrate 2,000 feet to the nearest residence without attenuating, transfer to the vapor phase and enter the residence through pores and cracks in the foundation.

A qualitative evaluation was conducted as part of the HHRA using groundwater concentrations and screening tables from the draft USEPA guidance entitled "Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils" (November 2002). Given that there are concentrations of volatile contaminants that exceed the screening values it is recommended to pursue a vapor intrusion study for buildings that lie over the plume.

4.3.5 Inhalation of Airborne Dusts and Particulates

Inhalation exposure may occur during intrusive activities such as those performed by maintenance workers, utility trench workers and construction workers. Potential health hazards posed by airborne particulate material disturbances from the Former Computer Circuits site were estimated using a particulate emission factor (PEF) based on average mean wind speed and climate conditions. The PEF relates soil contaminant concentrations to air contaminant concentrations that may be inhaled on site. The derivation of the PEF for the commercial/industrial scenario is from the EPA Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, 2002).

$$\text{PEF (m}^3/\text{kg)} = Q/C_{\text{wind}} \times (3600\text{sh/h}/0.036 \times [1-V] \times [U_m/U_t]^3 \times F(x)$$

Q/C_{wind} = inverse of mean concentration at center of a 0.5 acre square source ($\text{g/m}^2\text{-s}$ per kg/m^3)

V = fraction of vegetative cover (unitless)

U_m = mean annual windspeed (m/s)

U_t = equivalent threshold value of windspeed at 7m (m/s)

$F(x)$ = function dependent on U_m/U_t derived using Cowherd, et.al. (1985) (unitless)

The zone used to represent the Former Computer Circuits site was Zone VIII, Hartford, Connecticut from a USEPA database containing information on climatic zones.

The calculated PEF result was $4.87 \times 10^9 \text{ m}^3/\text{kg}$ for the surface soil contaminants, Benzo(a)pyrene, N-Nitros-di-n-propylamine, and arsenic. An estimation of percent vegetative cover on the property was calculated to be 15.5%. Using **Figure 3**, the area located to the east of the building was measured and designated as a soil exposed area where vegetation could grow and where most of the soil contamination was assumed to occur. During the Ecological Risk Assessment of the Former Computer Circuits site, this area was photographed and large sized vegetation was noted and identified. In order to calculate the percent vegetative cover, the soil exposed area to the east of the building was conservatively boxed off and assumed to be 100% of the soil exposed area. The area is equal to 27,665.8 square feet or 0.6351 acres. The identified vegetation on the map was conservatively boxed

off and calculated as a percent of the entire boxed off area. The vegetative area is equal to 5,102.8 square feet or 0.1171 acres, also equal to 15.5% of the total boxed off area.

Inhalation of contaminants found in surface soil is assumed to occur on-site at the Former Computer Circuits for the current and future exposure scenario during excavation/construction and landscaping activities. Using the PEF, the CDI for inhalation of fugitive dust was calculated as follows (USEPA, 1989):

$$CDI = (CS \times ED \times EF \times ET \times IR \times (PEF^{-1})) / (AT \times BW)$$

where:

CDI	=	chronic daily intake via inhalation (mg/kg-day)
CS	=	constituent concentration in soil (mg/kg)
ED	=	exposure duration (years)
EF	=	exposure frequency (days/year)
ET	=	exposure time (hours/day)
IR	=	inhalation rate (m ³ /hr)
PEF	=	particulate emission factor (m ³ /kg)
BW	=	body weight (kg)
AT	=	averaging time (days)

Inhalation rates vary with activity level and with age. Inhalation rates are lowest when at rest or sedentary and increase with the level of exercise. USEPA (1991) recommended the use of an average inhalation rate of 20 m³/day for an adult.

Exposure periods for excavation/construction workers are assumed to 250 days per year, for one year. Thirty-two days a year is the upper bound estimate of grass cutting in Region 2. EPA suggests a landscaper performs activities on-site one day a week for the length of 9 months a year, excluding winter months. It is also assumed that the same landscaper is present for each activity performed on-site and that the site owner is loyal to the same landscaper for an average 25 years.

4.3.6 Incidental Ingestion of Soil

Incidental ingestion of contaminants found in surface and subsurface soil is assumed to occur on-site at the Former Computer Circuits for the current and future exposure scenario during excavation/construction and landscaping (surface soil only) activities. The CDI for ingestion of soil due is calculated by the following formula (USEPA, 1989):

$$CDI = (CS \times FI \times EF \times ED \times IR \times CF) / (AT \times BW)$$

where:

CDI	=	chronic daily intake via ingestion (mg/kg-day)
CS	=	constituent concentration in soil (mg/kg)
FI	=	fraction ingested (unitless)

EF	=	exposure frequency (days/yr)
ED	=	exposure duration (years)
IR	=	ingestion rate of soil (mg/day)
CF	=	conversion factor (1.0×10^{-6} kg/mg)
BW	=	body weight (70 kg)
AT	=	averaging time (days)

Ingestion of soil occurs during normal activities and is most frequently associated with the transfer of dirt on the hands to the mouth. Thus, activities leading to soil on the hands can lead to ingestion of soil. An excavation/construction or landscape worker engaged in activities in the vacant area behind the building (East) could be exposed to COPCs through the ingestion pathway. The USEPA (1991) recommends a mean soil ingestion rate of 50 mg/day for adults (commercial/landscapers) and 330 mg/day for construction workers (USEPA, 2002).

Exposure periods for excavation/construction workers are assumed to 250 days per year, for one year. Thirty-two days a year is the upper bound estimate of grass cutting in Region 2. EPA suggests a landscaper performs activities on-site one day a week for the length of 9 months a year, excluding winter months. It is also assumed that the same landscaper is present for each activity performed on-site and that the site owner is loyal to the same landscaper for an average 25 years.

4.3.7 Dermal Contact with Soil

Dermal contact with contaminants found in surface soil is assumed to occur on-site at the Former Computer Circuits for the current and future exposure scenario during excavation/construction and landscaping activities. The DAD of constituents in surface soil through dermal absorption as a result of direct contact with surface soil from the Former Computer Circuits site is calculated by the following formula:

$$\text{DAD} = (\text{Da}_{\text{event}} \times \text{EF} \times \text{ED} \times \text{EV} \times \text{SA}) / (\text{AT} \times \text{BW})$$

where:

DAD	=	dermal absorbed dose (mg/kg-day)
Da_{event}	=	absorbed dose per event ($\text{mg}/\text{cm}^2/\text{event}$)
SA	=	skin surface area available for contact (cm^2)
EV	=	event frequency (events/day)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (years)
BW	=	body weight (70 kg)
AT	=	averaging time (days).

Da_{event}	=	$\text{Cs} \times \text{CF} \times \text{AF} \times \text{ABS}$
CS	=	constituent concentration in soil (mg/kg)
CF	=	conversion factor (kg/mg)

AF = soil-to-skin adherence factor (mg/cm^2)
ABS = dermal absorption factor (chemical specific)

An excavation/construction or landscape worker engaged in activities in the vacant area behind the building (East) could be exposed to COPCs through the direct contact pathway. The exposed skin surface of the adult commercial/industrial receptor is limited to the head, hands, and forearms (USEPA, 2004). Recommended exposed skin surface area is $3,300 \text{ cm}^2$ for adults during outdoor activities (USEPA, 2002).

The weighted AFs for adult commercial/industrial activities were calculated by the EPA. The calculation was based on the skin surface available, overall adherence factor of soil to the skin, and adherence factor of soil to skin. Based on this calculation, the RME for the AF is 0.2 milligrams per square centimeters (mg/cm^2) for the landscaper (USEPA, 2004) and 0.3 mg/cm^2 for the construction/excavation worker (USEPA, 2002).

Exposure periods for excavation/construction workers are assumed to 250 days per year, for one year. Thirty-two days a year is the upper bound estimate of grass cutting in Region 2. EPA suggests a landscaper performs activities on-site one day a week for the length of 9 months a year, excluding winter months. It is also assumed that the same landscaper is present for each activity performed on-site and that the site owner is loyal to the same landscaper for an average 25 years.

5.0 TOXICITY ASSESSMENT

The purpose of the toxicity assessment is to evaluate the potential for the COPCs to cause adverse health effects in exposed individuals and to estimate the relationship between exposure to a constituent and the increased likelihood and/or severity of induced adverse health effects.

The toxicity assessment links adverse effects (carcinogenic, non-carcinogenic) resulting from the chronic lifetime dosage of COPCs received by an individual in a given scenario. The dose received determines the magnitude of any anticipated adverse effects related to the constituent's inherent toxicity.

Toxicity values are used to quantify the probability of observing cancer and non-cancer effects in a potentially exposed population. A chronic reference dose (RfD), reported in mg/kg-day, or reference concentration (RfC) expressed in mg/m³, are the toxicity values most often used in estimating possible non-carcinogenic effects. A slope factor (SF), expressed in units of (mg/kg-day)⁻¹, is most commonly used to evaluate potential human carcinogenic effects.

In general, SF and RfD or RfC values are derived from long-term animal studies. These studies incorporate uncertainty factors to compensate for extrapolation of observed adverse effects in laboratory animals to estimate possible adverse effects in humans. If adequate human data from epidemiological studies are available, these data are used to reduce uncertainty in deriving toxicity values.

IRIS and NCEA databases do not present RfDs or SFs for the inhalation route. Instead reference concentrations (RfC) for noncarcinogenic effects and unit risk factors (URF) for carcinogenic effects are provided. To calculate an RfD_i from an RfC the following equation was used:

$$\text{RfD}_i \text{ mg/kg-day} = \text{RfC (mg/m}^3\text{)} \times 20\text{m}^3/\text{day} \times 1/70 \text{ kg (Smucker, 2002)}$$

To calculate the SF_i from the inhalation URF, the following equation was used:
 $\text{SF}_i \text{ (kg-day)/mg} = \text{URF (m}^3/\text{ug)} \times \text{day}/20\text{m}^3 \times 70\text{kg} \times 10^3\text{ug/mg (Smucker, 2002)}$

To estimate risks from dermal exposures, the toxicity factor requires adjustments based on an absorbed dose. The adjustment is necessary when the GI absorption of a chemical is significantly less than 100 percent (i.e., 50 percent). The values for GI absorption were obtained from Exhibit 4-1 of RAGS Part E (EPA, 2004). The $\text{RfD}_{\text{ABS}} = \text{RfD}_o \times \text{ABS}_{\text{GI}}$.

The toxicity assessment prepared for the Former Computer Circuits site was dependent upon the use of USEPA-derived toxicity values. As specified (USEPA, 2003), the resource selection for obtaining the most current and appropriate toxicity values, in descending order, is as follows:

- Tier I – Integrated Risk Information System (IRIS), an on-line database maintained by USEPA;
- Tier 2 – EPA’s Provisional Peer Reviewed Toxicity Values (PPRTVs) – The Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Technical Support Center develops PPRTVs on a chemical specific basis when requested by EPA’s Superfund Program.
- Tier 3 – Other Toxicity Values – Tier 3 includes additional EPA and non-EPA sources of toxicity information. Priority should be given to those source of information that are most current, the basis for which is transparent and publicly available and which have been peer reviewed.” (USEPA, 2003)

Non-carcinogenic toxicity effects information for the COPCs are listed in **Tables 5.1** and **5.2**. Carcinogenic toxicity effects for the COPCs are listed in **Tables 6.1** and **6.2**.

5.1 Non-carcinogenic Effects

To evaluate the potential for non-carcinogenic effects, an exposure level over a specified time period (e.g., lifetime) is compared to a non-cancer toxicity value (reference dose) for a similar exposure period. The reference dose (RfD) represents a level of exposure below which it is unlikely for even sensitive populations to experience adverse health effects. Chronic RfD or RfC values are specifically developed to be protective for long-term exposure to a compound.

This ratio of exposure to toxicity is called a non-cancer hazard quotient (HQ):

$$HQ = \frac{CDI}{RfD} \text{ where:}$$

HQ = hazard quotient
CDI = chronic daily intake (mg/kg-day)
RfD = Reference Dose

To characterize low dose exposure effects, the no-observed-adverse-effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL) are evaluated. The NOAEL is an exposure level where there are no statistically or biologically significant increases in the frequency or severity of adverse effects in the exposed population. The LOAEL is the lowest exposure dose in a dose-response experiment at which there are statistically or biologically significant increases in severity or frequency of adverse effects in the exposed population.

In arriving at RfD toxicity values, the NOAEL or LOAEL is divided by additional factors to account for uncertainties in extrapolation from subchronic to chronic exposures and from uncertain species-to-species toxicity relationships. These uncertainty factors can range from 1 to 10,000. Uncertainty factors are presented for the COPC RfDs in **Tables 5.1** and **5.2**.

For assessing the potential of non-carcinogenic effects from more than one chemical, a hazard index (HI) is used which assumes that simultaneous subthreshold exposures to several chemicals could result in an adverse health effect. The hazard index is equal to a summation of the hazard quotient of each COPC as follows:

$$HI_T = \sum CDI_{ij} / RfD_i$$

where:

HI_T = total hazard index for cumulative exposure scenarios for an individual
 CDI_{ij} = chronic daily exposure for the i^{th} constituent in the j^{th} exposure pathway
 RfD_i = Reference dose for the i^{th} constituent.

When the hazard quotient exceeds unity (1.0) for the defined exposure scenario, there may be concern that the exposed receptor may be subject to an adverse health impact. If the ratio is below unity, then it is generally assumed that no adverse impact to human health has or will occur. While any single COPC with an exposure level greater than the reference dose will exceed unity, in the case of multiple COPCs, the hazard index can exceed unity with all individual COPC exposures below the reference dose.

The HI approach has several limitations which must be acknowledged. It is important to note that both the HQ and HI are ratios, and after unity has been exceeded, the magnitude of the index has little bearing on the potential severity of adverse effects that may be anticipated. In this case the level of concern does not increase in a linear manner because the RfDs do not have equal accuracy or precision and are not based on the same severity of effect. In addition the hazard index may sum hazard quotients with RfDs of varying levels of confidence, that include different uncertainty adjustments and modifying factors.

It may also be inappropriate to sum non-cancer HQs for constituents that are not expected to induce the same type of effects or that do not act by the same mechanism or affect the same organ system. This is generally only a concern when the HI is above unity as a consequence of summing several hazard quotients of similar value.

5.2 Carcinogenic Effects

Carcinogenesis, unlike non-carcinogenic health effects, is considered by EPA to be a “non-threshold” mechanism since it is believed that any level of exposure may present a finite probability of generating a carcinogenic response.

In a carcinogenic assessment, USEPA uses a two-part evaluation which first assigns a weight- of evidence-classification, based on the available data to determine the likelihood that an agent is a human carcinogen, and then calculates the slope factor. A chemical agent which has been shown to be a carcinogen in animal studies, humans or both is given a provisional weight-of-evidence classification which is then adjusted upward or downward based on other supporting evidence.

USEPA's weight-of-evidence classification system for carcinogenicity includes the following five categories:

Group A - Human Carcinogen - Sufficient evidence from epidemiological studies substantiated by causal association between exposure and carcinogenicity.

Group B1 - Probable Human Carcinogen - Limited evidence of carcinogenicity in humans from available epidemiological data.

Group B2 - Probable Human Carcinogen - Sufficient evidence of carcinogenicity in animals, but inadequate or no evidence in humans.

Group C - Possible Human Carcinogen - Limited evidence of carcinogenicity in animals.

Group D - Not Classified - Inadequate evidence of carcinogenicity in animals to support classification.

Group E - Not a Human Carcinogen - No evidence of carcinogenicity in at least two adequate animal tests in different species or in both epidemiological and animal studies.

Based on the evaluation that a constituent is a known or probable human carcinogen, a toxicity value that defines a quantitative relationship between dose and response (i.e., slope factor [SF]) is calculated by the USEPA. A SF converts estimated daily intakes averaged over a lifetime of exposure directly to incremental risk of an individual developing cancer. Because relatively low intakes (compared to animal studies) are associated with environmental exposures at hazardous waste sites it is assumed that the dose-response relationship is linear in the low-dose portion of the dose-response curve. Under this assumption, the SF is a constant and excess lifetime carcinogenic risk (ELCR) will be directly related to intake. The ELCR is defined as the estimated increased risk that occurs over an assumed average lifespan of 70 years as the result of exposure to a specific known carcinogen (USEPA, 1989). Thus, the linear form of the ELCR equation is usually applicable for estimating site risks. This linear low-dose equation is defined as:

$$\text{ELCR} = \text{CDI} \times \text{SF}$$

where:

ELCR = Excess Lifetime Carcinogenic Risk

CDI = chronic daily intake averaged over 70 years (mg/kg-day)

SF = slope factor, expressed in (mg/kg-day)⁻¹.

In some cases it may be appropriate to sum the risks to an individual from exposure to a substance or multiple substances through several pathways. In this case the total exposure will equal the sum of the exposure via all relevant pathways as follows:

$$\text{Risk}_T = \sum \text{Risk}_{ij}$$

where:

Risk_T = the total exposure cancer risk, expressed as a unitless probability, and

Risk_{ij} = the risk estimate for the ith constituent in the jth exposure medium pathway.

The resultant summation of cancer risks is a very conservative estimate since the calculated RME for each exposure pathway includes many conservative and upper-bound parameter values and assumptions.

5.3. Toxicological Profiles

The following sections present a toxicological profile for each of the constituents of potential concern summarized from the ATSDR toxicological profiles. Each profile presents the current RfD and/or slope factor, if available. More detail on each COPC is available through the ATSDR and IRIS websites included in the Section 8.0.

5.3.1 Arsenic

Arsenic is an element that is widely distributed in the earth's crust. Elemental arsenic is ordinarily a steel grey metal-like material that sometimes occurs naturally. However, arsenic is usually found in the environment combined with other elements such as oxygen, chlorine, and sulfur. Arsenic combined with these elements is called inorganic arsenic. Arsenic combined with carbon and hydrogen is referred to as organic arsenic. The organic forms of arsenic are usually less harmful than the inorganic forms (ATSDR, 2000).

The concentration of arsenic in soil varies widely, generally ranging from about 1 to 40 parts of arsenic to a million parts of soil (ppm) with an average level of 5 ppm. Levels of arsenic in food range from about 20 to 140 ppb. However, levels of inorganic arsenic, the form of most concern, are far lower. Levels of arsenic in the air generally range from less than 1 to about 2,000 nanograms (1 nanogram equals a billionth of a gram) of arsenic per cubic meter of air (less than 1–2,000 ng/m³), depending on location, weather conditions, and the level of industrial activity in the area. However urban areas generally have mean arsenic levels in air ranging from 20 to 30 ng/m³, most of which is attached to small particles (ATSDR, 2000).

If you swallow lower levels of inorganic arsenic (ranging from about 300 to 30,000 ppb in food or water), you may experience irritation of your stomach and intestines, with symptoms such as stomach ache, nausea, vomiting, and diarrhea. Other effects you might experience from swallowing inorganic arsenic include decreased production of red and white blood cells which may cause fatigue, abnormal heart rhythm, blood-vessel damage resulting in bruising, and impaired nerve function causing a "pins and needles" sensation in your hands and feet (ATSDR, 2000).

Perhaps the single most characteristic effect of long-term oral exposure to inorganic arsenic is a pattern of skin changes. These include a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso (ATSDR, 2000). This hyperpigmentation effect is the basis for the oral Reference Dose (4E-2 mg/kg-day) for arsenic (IRIS, 2004).

A small number of the corns may ultimately develop into skin cancer. Swallowing arsenic has also been reported to increase the risk of cancer in the liver, bladder, kidneys, prostate, and lungs. The Department of Health and Human Services (DHHS) has determined that inorganic arsenic is a known carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic arsenic is carcinogenic to humans (ATSDR, 2000). The EPA and the National Toxicology Program (NTP) have classified inorganic arsenic as a known human carcinogen (Class A) based on sufficient evidence of an increase in lung cancer mortality observed in multiple human populations exposed primarily through inhalation, and an increase in multiple organ cancers and skin cancer observed in populations consuming drinking water high in inorganic arsenic (IRIS, 2004).

The carcinogenic inhalation unit risk for inorganic arsenic is $4.3\text{E-}3 \text{ ug/m}^3$ (IRIS, 2004). Despite all the adverse health effects associated with inorganic arsenic exposure, there is some evidence that the small amounts of arsenic in the normal diet (10–50 ppb) may be beneficial to your health. For example, animals fed a diet with unusually low concentrations of arsenic did not gain weight normally. They also became pregnant less frequently than animals fed a diet containing a normal amount of arsenic. Further, the offspring from these animals tended to be smaller than normal, and some died at an early age. However, no cases of arsenic deficiency in humans have ever been reported (ATSDR, 2000).

Almost no information is available on the effects of organic arsenic compounds in humans. Studies in animals show that most simple organic arsenic compounds (such as methyl and dimethyl compounds) are less toxic than the inorganic forms and that some complex organic arsenic compounds are virtually non-toxic. However, high doses can produce some of the same effects. Thus, if you are exposed to high doses of an organic arsenic compound, you might develop nerve injury, stomach irritation, or other effects, but this is not known for certain (ATSDR, 2000).

5.3.2 Benzo(a)pyrene

Benzo(a)pyrene (B[a]P) belongs to a class of compounds called Polycyclic aromatic hydrocarbons (PAHs). PAHs are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot (ATSDR, 1995).

PAHs enter the air mostly as releases from volcanoes, forest fires, burning coal, and automobile exhaust. Breathing air containing PAHs from cigarette smoke, wood smoke, vehicle exhausts, asphalt roads, or agricultural burn smoke. Eating grilled or charred meats; contaminated cereals, flour, bread, vegetables, fruits, meats; and processed or pickled foods are also sources of PAHs (ATSDR, 1995).

A major source of B(a)P is cigarette smoke. The long term effect of B(a)P exposure in humans is believed to be bronchial carcinoma. The EPA's weight of evidence classification is B2 based on multiple animal studies in many species demonstrating BAP to be carcinogenic following administration by numerous routes. BAP has produced positive

results in numerous genotoxicity assays. Human data specifically linking benzo[a]pyrene (BAP) to a carcinogenic effect are lacking (IRIS, 2004). EPA presents an Oral Slope Factor -- $7.3\text{E}+0/(\text{mg}/\text{kg}\cdot\text{day})$ for B(a)P (IRIS, 2004).

5.3.3 Hexavalent Chromium

Chromium is a naturally occurring element found in rocks, animals, plants, soil, and in volcanic dust and gases. Chromium is present in the environment in several different forms. The most common forms are chromium(0), chromium(III), and chromium(VI). No taste or odor is associated with chromium compounds. Chromium(III) occurs naturally in the environment and is an essential nutrient. Chromium(VI) and chromium(0) are generally produced by industrial processes (ATSDR, 2000a).

The metal chromium, which is the chromium(0) form, is used for making steel. Chromium(VI) and chromium(III) are used for chrome plating, dyes and pigments, leather tanning, and wood preserving. Chromium(III) is an essential nutrient that helps the body use sugar, protein, and fat (ATSDR, 2000a).

Breathing high levels of chromium(VI) can cause irritation to the nose, such as runny nose, nosebleeds, and ulcers and holes in the nasal septum. Ingesting large amounts of chromium(VI) can cause stomach upsets and ulcers, convulsions, kidney and liver damage, and even death (ATSDR, 2000a).

The EPA determined an oral RfD of $3\text{E}-3 \text{ mg}/\text{kg}\cdot\text{day}$ and an inhalation RfC of $8\text{E}-6 \text{ mg}/\text{m}^3$ for aerosols (due to nasal septum atrophy) and $1\text{E}-4 \text{ mg}/\text{m}^3$ meter for particulates for hexavalent chromium (IRIS, 2004).

Skin contact with certain chromium(VI) compounds can cause skin ulcers. Some people are extremely sensitive to chromium(VI) or chromium(III). Allergic reactions consisting of severe redness and swelling of the skin have been noted.

Hexavalent chromium is known to be carcinogenic in humans by the inhalation route of exposure. Results of occupational epidemiologic studies of chromium-exposed workers are consistent across investigators and study populations. Dose-response relationships have been established for chromium exposure and lung cancer. Chromium-exposed workers are exposed to both Cr(III) and Cr(VI) compounds. Because only Cr(VI) has been found to be carcinogenic in animal studies, however, it was concluded that only Cr(VI) should be classified as a human carcinogen. The air unit risk factor is $1.2\text{E}-2 \text{ ug}/\text{m}^3$ (IRIS, 2004).

The World Health Organization (WHO) has determined that chromium(VI) is a human carcinogen. The Department of Health and Human Services (DHHS) has determined that certain chromium(VI) compounds are known to cause cancer in humans (ATSDR, 2000a).

Under the current guidelines (USEPA, 1986) and proposed guidelines (USEPA, 1996), Cr(VI) is classified as Group A - known human carcinogen by the inhalation route of

exposure. Carcinogenicity by the oral route of exposure cannot be determined and is classified as Group D (IRIS, 2004).

5.3.4 Manganese

Manganese is a naturally occurring metal that is found in many types of rocks. Pure manganese is silver-colored, but does not occur naturally. It combines with other substances such as oxygen, sulfur, or chlorine. Manganese can also be combined with carbon to make organic manganese compounds. Common organic manganese compounds include pesticides, such as maneb or mancozeb, and methylcyclopentadienyl manganese tricarbonyl (MMT), a fuel additive in some gasolines (ATSDR, 2000b).

Manganese is an essential trace element and is necessary for good health. Manganese can be found in several food items, including grains and cereals, and is found in high amounts in other foods, such as tea (ATSDR, 2000b).

Some individuals exposed to very high levels of manganese for long periods of time in their work developed mental and emotional disturbances and slow and clumsy body movements. This combination of symptoms is a disease called "manganism." Workers usually do not develop symptoms of manganism unless they have been exposed to manganese for many months or years. Manganism occurs because too much manganese injures a part of the brain that helps control body movements (ATSDR, 2000b). The EPA determined an oral RfD of 1.4E-1 mg/kg-day and a RfC of 5E-5 mg/m³ based on the Central Nervous System effects (IRIS 2004).

There are no human cancer data available for manganese. Exposure to high levels of manganese in food resulted in a slightly increased incidence of pancreatic tumors in male rats and thyroid tumors in male and female mice; however existing studies are inadequate to assess the carcinogenicity of manganese (ATSDR, 2000b).

The EPA has determined that manganese is not classifiable as to human carcinogenicity (Class D) (IRIS, 2004).

5.3.5 Nickel

Pure nickel is a hard, silvery-white metal, which has properties that make it very desirable for combining with other metals to form mixtures called alloys. Some of the metals that nickel can be alloyed with are iron, copper, chromium, and zinc. These alloys are used in making metal coins and jewelry and in industry for making items such as valves and heat exchangers. Most nickel is used to make stainless steel. There are also compounds consisting of nickel combined with many other elements, including chlorine, sulfur, and oxygen. Many of these nickel compounds are water soluble (dissolve fairly easily in water) and have a characteristic green color. Nickel and its compounds have no characteristic odor or taste. Nickel compounds are used for nickel plating, to color ceramics, to make some batteries, and

as substances known as catalysts that increase the rate of chemical reactions (ATSDR, 1998).

Nickel combined with other elements occurs naturally in the earth's crust. It is found in all soil, and is also emitted from volcanoes. Nickel is the 24th most abundant element. The earth's core is composed of 6% nickel (ATSDR, 1998).

Soil usually contains between 4 and 80 parts of nickel in a million parts of soil (ppm; 1 ppm= 1,000 ppb). Food contains nickel and is the major source of nickel exposure for the general population. You eat about 170 micrograms (μg ; 1 μg =1,000 ng) of nickel in your food every day. Foods naturally high in nickel include chocolate, soybeans, nuts, and oatmeal. Our daily intake of nickel from drinking water is only about 2 μg . We breathe in between 0.1 and 1 μg nickel/day, excluding nickel in tobacco smoke. We are exposed to nickel when we handle coins and touch other metals containing nickel (ATSDR, 1998).

The most common harmful health effect of nickel in humans is an allergic reaction to nickel. Approximately 10-15% of the population is sensitive to nickel. A person can become sensitive to nickel when jewelry or other things containing nickel are in direct contact with the skin (ATSDR, 1998).

People who are not sensitive to nickel must eat very large amounts of nickel to suffer harmful health effects. Workers who accidentally drank light-green water containing 250 ppm of nickel from a contaminated drinking fountain had stomach aches and suffered adverse effects in their blood (increased red blood cells) and kidneys (increased protein in the urine). This concentration of nickel is more than 100,000 times greater than the amount usually found in drinking water (ATSDR, 1998).

Lung inflammation and damage to the nasal cavity have been observed in animals exposed to nickel compounds. At high concentrations, the lung damage is severe enough to affect lung function. Long-term exposure to lower levels of a nickel compound that dissolves easily in water did not cause cancer in animals. Lung cancer developed in rats exposed for a long time to nickel compounds that do not dissolve easily in water (ATSDR, 1998).

Oral exposure of humans to high levels of soluble nickel compounds through the environment is extremely unlikely. Because humans have only rarely been exposed to high levels of nickel in water or food, much of our knowledge of the harmful effects of nickel is based on animal studies. Eating or drinking levels of nickel much greater than the levels normally found in food and water have been reported to cause lung disease in dogs and rats and to affect the stomach, blood, liver, kidneys, and immune system in rats and mice, as well as their reproduction and development (ATSDR, 1998).

The EPA presents an oral RfD of $2\text{E}-2$ mg/kg-day for nickel based on decreased body and organ weights (IRIS, 2004).

The U.S. EPA has not evaluated soluble salts of nickel, as a class of compounds, for potential human carcinogenicity. However, nickel refinery dust and specific nickel compounds - nickel carbonyl and nickel subsulfide have been evaluated (IRIS, 2004).

5.3.6 *n*-Nitrosodi-*n*-propylamine

n-Nitrosodi-*n*-propylamine is a chemical produced by industry in small amounts for research. It is a yellow liquid at room temperature. Small amounts of *n*-nitrosodi-*n*-propylamine are produced as a side reaction during some manufacturing processes, as a contaminant in some weed killers, and during the manufacture of some rubber products (ATSDR, 1990).

No information is available on the effects of *n*-nitrosodi-*n*-propylamine in people. Human exposure to nitrosamines results from contact with mixtures containing these compounds (e.g., cutting oils, tobacco products). Because of potential confounding by the other substances in these mixtures, data is of limited use in the evaluation of carcinogenicity of individual nitrosamines. However, EPA determined an Oral Slope Factor of 7.0 mg/kg/day (IRIS, 2004)

The Department of Health and Human Services (DHHS) has determined that *n*-nitrosodi-*n*-propylamine may reasonably be anticipated to be a human carcinogen. The EPA's classification is B2 (probable human carcinogen) based on increased tumor incidence at multiple sites in two rodent species and in monkeys administered the compound by various routes (IRIS, 2004)

5.3.7 *Tetrachloroethylene*

Tetrachloroethylene is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing. It is also used to make other chemicals and is used in some consumer products (ATSDR, 1998a).

Other names for tetrachloroethylene include perchloroethylene, PCE, and tetrachloroethene. It is a nonflammable liquid at room temperature. It evaporates easily into the air and has a sharp, sweet odor (ATSDR, 1998a).

High concentrations of tetrachloroethylene (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death (ATSDR, 1998a).

Results of animal studies, conducted with amounts much higher than those that most people are exposed to, show that tetrachloroethylene can cause liver and kidney damage. Exposure to very high levels of tetrachloroethylene can be toxic to the unborn pups of pregnant rats and mice. Changes in behavior were observed in the offspring of rats that breathed high levels of the chemical while they were pregnant (ATSDR, 1998a). EPA presents an oral RfD of 1E-2 mg/kg-day based on hepatotoxicity (IRIS, 2004).

The Department of Health and Human Services (DHHS) has determined that tetrachloroethylene may reasonably be anticipated to be a carcinogen. Tetrachloroethylene has been shown to cause liver tumors in mice and kidney tumors in male rats. At the present time, the EPA has not adopted a final position on the weight of evidence classification. However, the California EPA suggests an inhalation carcinogenic slope factor of $2\text{E-}2$ mg/kg/day (USEPA Region 9, 2002).

5.3.8 Trichloroethylene

Trichloroethylene (TCE) is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet, burning taste. It is used mainly as a solvent to remove grease from metal parts, but it is also an ingredient in adhesives, paint removers, typewriter correction fluids, and spot removers (ATSDR, 1998b).

Breathing small amounts may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Breathing large amounts of trichloroethylene may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage (ATSDR, 1998b). Skin contact with trichloroethylene for short periods may cause skin rashes.

Drinking large amounts of trichloroethylene may cause nausea, liver damage, unconsciousness, impaired heart function, or death. Drinking small amounts of trichloroethylene for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear (ATSDR, 1998b).

The NCEA provides an oral Reference Dose of $3\text{E-}4$ mg/kg-day and an inhalation reference dose of $1\text{E-}2$ mg/m³.

Some studies with mice and rats have suggested that high levels of trichloroethylene may cause liver, kidney, or lung cancer. Some studies of people exposed over long periods to high levels of trichloroethylene in drinking water or in workplace air have found evidence of increased cancer. Although, there are some concerns about the studies of people who were exposed to trichloroethylene, some of the effects found in people were similar to effects in animals (ATSDR, 1998b).

The carcinogen assessment summary for this substance has been withdrawn following further review. A new carcinogen summary is in preparation by the CRAVE Work Group (IRIS, 2004).

The NCEA provides an oral cancer slope factor and inhalation slope factor of $4\text{E-}1$ mg/kg-day. In its 9th Report on Carcinogens, the National Toxicology Program (NTP) determined that trichloroethylene is "reasonably anticipated to be a human carcinogen." The International Agency for Research on Cancer (IARC) has determined that trichloroethylene is "probably carcinogenic to humans." (USEPA, 2001a).

6.0 RISK CHARACTERIZATION

In this section the exposure assessment and toxicity assessment are combined to assess potential cancer risks and non-cancer health hazards based on the potential exposure. Section 6.1 presents the non-cancer health hazards to the target receptors from each medium. Section 6.2 presents the cancer risks to the target receptors from each medium. In Section 6.3, the cumulative health hazards and risks from all media are assessed.

6.1 Non-cancer Risks

In this section, the health hazards related to COPCs in each medium and exposure scenario are evaluated using conservative assumptions.

6.1.1 Groundwater

Under current and future exposure conditions, residents located approximately 2,500 feet downgradient of the site could be exposed to volatile organics in groundwater if they were to reach the area in sufficient concentration, transfer to the vapor phase and migrate through the home's foundation to the indoor air. This pathway was qualitatively evaluated and the results suggest that a vapor intrusion investigation be conducted for buildings that lie over the plume.

Future off-site residents and on-site commercial workers may be exposed to contaminants in the off-site groundwater if contaminants reach the local supply well and are distributed at current on-site concentrations, or a hypothetical private potable water well downgradient from the Former Computer Circuits at current on-site concentrations.

The non-cancer hazard quotients for current and future on-site and off-site receptors from groundwater are summarized in **Tables 7.4, 7.5, and 7.6**. A hazard quotient greater than one is indicated for the off-site resident child receptor from future exposure to TCE while showering. The hazard quotients for the remaining compounds and receptors were below the target value of 1 from exposure through the groundwater pathways.

6.1.2 Soil

The majority of the site surrounding the former north and south discharge points (industrial leaching pools) is paved, effectively removing exposure to near surface soils, however, it is probable that surficial overflow from the south industrial leaching pool system may have reached the exposed surface soil near the southeast corner of the building. Contaminants entering the ground through the leaching pool system would also affect subsurface soils. Non-cancer health hazards for on-site receptors from surface and subsurface soil are summarized in **Tables 7.1 through 7.3** for the current scenario and in **Tables 7.7 through 7.9** for the future scenario.

6.1.2.1 Subsurface Soil

Volatile contaminants in shallow subsurface soils could partition to the vapor phase and migrate through subsurface structures, such as utility trenches, and possibly enter the on-site building through cracks in the concrete slab foundation. Commercial workers inside of the

building could then be exposed to volatiles through the inhalation pathway.

There was no reported non-cancer Hazard Quotient greater than or equal to one for any of the selected COPCs detected in the indoor air. Non-cancer health hazards for on-site receptors from inhalation exposure of indoor air that may be impacted from vapors intrusion related to subsurface soil contamination are summarized in **Table 10**.

6.1.2.2 Surface Soil

Contaminants present in the surface zone (0-2 ft) could become airborne during future construction or routine maintenance activities, such as grounds maintenance (i.e. mowing, raking, etc.). Workers engaged in these activities could then be potentially exposed to contaminants through dermal, ingestion or inhalation (fugitive dust) pathways.

There was no reported non-cancer Hazard Quotients greater than or equal to one for any of the selected COPCs detected in surface soil.

6.2 Cancer Risks

In this section, the cancer risks related to COPCs in each medium are presented. For each target population, the exposure is evaluated as a conservative estimate of the cancer risks.

6.2.1 Groundwater

Under current exposure conditions, residents located downgradient of the site could be exposed to volatile organics in groundwater if they were to reach the area in sufficient concentration, transfer to the vapor phase and migrate through the home's foundation to the indoor air. This pathway was qualitatively evaluated and the results suggest that a vapor intrusion investigation be conducted for buildings that lie over the plume.

Future off-site residents and on-site commercial workers may be exposed to contaminants in the off-site groundwater if contaminants reach the local supply well and are distributed at current on-site concentrations, or a hypothetical private potable water well downgradient from the Former Computer Circuits at current on-site concentrations. The cancer risks for hypothetical future exposure to off-site residents from groundwater are summarized in **Tables 7.4, 7.5 and 7.6**.

For future off-site adult residents, the cancer risks from groundwater include the dermal exposure (1.74×10^{-4}), ingestion of tap water (8.4×10^{-4}), and the inhalation of vapors while showering (1.11×10^{-3}). For the future off-site child resident the cancer risk from groundwater include ingestion of tap water (4.0×10^{-4}), dermal exposure to tap water (7.87×10^{-5}), and inhalation of vapors while showering (4.08×10^{-3}). For on-site commercial workers the cancer risk from groundwater includes ingestion of tap water (2.51×10^{-4}). All of these values, with the exception of the dermal exposure to the off-site child receptor exceed EPA's acceptable risk range of 1×10^{-6} to 1×10^{-4} .

6.2.2 Soil

Current and future on-site commercial, excavation/construction, and landscape workers may be exposed to contaminants in the on-site surface and subsurface soils if contaminants come in contact with the workers through incidental ingestion, dermal and inhalation of fugitive dust. The cancer risks for exposure to soils are summarized in **Tables 7.1** through **7.3** for current scenarios, and in **Tables 7.7** through **7.9** for future scenarios.

6.2.2.1 Subsurface Soil

All cancer risks for identified receptors and pathways through direct contact with subsurface soils at the Former Computer Circuits site were within the USEPA target range of 1×10^{-4} to 1×10^{-6} for cancer risks.

6.2.2.2 Surface Soil

All cancer risks for identified receptors and pathways through surface soils at the Former Computer Circuits site were within the USEPA target range of 1×10^{-4} to 1×10^{-6} for cancer risks.

6.3 Cumulative Health Hazards and Cancer Risks

In this section the cumulative cancer risks and non-cancer health hazards are presented for each receptor group across all media and exposure pathways. Target organs for non-cancer health hazards are indicated, and organ-specific cumulative health hazards are also presented as applicable. These results are summarized in **Tables 9.1** through **9.8**.

6.3.1 Current/Future Off-Site Residents

The future cancer risk to the adult off-site resident (2.14×10^{-3}) and child resident (4.6×10^{-3}) are above the USEPA target range of 1×10^{-4} to 1×10^{-6} . There is an unacceptable cancer risk for the adult and child future hypothetical exposure through the ingestion of tap water, dermal contact with tap water (adult only), and inhalation of vapors while showering.

Future non-cancer health hazards were above 1.0 for the child receptor (12) from exposure to TCE while showering.

6.3.2 Current/Future On-Site Commercial Worker

The cancer risk for the future on-site commercial worker (2.51×10^{-4}) due to the exposure to COPCs in groundwater via ingestion of tap water is outside the USEPA target range of 1×10^{-4} to 1×10^{-6} . In addition, the cancer risk for current and future on-site commercial workers (5.59×10^{-3}) from exposure to indoor air that may be impacted from subsurface soil contamination is outside the USEPA target range of 1×10^{-4} to 1×10^{-6} .

The Hazard Index did not exceed the target of 1 for either pathway.

6.3.3 Current/Future On-Site Excavation/Construction Worker

The cancer risk for the on-site excavation/construction worker (7.3×10^{-7}) due to exposure to COPCs in surface soils is less than the USEPA target range of 1×10^{-4} to 1×10^{-6} .

The exposure from direct contact with subsurface soil (1.1×10^{-6}) due to exposure to COPCs in subsurface soils is within the USEPA target range of 1×10^{-4} to 1×10^{-6} .

The Hazard Index did not exceed the target of 1.

6.3.4 Current/Future On-Site Landscape Worker

The cancer risk for the on-site landscape worker (7.26×10^{-7}) due to exposure to COPCs in surface soils is less than the USEPA target range of 1×10^{-4} to 1×10^{-6} .

The Hazard Index did not exceed the target of 1.0

6.4 Risk Assessment Summary

Tables 9.1 through Table 9.8 provide a summary of COPCs and media. **Tables 10.1 through Table 10.4** provide a summary of COPCs and media that contribute most significantly to potential cancer risks above the USEPA target range of 1×10^{-4} to 1×10^{-6} and/or non-cancer health hazards greater than 1.0.

For future scenarios, adults and children residing downgradient from the Former Computer Circuits site, using contaminated groundwater for drinking and showering are at risk for cancer from exposure to trichloroethene and tetrachloroethene through ingestion of tap water, dermal exposure (adult only), and through inhalation while showering. It is highly unlikely that this risk will ever be realized because of the protections currently in place. Future child residents also have a hazard quotient greater than 1 from exposure to trichloroethene while showering (12).

For both current and future scenarios, commercial workers are at risk for cancer from exposure to trichloroethene and methylene chloride through the inhalation of indoor air and from exposure to trichloroethene and tetrachloroethene through ingestion of tap water.

6.5 Uncertainties

Human health risks posed by a defined set of circumstances may be evaluated quantitatively. The precision of these estimates is dependent on the size and quality of the database and the assumptions one must make to utilize the data in the exposure and risk calculations. The varying degrees of uncertainty associated with the estimation of risk that may result from human exposures have been compensated for throughout the HHRS by making health protective assumptions. Specific areas of uncertainty include the following:

- Analytical database
- Receptor population
- Exposure estimates
- Toxicological data and risk characterization

The uncertainty elements are reviewed in the following sections.

6.5.1 Analytical Database

Uncertainty in the analytical data includes the sampling locations and depth, data collection techniques and sample handling, on-site screening analysis, off-site laboratory analysis and data validation. The objective of the sampling plan was to determine the nature and extent of known or suspected sources and areas of contamination and contaminant plumes. Although this approach provides an adequate characterization of the affected areas, the data sets assembled in this way are biased and may overestimate the concentrations to which receptors are actually exposed. Further, only five surface samples were collected due to most of the site being paved and vegetated, and the fact that the surface soil was not thought to be impacted by the leaching pools.

No data were available for off-site groundwater in the vicinity of the identified receptors; i.e. municipal supply well, hypothetical residential well. This was due to the distances involved (2,000 ft to nearest residence, 3,900 ft. to supply well), and the presence of multiple off-site sources of the identified COPCs. To accommodate this omission, on-site and near-site data were assumed to be representative of exposure concentrations in tap water. This grossly overestimates the chemical intake associated with off-site groundwater.

The statistical analysis of the data introduces some additional uncertainty. The EPC concentrations used in the exposure assessment are based on 95% UCLs of the mean, or the maximum concentration. These provide a conservative estimate of the true average concentration, and, as such, may overestimate the potential exposure.

The use of one-half the SQL to estimate concentrations of compounds that were not detected in a sample introduces a degree of uncertainty in the RA. This may overestimate or underestimate concentrations and any potential risks associated with exposures to these compounds.

Background Concentrations are not considered when screening or evaluating COPCs. EPA may be concerned with two types of background: naturally occurring and anthropogenic. Natural background is limited to metals while anthropogenic (i.e., human made, non site sources) includes both organic and inorganic contaminants. The background for arsenic in the Eastern USA ranges from 3 to 12 parts per million which is above the maximum concentration detected at the Site. Evaluating chemicals that are below or within background concentrations may overestimate risks and hazards associated with site-related compounds..

The laboratory analyses were performed under the New York State Analytical Services Protocol as approved in the Work Plan. For certain organic chemicals in groundwater, the detection levels were greater than the appropriate PRGs. This may result in risks being underestimated.

6.5.2 Receptor Population

The selection of receptors in the HHRA assumes that the same worker will be present at the Site during the entire period of the assigned activity (i.e., landscaping, excavation, construction). However, it is more likely that a variety of workers from different crafts will be present on varying schedules. Furthermore, the same landscape crew is rarely on the same project for more than one season.

In the case of off-site receptors, exposure point concentrations are based on the data from on-site and near site samples and are not representative of off-site concentrations, much less actual exposure concentrations. A number of other assumptions were associated with this approach:

- It is a conservative assumption to assume that COPCs present on the Former Computer Circuits site would reach the Falcon Drive wellfield. Source water modeling performed by the SCDHS indicates that the Former Computer Circuits Site is located outside of the supply well capture zone.
- The Falcon Drive wellfield has a treatment system in operation to remove VOC contaminants originating from a New York State Department of Environmental Conservation (NYSDEC) Class II inactive hazardous waste (State Superfund) site located at 100 Oser Avenue. If it were possible for contaminants leaving the Former Computer Circuits site to reach the wellfield, they would be removed by the treatment system prior to distribution.
- All municipal supply wells in Suffolk County, including the Falcon Drive Wellfield, are periodically monitored by the purveyor to assure water quality as required by the Suffolk County Department of Health Services (SCDHS). If contaminants were detected in the water supply they would not be released to the community through the distribution system.
- When a contaminant plume intersects a supply well the concentration at the wellhead will be diluted with respect to the average concentration of the plume. The magnitude of dilution will be dictated by the cross-sectional area of the plume perpendicular to the direction of groundwater flow, the properties of the aquifer and the pumping rate. A typical dilution ratio for a supply well in Suffolk County is 100 to 1.
- Attenuation will occur during transport from the Former Computer Circuits site to the Falcon Drive wellfield approximately 3,900 feet away, or a hypothetical residential well located a minimum of 2,000 feet away. At a minimum, transport mechanisms will include advection and dispersion. Some level of degradation and adsorption are also probable in the case of VOCs.
- It is a conservative assumption to assume that COPCs present on the Former Computer Circuits site would reach a hypothetical future residential well downgradient of the site. The residential subdivision downgradient of the site (2,000

feet) is served by municipal water. There are no documented private wells in this subdivision, and the installation of a private well is prohibited by the Suffolk County Department of Health Services (SCDHS). According to the Private Water System Standards (SCDHS, July, 1992) section 406.4-11: "All applications to install or use a private water system must include evidence satisfactory to the department that a community water system is not available."

- The source water zone of a typical residential private well on Long Island is very narrow (<50 feet). For a private well to intercept a hypothetical plume from the site, it would have to be precisely located.
- The off-site exposure scenarios also assume that off-site impacts will continue unabated at on-site concentrations for 6 (child) to 30 years (adult).

6.5.3 Exposure Estimates

The exposure assessment utilizes mathematical models that assume that the constituents of potential concern are in a form in which they are readily available for the potential receptors to be exposed.

These models are helpful in providing a numerical approximation of a biological system's response given a particular set of input conditions and constraints. Any attempt to model a biological system incorporates some degree of uncertainty. Some of the key assumptions are stated here to illustrate the consistently health-protective bias built into the assumptions to compensate for uncertainty.

Finite quantities of constituents are present in the soil and groundwater at the site. Constituent concentrations will tend to undergo attenuation over a period of years as a result of processes such as degradation by naturally occurring organisms. The exposure assessment does not take this potential into account.

The bioavailability of a chemical in water is dependent on the ionization state of that chemical. For dermal absorption, the nonionized forms are more available than the ionized form, but the total groundwater concentrations are used resulting in an overestimation of exposure. For soil, the event time (24 hours) assumes that no washing occurs and the soil remains on the skin for 24 hours; thus exposures are overestimated.

The volatilization factor and particulate efficiency factor overestimate risks. The volatilization factor assumes all contamination is at the surface. At this site, no VOCs were COPCs in surface soil. The PEF includes the premise that surface contamination provides a relatively continuous and constant potential emission rate based on wind erosion. These models both overestimate exposure due to weather conditions in the northeast. Given the amount of rain and snow cover for this region, the exposure duration would not be constant. In addition, much of the site is paved and the surface and subsurface soils are not exposed.

The evaluation of a child for the showering scenario may overestimate risks from volatilization. Although there is volatilization from the spigot of a bathtub, the bath is generally drawn prior to the child being in the tub. Furthermore, the water does not flow for the duration of the bath.

The exposure time and durations are overestimated. The numbers used are conservative given that work in today's economy, people rarely stay at one job for 25 years, construction work is generally slowed or stopped over the winter months, and the same landscaper is rarely at the same location for more than one year (and works only 2 to 3 hours per site.)

6.5.4 Toxicological Data and Risk Characterization

Although the uncertainties described above may affect the quantitative risk determination, the overriding uncertainties associated with the risk characterization are:

The extrapolation of toxic or carcinogenic effects observed at the high doses necessary to conduct animal studies to the effects that might occur at much lower "real world" human intake.

The extrapolation from toxic effects in animals to toxic effects in humans (i.e., responses of animals may be different from responses of humans).

The toxicity assessment relies upon the use of toxicity values (carcinogenic SF, non-carcinogenic RfDs or RfCs) developed by the USEPA. These values are largely estimated from laboratory animal data which are then adjusted to account for differences in a human subject and to include a conservative safety factor. The uncertainty of extrapolating dose-response data from animals to humans with the application of multiple safety factors (10 to 10,000 or more) is likely to be several orders of magnitude. This process tends to overestimate risks.

Toxicity values are not available for all COPCs and health risks/hazards cannot be quantitatively assessed for all of the constituents listed under every exposure route that may underestimate risk in such circumstances.

The carcinogen toxicity values, SFs, are derived from dose-response data that may be several orders of magnitude higher than the estimated CDIs in the exposure assessment. The uncertainties associated with this methodology include:

- The extrapolation of observed carcinogenic effects at high doses (possibly resulting in saturation effects in certain biological systems) used in animal cancer studies to possible cancer effects at substantially lower doses is based on the hypothesis that there is no threshold dose for carcinogens.
- The use of a linearized multistage extrapolation model that provides a mathematical

approximation of the dose response slopes designed to define the highest upper bound risk condition.

- The extrapolation of carcinogenic and non-carcinogenic effects in animals to effects in humans may not be appropriate for all constituents, particularly if there are large species differences in metabolism of the constituent.
- While the USEPA has established a weight-of-evidence classification for carcinogens, the cancer risk algorithm does not utilize this weight-of-evidence, and sums all carcinogen risks equally, whether a COPC is a known human carcinogen or only a suspect carcinogen.

Each of these uncertainty factors tends to overestimate risk. There are also questions concerning the summation of cancer risks when different constituents have specific target organs or cause different states of disease.

The toxicity values used to estimate chronic dosages responsible for non-cancer health effects also have several important limitations. Non-cancer health effects are assumed to occur in a dose-response manner following the exceedance of a threshold dose (reference dose or concentration). If the RfD is exceeded ($HI=1$) the exposure is considered hazardous. In this case, the HI can only be used to qualitatively rank the possibility of adverse non-cancer health effects occurring. The following uncertainties are present with the use of the hazard index to describe non-cancer health hazards:

RfDs are derived from NOAEL or LOAEL dose rates determined from animal studies or human exposure investigations. Depending on the quality of the available data, the NOAEL or LOAEL is divided by an uncertainty factor ranging from 1 to 10,000. Large uncertainty factors used in extrapolating animal effects to human effects may over-estimate non-cancer hazards.

The HI approach has several limitations which must be acknowledged. It is important to note that both the HQ and HI are ratios, and after unity has been exceeded, the magnitude of the index has little bearing on the potential severity of adverse effects that may be anticipated. In this case the level of concern does not increase in a linear manner because the RfDs do not have equal accuracy or precision and are not based on the same severity of effect. In addition, the hazard index may sum hazard quotients with RfDs of varying levels of confidence, that include different uncertainty adjustments and modifying factors.

It may also be inappropriate to sum non-cancer HQs for constituents that are not expected to induce the same type of effects or that do not act by the same mechanism or affect the same organ system. This is generally only a concern when the HI is above unity as a consequence of summing several hazard quotients of similar value.

7.0 SUMMARY AND RECOMMENDATIONS

The objective of this human health risk assessment was to assess potential human health risks associated with chemical contaminants originating on the property through the evaluation of carcinogenic and non-carcinogenic hazards to human populations.

This risk assessment evaluated potential COPC exposures to the on-site employees of a business which occupies the property, on-site excavation/construction workers which may be called to the site to upgrade or make repairs to underground utility conduits and on-site landscape workers mowing or raking the vacant area behind the building. Additionally, potential COPC exposure was evaluated for off-site residents using water from the Falcon Drive Wellfield or a hypothetical future private well.

The identified COPC's included tetrachloroethene, trichloroethene, iron, manganese, nickel and chromium VI in groundwater, trichloroethene, benzo(a)pyrene and arsenic in subsurface soil, N-nitroso-di-n-propylamine, benzo(a)pyrene and arsenic in surface soil, and six VOCs in indoor air (1,1,1-trichloroethane, 1,2-dichloroethane, chloromethane, methylene chloride, trichloroethane, vinyl chloride, and acetone).

Cumulative cancer risks to current and future construction/excavation worker and on-site landscape workers were all within the USEPA target range of 1×10^{-4} to 1×10^{-6} . In addition the total health hazard (HI) across all media and exposure routes for each of these groups was below 1.0.

Potential cancer risks were indicated for the future off-site resident child and adult through the ingestion of tap water, dermal contact with tap water, and inhalation of volatiles while showering, primarily due to trichloroethene. The health hazard index of 1.0 was exceeded for the future child resident from inhalation exposure to trichloroethene while showering.

It is extremely unlikely that trichloroethene detected in soil and groundwater at the site would reach the Falcon Drive wellfield at site-derived EPC levels. If it did reach the wellfield it would not be possible for it to be distributed to area residences and businesses due to standard monitoring requirements and existing treatment operations. This does not eliminate the possibility of a potable well being installed in the residential area at some point in the future, though this is a very unlikely scenario. It is unusual for a domestic potable well to be installed within a residential development when all homes are already tapped into the municipal supply system. On the rare occasions when this does occur, the well is usually used exclusively for lawn irrigation. In addition, the installation of a private well in a residential area with access to a municipal water supply is prohibited by the SCDHS (Private Water Systems Standards, SCHS 7/92). Furthermore, impact to a hypothetical future well would require that the well be perfectly positioned to intersect the path of the contaminants, and that no attenuation occurs during the 2,000 foot plus transport. Still, remedial action objectives that address trichloroethene in groundwater and in on-site soils that would reduce the possibility of off-site migration, and are recommended.

The cancer risk for the future on-site commercial worker (2.5×10^{-4}) due to the exposure to COPCs in tap water is outside the USEPA target range of 1×10^{-4} to 1×10^{-6} . In addition current and future cancer risks for the on-site commercial worker (5.5×10^{-3}) due to exposure to COPCs in indoor air that may be impacted from contaminated subsurface soils is also outside the USEPA target range of 1×10^{-4} to 1×10^{-6} . The exposure from direct contact with surface and subsurface soil for all receptor populations that were evaluated is less than the USEPA target range of 1×10^{-4} to 1×10^{-6} .

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Risk Assessment Information System, www.risk.lsd.ornl.gov/rap_hp.shtml ,Last visited 12/12/02;

USEPA Soil Screening Calculations, www.risk.lsd.ornl.gov/calc_start.htm , Last visited 12/12/02;

USEPA Integrated Risk Information System (IRIS), www.epa.gov/iris/index.html , Last visited 10/15/04;

TABLES

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Groundwater	Groundwater	Aquifer - Tap Water	Resident	Adult	Dermal	Off-site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
						Ingestion	Off-site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
					Child	Dermal	Off-site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
						Ingestion	Off-site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
				Commercial Worker	Adult	Ingestion	Off-site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
		Air	Aquifer - Water Vapors at Shower Head	Resident	Adult	Inhalation	Off-Site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
					Child	Inhalation	Off-Site	None	Supply well in area which provides water to residences & businesses is monitored quarterly by SCDHS
				Resident	Adult	Inhalation	Off-Site	Quant.	Residential area downgradient of site
					Child	Inhalation	Off-Site	Quant.	Residential area downgradient of site
					Adult	Inhalation	On/Off-Site	None	Depth to water approximately 100 ft. in commercial area
	Subsurface Soil	Subsurface Soil	Direct contact with soil	Commercial Worker	Adult	Ingestion	On-Site	Qual.	Exposure will be less than construction worker, therefore no quantitative evaluation (Risk<10-6)
						Dermal	On-Site	Qual	Exposure will be less than construction worker, therefore no quantitative evaluation (Risk<10-6)
						Inhalation	On-Site	Qual	Exposure will be less than construction worker, therefore no quantitative evaluation (Risk<10-6)
				Excavation/ Construction Worker	Adult	Ingestion	On-Site	Quant	Potential for contact with subsurface soil (2-20 ft)
Future		Air	Volatilization to Ambient Air	Commercial Worker	Adult	Inhalation	On-Site	Quant.	Potential for contact with subsurface soil (2-20 ft)
				Excavation/ Construction Worker	Adult	Inhalation	On-Site	Quant.	Potential for contact with subsurface soil (2-20 ft)
						Inhalation	On-Site	Quant.	Potential for impacted soil beneath building
						Inhalation	On-Site	Quant.	Potential for impacted soil to be inhaled during excavation activities
	Surface Soil	Surface Soil	Direct contact with soil	Excavation/ Construction Worker/ Landscaper	Adult	Ingestion	On-Site	Quant.	Shallow excavation or other disturbance in non-paved areas
						Dermal	On-Site	Quant.	Shallow excavation or other disturbance in non-paved areas
						Dust Inhalation	On-Site	Quant.	Shallow excavation or other disturbance in non-paved areas
					Adult	Inhalation	On-Site	Quant.	Potential for inhalation of VOCs in indoor air
	Air	Air	Indoor Air	Commercial Worker	Adult	Dermal	Off-site	Quant.	Supply well to provide water to residences & businesses could be impacted during the foreseeable future
	Groundwater	Groundwater	Aquifer - Tap Water	Resident		Ingestion	Off-site	Quant.	Supply well to provide water to residences & businesses could be impacted during the foreseeable future
					Child	Dermal	Off-site	Quant.	Supply well to provide water to residences & businesses for foreseeable future
						Ingestion	Off-site	Quant.	Supply well to provide water to residences & businesses for foreseeable future
		Air	Aquifer - Water Vapors at Shower Head	Commercial Worker	Adult	Inhalation	Off-Site	Quant.	Supply well to provide water to residences & businesses for foreseeable future
					Child	Inhalation	Off-Site	None	Assumption that children take baths rather than showers
				Resident	Adult	Inhalation	Off-Site	Quant.	Residential area downgradient of site
					Child	Inhalation	Off-Site	Quant.	Residential area downgradient of site
				Commercial Worker	Adult	Inhalation	On/Off-Site	None	Depth to water approximately 100 ft. in commercial area
						Ingestion	On-Site	Quant	Potential for contact with subsurface soil (2-20 ft)
						Dermal	On-Site	Quant.	Potential for contact with subsurface soil (2-20 ft)
	Subsurface Soil	Subsurface Soil	Direct contact with soil	Excavation/ Construction Worker		Inhalation	On-Site	Quant.	Potential for contact with subsurface soil (2-20 ft)
				Remediation Worker	Adult	Ingestion	On-Site	Qual	Exposure will be less than construction worker, therefore no quantitative evaluation (Risk<10-6)
						Dermal	On-Site	Qual	Exposure will be less than construction worker, therefore no quantitative evaluation (Risk<10-6)
						Inhalation	On-Site	Qual.	Exposure will be less than construction worker, therefore no quantitative evaluation (Risk<10-6)
		Air	Volatilization to Ambient Air	Commercial Worker	Adult	Inhalation	On-Site	Quant	Potential for impacted soil beneath building
				Excavation/ Construction Worker	Adult	Inhalation	On-Site	Quant.	Potential for impacted soil to be inhaled during excavation activities
				Construction Worker	Adult	Ingestion	On-Site	Quant.	Shallow excavation or other disturbance in non-paved areas
						Dermal	On-Site	Quant.	Shallow excavation or other disturbance in non-paved areas
	Surface Soil	Surface Soil	Direct Contact with soil	Construction Worker/ Landscaper		Dust Inhalation	On-Site	Quant	Shallow excavation or other disturbance in non-paved areas
				Trespasser			On-Site	Qual.	The exposure is less than the landscaper, therefore, no quantitative evaluation (Less than 10-6 risk)

TABLE 2.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Computer Circuits

Scenario Timeframe: Medium: Groundwater Exposure Medium: Groundwater		CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Screening Toxicity Value (N/C) (4)	Potential ARAP/TBC Value	Potential ARAP/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Tap Water		107-06-2	1,1 - Dichloroethane	1J	5	ug/L	MW-11	18/38	81 N			No	BSL
		75-35-4	1,1 - Dichloroethene	1J	16	ug/L	MW-11	14/38	34 N			No	BSL
		71-55-6	1,1,1 - Trichloroethane	1J	150	ug/L	MW-11	36/38	320 N			No	BSL
		79-00-5	1,1,2 - Trichloroethane	5J	100	ug/L	MW-8	1/38	0.2 C			No	IFD
		107-06-2	1,2 - Dichloroethane	3J	100	ug/L	MW-4	1/38	0.12 C			No	IFD
		540-59-0	1,2 Dichloroethene (total)	2J	8J	ug/L	MW-11	17/38	12 N			No	BSL
		75-15-0	Carbon Disulfide	4J	100	ug/L	VP-4	1/38	100 N			No	BSL
		67-66-3	Chloroform	1J	100	ug/L	MW-2	2/38	6.2 N/C			No	BSL
		76-13-1	Freon - 113	1J	18J	ug/L	VP-4	8/38	5900 N			No	BSL
		127-18-4	Tetrachloroethene	1J	370D	ug/L	MW-11	34/38	0.66C			Yes	ASL
		79-01-6	Trichloroethene	1J	280	ug/L	MW-2	35/38	0.028 C			Yes	ASL
		7429-90-5	Aluminum	13.5B	460	ug/L	MW-10	24/24	3500 N			No	BSL
		7440-39-3	Barium	25.6B	160B	ug/L	MW-4	24/24	260 N			No	BSL
		7440-41-7	Beryllium	0.13B	0.34B	ug/L	MW-7	2/24	7.3 N			No	BSL
		7440-43-9	Cadmium	0.32B	1.5B	ug/L	MW-4	10/24	1.8 N			No	NUT, NTX
		7440-70-2	Calcium	9170	33600	ug/L	MW-4	24/24	none			No	BSL
		7440-47-3	Chromium	2.2B	194	ug/L	MW-8	24/24	550 N/C			No	BSL
		18540-29-9	Chromium VI	30	190	ug/L	MW-8	4/24	110 C			Yes	ASL
		7440-48-4	Cobalt	1.2B	4.5B	ug/L	MW-3	14/24	73 N			No	BSL
		7440-50-8	Copper	1.4B	41.9	ug/L	MW-5	24/24	150 N			No	BSL
		7439-99-6	Iron	18.2B	1340EJ	ug/L	MW-10	24/24	1100			Yes	ASL
		7439-92-1	Lead	0.95B	1.5B	ug/L	MW-2	6/24	none	15 MCL		No	BSL
		7439-95-4	Magnesium	2920B	8410	ug/L	MW-2	24/24	none			No	NUT, NTX
		7439-96-5	Manganese	19.9	3340	ug/L	MW-4	24/24	88 N			Yes	ASL
		7439-97-6	Mercury	0.1U	0.26B	ug/L	MW-8	1/24	1.1 N			No	BSL
		7440-02-0	Nickel	3.3B	75.6	ug/L	MW-4	24/24	73 N			Yes	ASL
		7440-07-9	Potassium	1090B	9360	ug/L	MW-4	24/24	none			No	NUT, NTX
		7782-49-2	Selenium	2B	3.5B	ug/L	MW-9	5/24	18 N			No	BSL
		7440-22-4	Silver	0.8U	0.87B	ug/L	MW-3	1/24	18 N			No	BSL
		7440-23-5	Sodium	12100	36400	ug/L	AR-2	24/24	none			No	NTX
		7440-62-2	Vanadium	0.61B	1.8B	ug/L	MW-10	9/24	26 N			No	BSL
		7440-66-6	Zinc	8.5B	44.9	ug/L	MW-2	17/24	1100 N			No	BSL

(1) Maximum concentration used for screening
(2) To date, no background study has been completed
(3) All chemicals were screened against the Region 9 Preliminary Remediation Goals (PRGs), October 2002 for tap water (HQ=0.1, cancer benchmark 1E-06). Lead was screened against threshold level of 15 ug/L
(4) Rationale codes:
Selection Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Infrequent detection (IFD)
No toxicity information (NTX)
Essential Nutrient (NUT)
Definitions: MCL=Maximum contaminant level
COPC= Chemical of Potential Concern
J=Estimated value
B=Estimated value
C= carcinogenic
N=Noncarcinogenic
U= Not detected
ug/L= microgram per liter

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Computer Circuits

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Air

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (INC) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Volatilization to Ambient Air	107-06-2	1,1 - Dichloroethane	1J	5	ug/L	MW-11	18/38	10 - 10	5		2200			No	BSL
	75-35-4	1,1 - Dichloroethene	1J	16	ug/L	MW-11	14/38	10 - 10	16		190			No	BSL
	71-55-6	1,1,1 - Trichloroethane	1J	150	ug/L	MW-11	36/38	10 - 10	150		3100			No	BSL
	79-00-5	1,1,2 - Trichloroethane	5J	100	ug/L	MW-8	1/38	10 - 10	5		410			No	BSL
	107-06-2	1,2 - Dichloroethane	3J	100	ug/L	MW-4	1/38	10 - 10	3		230			No	BSL
	540-59-0	1,2 Dichloroethene (total)	2J	9J	ug/L	MW-11	17/38	10 - 10	9		210			No	BSL
	75-15-0	Carbon Disulfide	4J	100	ug/L	VP-4	1/38	10 - 10	4		560			No	BSL
	67-66-3	Chloroform	1J	100	ug/L	MW-2	2/38	10 - 10	1		80			No	BSL
	76-13-1	Freon - 113	1J	18J	ug/L	VP-4	8/38	10 - 10	19					No	BSL
	127-18-4	Tetrachloroethene	1J	370D	ug/L	MW-11	34/38	10 - 10	370		0.3			Yes	ASL
	79-01-6	Trichloroethene	1J	280	ug/L	MW-2	35/38	10 - 10	280		5			Yes	ASL
	7429-90-5	Aluminum	13.5B	460	ug/L	MW-10	24/24		460					No	DNV
	7440-39-3	Barium	25.6B	160B	ug/L	MW-4	24/24		160					No	DNV
	7440-41-7	Beryllium	0.13B	0.34B	ug/L	MW-7	2/24	0.1 - 0.1	0.34					No	DNV
	7440-43-9	Cadmium	0.32B	1.5B	ug/L	MW-4	10/24	0.3 - 0.3	1.5					No	DNV
	7440-70-2	Calcium	9170	33600	ug/L	MW-4	24/24		33600					No	DNV
	7440-47-3	Chromium	2.2B	194	ug/L	MW-8	24/24		194					No	DNV
	18540-29-9	Chromium VI	30	190	ug/L	MW-8	4/24	<20 - <20	190					Yes	DNV
	7440-48-4	Cobalt	1.2B	4.5B	ug/L	MW-3	14/24	1 - 1	4.5					No	DNV
	7440-50-8	Copper	1.4B	41.9	ug/L	MW-5	24/24		41.9					No	DNV
	7439-89-6	Iron	18.2B	1340EJ	ug/L	MW-10	24/24		1340					No	DNV
	7439-92-1	Lead	0.95B	1.5B	ug/L	MW-9	6/24	0.9 - 0.9	1.5					No	DNV
	7439-95-4	Magnesium	2820B	8410	ug/L	MW-2	24/24		8410					No	DNV
	7439-96-5	Manganese	19.9	3340	ug/L	MW-4	24/24		3340					No	DNV
	7439-97-6	Mercury	0.1U	0.26B	ug/L	MW-8	1/24	0.1 - 0.1	0.26		0.68			No	BSL
	7440-02-0	Nickel	3.3B	75.6	ug/L	MW-4	24/24		75.6					No	DNV
	7440-07-9	Potassium	1090B	9360	ug/L	MW-4	24/24		9360					No	DNV
	7782-49-2	Selenium	2B	3.5B	ug/L	MW-9	5/24	2 - 2	3.5					No	DNV
	7440-22-4	Silver	0.6U	0.87B	ug/L	MW-3	1/24	0.6 - 0.6	0.87					No	DNV
	7440-23-5	Sodium	12100	36400	ug/L	AR-2	24/24		36400					No	DNV
	7440-62-2	Vanadium	0.61B	1.8B	ug/L	MW-10	9/24	0.6 - 0.6	1.8					No	DNV
	7440-66-6	Zinc	8.5B	44.9	ug/L	MW-2	17/24	7.8 - 7.8	44.9					No	DNV

(1) Maximum concentration used for screening

(2) To date, no background study has been completed

(3) All chemicals were screened against the Region 9 Preliminary Remediation Goals (PRGs), October 2002 for tap water (HQ=0.1, cancer benchmark 1E-06). Lead was screened against the action level of 15 ug/L

(4) Rationale codes:

Selection Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Infrequent detection (IFD)
No toxicity information (NTX)
Essential Nutrient (NUT)

Definitions: =Not Applicable

COPC=Chemical of Potential Concern

MCL=Maximum contaminant level

COPC=Chemical of Potential Concern

J=Estimated value

B=Estimated value

C=carcinogenic

N=Noncarcinogenic

U= Not detected

ug/L= microgram per liter

TABLE 2.3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Computer Circuits

Scenario Timeframe: Medium: Exposure Medium:		CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Volatilization to Indoor Air/ Showerhead Misting	Future Groundwater Air	107-06-2	1,1 - Dichloroethane	1J	5	ug/L	MW-11	18/38	10 - 10	5	NA	2200			No	BSL
		75-35-4	1,1 - Dichloroethene	1J	16	ug/L	MW-11	14/38	10 - 10	16	NA	190			No	BSL
		71-55-6	1,1,1 - Trichloroethane	1J	150	ug/L	MW-11	36/38	10 - 10	150	NA	3100			No	BSL
		79-00-5	1,1,2 - Trichloroethane	5J	100	ug/L	MW-8	1/38	10 - 10	5	NA	410			No	BSL
		107-06-2	1,2 - Dichloroethane	3J	100	ug/L	MW-4	1/38	10 - 10	3	NA	230			No	BSL
		540-59-0	1,2 Dichloroethene (total)	2J	9J	ug/L	MW-11	17/38	10 - 10	9	NA	210			No	BSL
		75-15-0	Carbon Disulfide	4J	100	ug/L	VP-4	1/38	10 - 10	4	NA	560			No	BSL
		67-66-3	Chloroform	1J	100	ug/L	MW-2	2/38	10 - 10	1	NA	80			No	BSL
		76-13-1	Freon - 113	1J	18J	ug/L	VP-4	8/38	10 - 10	19	NA				No	BSL
		127-18-4	Tetrachloroethene	1J	370D	ug/L	MW-11	34/38	10 - 10	370	NA	0.3			Yes	ASL
		79-01-6	Trichloroethene	1J	280	ug/L	MW-2	35/38	10 - 10	280	NA	5			Yes	ASL
		7429-90-5	Aluminum	13.5B	460	ug/L	MW-10	24/24		460	NA				No	DNV
		7440-39-3	Barium	25.6B	160B	ug/L	MW-4	24/24		160	NA				No	DNV
		7440-41-7	Beryllium	0.13B	0.34B	ug/L	MW-7	2/24	0.1 - 0.1	0.34	NA				No	DNV
		7440-43-9	Cadmium	0.32B	1.5B	ug/L	MW-4	10/24	0.3 - 0.3	1.5	NA				No	DNV
		7440-70-2	Calcium	9170	33600	ug/L	MW-4	24/24		33600	NA				No	DNV
		7440-47-3	Chromium	2.2B	194	ug/L	MW-8	24/24		194	NA				No	DNV
		18540-29-9	Chromium VI	30	190	ug/L	MW-8	4/24	<20 - <20	190	NA				Yes	DNV
		7440-48-4	Cobalt	1.2B	4.5B	ug/L	MW-3	14/24	1 - 1	4.5	NA				No	DNV
		7440-50-8	Copper	1.4B	41.9	ug/L	MW-5	24/24		41.9	NA				No	DNV
		7439-89-6	Iron	18.2B	1340EJ	ug/L	MW-10	24/24		1340	NA				No	DNV
		7439-92-1	Lead	0.95B	1.5B	ug/L	MW-9	6/24	0.9 - 0.9	1.5	NA				No	DNV
		7439-95-4	Magnesium	2920B	8410	ug/L	MW-2	24/24		8410	NA				No	DNV
		7439-96-5	Manganese	19.9	3340	ug/L	MW-4	24/24		3340	NA				No	DNV
		7439-97-6	Mercury	0.1U	0.26B	ug/L	MW-8	1/24	0.1 - 0.1	0.26	NA	0.68			No	BSL
		7440-02-0	Nickel	3.3B	75.6	ug/L	MW-4	24/24		75.6	NA				No	DNV
		7440-07-9	Potassium	1090B	9360	ug/L	MW-4	24/24		9360	NA				No	DNV
		7782-49-2	Selenium	2B	3.5B	ug/L	MW-9	5/24	2 - 2	3.5	NA				No	DNV
		7440-22-4	Silver	0.6U	0.87B	ug/L	MW-3	1/24	0.6 - 0.6	0.87	NA				No	DNV
		7440-23-5	Sodium	12100	36400	ug/L	AR-2	24/24		36400	NA				No	DNV
		7440-62-2	Vanadium	0.61B	1.8B	ug/L	MW-10	9/24	0.6 - 0.6	1.8	NA				No	DNV
		7440-66-6	Zinc	8.5B	44.9	ug/L	MW-2	17/24	7.8 - 7.8	44.9	NA				No	DNV

(1) Maximum concentration used for screening

(2) To date, no background study has been completed

(3) All chemicals were screened against the Region 9 Preliminary Remediation Goals (PRGs), October 2002 for tap water (HQ=0.1, cancer benchmark 1E-06). Lead was screened against the action level of 15 ug/L

(4) Rationale codes:

Selection Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Infrequent detection (IFD)
No toxicity information (NTX)
Essential Nutrient (NUT)

Definitions: -Not Applicable

COPC=Chemical of Potential Concern

MCL=Maximum contaminant level

COPC= Chemical of Potential Concern

J=Estimated value

B=Estimated value

C= carcinogenic

N=Noncarcinogenic

U= Not detected

ug/L = microgram per liter

TABLE 2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Computer Circuits

Scenario Timeframe: Future
Medium: Subsurface soil
Exposure Medium: Subsurface soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Direct contact	107-06-2	1,1 - Dichloroethane	0.001J	0.036	mg/kg	SB-26	3/30	0.005-0.014	0.036		170 N			No	BSL
	75-35-4	1,1 - Dichloroethane	0.001J	0.014U	mg/kg	SB-10	1/30	0.005-0.014	0.001		41 N			No	BSL
	71-55-6	1,1,1 - Trichloroethane	0.002J	0.058	mg/kg	SB-10	10/30	0.005-0.014	0.058		120 N			No	BSL
	79-00-5	1,1,2 - Trichloroethane	0.002J	0.014U	mg/kg	SB-10	1/30	0.005-0.014	0.002		1.6 C			No	BSL
	156-60-5	1,2 - Dichloroethane (total)	0.001J	3.3	mg/kg	SB-8	11/30	0.005-0.014	3.3		23 N			No	BSL
	78-93-3	2-Butanone	0.006J	20	mg/kg	SB-8	3/30	0.005-0.014	20		2700 N			No	BSL
	106-10-1	4 - Methyl - 2 - pentanone	0.001J	0.0014U	mg/kg	SDB-1	1/30	0.005-0.014	0.001		280 N			No	BSL
	67-64-1	Acetone	0.005J	0.054	mg/kg	SB-8	21/30	0.005-0.024	0.054		600 N			No	BSL
	67-66-3	Chloroform	0.001J	0.014U	mg/kg	SB-15	1/30	0.005-0.014	0.001		12 N/C			No	BSL
	75-09-2	Methylene Chloride	0.002J	0.024U	mg/kg	SB-15	1/30	0.003-0.028	0.002		21 C			No	BSL
	127-18-4	Tetrachloroethene	0.003J	0.06	mg/kg	SDB-1	10/30	0.008-0.014	0.06		3.4 C			No	BSL
	108-88-3	Toluene	0.008U	0.13	mg/kg	SB-9	1/30	0.005-0.014	0.13		52 N			No	BSL
	79-01-6	Trichloroethene	0.002J	550	mg/kg	SDB-3	25/30	0.008-0.014	55		0.11 C			Yes	ASL
	1330-20-7	Xylenes (total)	0.008J	0.014U	mg/kg	SB-6	1/30	0.005-0.014	0.008		42 N			No	BSL
	91-57-6	2-Methylnaphthalene	0.036J	0.22J	mg/kg	SDB-3	3/30	0.340-0.410	0.22		none			No	NTX
	95-49-7	2-Methylphenol	0.1J	0.14J	mg/kg	SB-47	2/30	0.340-0.410	0.14		3100 N			No	BSL
	605-20-2	2,6-Dinitrotoluene	0.32J	0.41U	mg/kg	SB-9	1/30	0.340-0.410	0.32		62 N			No	BSL
	93-32-9	Acenaphthene	0.048J	0.057	mg/kg	SB-35	3/30	0.340-0.410	0.057		2800 N			No	BSL
	120-12-7	Anthracene	0.081J	0.31	mg/kg	SB-2	3/30	0.340-0.410	0.31		10000 N			No	BSL
	56-55-3	Benzo (a) anthracene	0.038J	1	mg/kg	SB-35	6/30	0.340-0.410	1		2.1 C			No	BSL
	50-32-8	Benzo (a) pyrene	0.043J	1.2	mg/kg	SB-35	7/30	0.340-0.410	1.2		0.21 C			Yes	ASL
	205-99-2	Benzo (b) fluoranthene	0.15J	1	mg/kg	SB-35	5/30	0.340-0.410	1		2.1 C			No	BSL
	191-24-2	Benzo (g,h,i) perylene	0.063J	0.6	mg/kg	SB-35	4/30	0.340-0.410	0.6		none			No	NTX
	207-08-9	Benzo (k) fluoranthene	0.34J	1.2	mg/kg	SB-35	2/30	0.340-0.410	1.2		21 C			No	BSL
	117-81-7	Be (2-ethylhexyl) phthalate	0.09J	4.1	mg/kg	SDB-3	18/30	0.340-0.650	4.1		120 C			No	BSL
	85-68-7	Butylbenzyl phthalate	0.046J	16	mg/kg	SB-45	12/30	0.340-0.410	16		10000 N			No	BSL
	96-74-8	Carbozole	0.24J	0.41U	mg/kg	SB-35	1/30	0.340-0.410	0.24		8.6 N			No	BSL
	218-01-9	Chrysene	0.072J	1.6	mg/kg	SB-35	7/30	0.340-0.410	1.6		210 C			No	BSL
	53-70-3	Dibenzo (a,h) anthracene	0.31J	0.41U	mg/kg	SB-35	1/30	0.340-0.410	0.31		0.21 C			No	IFD
	132-64-9	Dibenzofuran	0.340U	0.042	mg/kg	SB-2	1/30	0.340-0.410	0.042		310 N			No	BSL
	84-66-2	Diethylphthalate	0.074J	0.11J	mg/kg	SDB-1	2/30	0.340-0.410	0.11		10000 N			No	BSL
	84-74-2	Di-n-butyl phthalate	0.041J	1.2	mg/kg	SDB-3	8/30	0.340-0.410	1.2		6200 N			No	BSL
	86-73-7	Fluorene	0.04J	0.078J	mg/kg	SB-35	2/30	0.340-0.410	0.078		2600 N			No	BSL
	206-44-0	Fluoranthene	0.079J	2.6	mg/kg	SB-35	7/30	0.340-0.410	2.6		2200 N			No	BSL
	193-39-5	Indeno (1,2,3-cd) pyrene	0.051J	0.65	mg/kg	SB-35	3/30	0.340-0.410	0.65		2.1 C			No	BSL
	78-59-1	Isophorone	0.1J	1.5	mg/kg	SDB-3	3/30	0.340-0.410	1.5		180 N			No	BSL
	91-20-3	Naphthalene	0.045J	0.15J	mg/kg	SDB-3	4/30	0.340-0.410	0.19		19 N			No	BSL
	85-01-8	Phenanthrene	0.047J	1.5	mg/kg	SB-35	6/30	0.340-0.500	1.5		none			No	NTX
	108-95-2	Phenol	0.13J	0.23J	mg/kg	SB-6	7/30	0.340-0.410	0.23		10000 N			No	BSL
	129-00-0	Pyrene	0.057J	1.9	mg/kg	SB-35	7/30	0.340-0.410	1.9		5400 N			No	BSL
	7429-90-5	Aluminum	680	8470	mg/kg	SB-8	30/30		8470		10000 N			No	BSL
	7440-36-0	Antimony	0.48BNJ	0.89BNJ	mg/kg	SB-14	2/30	0.24-0.54	0.89		41 N			No	BSL
	7440-38-2	Arsenic	0.25BNJ	4.4BNJ	mg/kg	SDB-1	30/30		4.4		1.6 C			Yes	ASL
	7440-39-3	Barium	5BN	22.1	mg/kg	SB-18	30/30		22.1		6700 N			No	BSL
	7440-41-7	Beryllium	0.06B	0.33B	mg/kg	SB-18	30/30		0.33		1900 C			No	BSL
	7440-43-9	Cadmium	0.063B	3	mg/kg	SDB-3	3/30	0.022-0.047	3		45 N			No	BSL
	7440-70-2	Calcium	83.6	46800	mg/kg	SCB-1	30/30		46800		none			No	NUT,NTX
	7440-47-3	Chromium	3.2	34.7	mg/kg	SCB-4	29/29		34.7		450 N/C			No	BSL
	7440-48-4	Cobalt	0.67B	6.2	mg/kg	SB-17	29/30	0.28-0.28	6.2		190 N			No	BSL
	7440-50-8	Copper	2.1B	12300	mg/kg	SCB-1	30/30		12300		4100N			No	BSL
	7439-89-6	Iron	2030	10700	mg/kg	SB-18	29/29		10700		10000 N			No	BSL
	7439-92-1	Lead	1.2	154	mg/kg	SCB-1	30/30		154		400*			No	BSL
	7439-95-4	Magnesium	155B	26600	mg/kg	SCB-1	30/30		26600		none			No	NUT,NTX
	7439-96-5	Manganese	26.9	188	mg/kg	SB-18	30/30		188		1920 N			No	BSL
	7440-02-0	Nickel	1B	165	mg/kg	SCB-1	30/30		165		2030 N			No	BSL
	7440-07-9	Potassium	102B	386B	mg/kg	SDB-3	30/30		386		none			No	NUT,NTX
	7782-49-2	Selenium	0.21B	1#	mg/kg	SCB-3	23/30	0.21-0.38	1		510 N			No	BSL
	7440-22-4	Silver	0.11B	168BEJ	mg/kg	SDB-3	6/30	0.064-0.093	168		510 N			No	BSL
	7440-23-5	Sodium	21.3BEJ	165BEJ	mg/kg	SB-31	30/30		165		none			No	NUT,NTX
	7440-28-0	Thallium	0.23B	0.63B	mg/kg	SDB-3	11/30	0.21-0.31	0.63		6.7 N			No	BSL
	7440-31-5	Tin	1.5BNJ	282N	mg/kg	SCB-1	30/30		282		10000 N			No	BSL
	7440-62-2	Vanadium	2.9B	21	mg/kg	SDB-1	30/30		21		720 N			No	BSL
	7440-66-6	Zinc	2.8#	90.9#	mg/kg	SDB-3	30/30		90.9		10000N			No	BSL

(1) Maximum concentration used for screening

(2) To date, no background study has been completed

(3) All chemicals were screened against the Region 9 Preliminary Remediation Goals (PRGs), October 2002 for tap water (HQ=0.1, cancer benchmark 1E-06). Lead was screened against the action level of 15 ug/L

(4) Rationale codes:

Selection Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Infrequent detection (IFD)
No toxicity information (NTX)
Essential Nutrient (NUT)

Definitions: #Not Applicable

COPC=Chemical of Potential Concern

MCL=Maximum contaminant level

COPC= Chemical of Potential Concern

J=Estimated value

B=Estimated value

C= carcinogenic

N=Noncarcinogenic

U= Not detected

ug/L= microgram per liter

TABLE 2.5
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Computer Circuits

Scenario Timeframe: Future
Medium: Surface soil
Exposure Medium: Surface soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Direct Contact	78-93-3	2- Butanone	0.008J	0.009U	mg/kg	SF10	1/5	0.008-0.009	0.008		2700 N			No	BSL
	67-64-1	Acetone	0.018	0.036	mg/kg	SF-10	5/5		0.036		600N			No	BSL
	108-88-3	Toluene	0.002J	0.010U	mg/kg	SFDB4	1/5	0.008-0.010	0.002		52 N			No	BSL
	79-01-6	Trichloroethene	0.002J	0.003J	mg/kg	SF6	2/5	0.008-0.010	0.003		0.11 C			No	BSL
	83-32-9	Acenaphthene	0.099J	0.370U	mg/kg	SF-6	1/5	0.350-0.370	0.099		2900 N			No	BSL
	120-12-7	Anthracene	0.04J	0.22J	mg/kg	SF6	3/5	0.350-0.370	0.22		10000 N			No	BSL
	56-55-3	Benzo (a) anthracene	0.2J	1.2	mg/kg	SF6	4/5	0.350-0.350	1.2		2.1 C			No	BSL
	50-32-8	Benzo (a) pyrene	0.24J	1.3	mg/kg	SF6	4/5	0.350-0.350	1.3		0.21 C			Yes	ASL
	205-99-2	Benzo (b) fluoranthene	0.32J	1.8J	mg/kg	SF6	4/5	0.350-0.350	1.8		2.1 C			No	BSL
	191-24-2	Benzo (g,h,i) perylene	0.15J	0.64J	mg/kg	SF6	4/5	0.350-0.350	0.64		none			No	NTX
	207-08-9	Benzo (k) fluoranthene	0.39	0.98	mg/kg	SF6	3/5	0.350-0.370	0.98		21 C			No	BSL
	117-81-7	Bis (2-ethylhexyl) phthalate	0.16J	2.9	mg/kg	SF6	5/5		2.9		120 C			No	BSL
	85-68-7	Butyl benzyl phthalate	0.052J	1.4	mg/kg	SF6	5/5		1.4		10000 N			No	BSL
	86-74-8	Carbazole	0.220J	0.370U	mg/kg	SF6	1/5	0.350-0.370	0.22		86 C			No	BSL
	218-01-9	Chrysene	0.39J	2.5	mg/kg	SF6	4/5	0.350-0.350	2.5		210 C			No	BSL
	132-64-9	Dibenzofuran	0.047J	0.370U	mg/kg	SF-6	1/5	0.350-0.370	0.047		310 N			No	BSL
	84-74-2	Di-n-butyl phthalate	0.350U	0.36J	mg/kg	SF-6	1/5	0.350-0.370	0.36		6200 N			No	BSL
	117-84-0	Di-n-octyl phthalate	0.047J	0.370U	mg/kg	SF-6	2/5	0.350-0.370	0.14		2500 N			No	BSL
	86-73-7	Fluorene	0.095J	0.370U	mg/kg	SF-6	1/5	0.340-0.370	0.095		2600 N			No	BSL
	206-44-0	Fluoranthene	0.045J	3	mg/kg	SF6	5/5		3		2200 N			No	BSL
	193-39-5	Indeno (1,2,3-cd) pyrene	0.15J	0.71	mg/kg	SF6	4/5	0.350-0.350	0.71		2.1 C			No	BSL
	78-59-1	Isophorone	0.350U	14	mg/kg	SF-6	1/5	0.350-0.370	14		180 N			No	BSL
	621-64-7	N-Nitroso-di-n-propylamine	0.290J	0.32	mg/kg	SF-10	1/5	0.350-0.380	0.32		0.25 C			Yes	ASL
	91-20-3	Naphthalene	0.04J	0.06J	mg/kg	SF-10	5/5		0.06		19 N			No	BSL
	85-01-8	Phenanthrene	0.18J	1.6	mg/kg	SF-6	4/5	0.350-0.350	1.6		none			No	NTX
	108-95-2	Phenol	0.19J	0.25	mg/kg	SF-10	5/5		0.25		10000 N			No	BSL
	129-00-0	Pyrene	0.4	2.3	mg/kg	SF-6	4/5	0.350-0.350	2.3		5400 N			No	BSL
	7429-90-5	Aluminum	2340	5370	mg/kg	SF-10	5/5		5370		10000 N			No	BSL
	7440-36-0	Antimony	0.49UNJ	2.5BNJ	mg/kg	SF-6	1/5	0.49-0.52	2.5		41 N			No	BSL
	7440-38-2	Arsenic	1.5	2.1	mg/kg	SF-10, SF-12	5/5		2.1		1.6 A			Yes	ASL
	7440-39-3	Barium	9.5B	14.5B	mg/kg	SF-6	5/5		14.5		6700 N			No	BSL
	7440-41-7	Beryllium	0.072B	0.17B	mg/kg	SF-10	5/5		0.17		190 N			No	BSL
	7440-70-2	Calcium	240B	26800	mg/kg	SF-11	5/5		26800		none			No	NUT, NTX
	7440-47-3	Chromium	4.6	8	mg/kg	SF-6	5/5		8		45 N/C			No	BSL
	7440-48-4	Cobalt	1.2B	2.5BNJ	mg/kg	SF-10	5/5		2.5		190 N			No	BSL
	7440-50-8	Copper	18.1	1250	mg/kg	SF-12	5/5		1250		4100N			No	BSL
	7439-89-6	Iron	3610	6750	mg/kg	SF-10	5/5		6750		10000 N			No	BSL
	7439-92-1	Lead	8NJ	350NJ	mg/kg	SF-6	5/5		350			400		No	BSL
	7439-95-4	Magnesium	377B	926B	mg/kg	SF-11	5/5		926		none			No	NUT, NTX
	7439-96-5	Manganese	54.2	119	mg/kg	SF-10	5/5		119		1900 N			No	BSL
	7439-97-6	Mercury	0.065B	0.085B	mg/kg	SF-12	3/5	0.058-0.056	0.085		31			No	BSL
	7440-02-0	Nickel	4.2B	35.4	mg/kg	SF-6	5/5		35.4		2000 N			No	BSL
	7440-07-9	Potassium	154B	221	mg/kg	SF-12	5/5		221		none			No	NUT, NTX
	7782-49-2	Selenium	28.2B	0.58B	mg/kg	SF-10	5/5		0.58		510 N			No	BSL
	7440-22-4	Silver	0.26B	3.7	mg/kg	SF-11	5/5		3.7		510 N			No	BSL
	7440-23-5	Sodium	28.2BEJ	38.8BEJ	mg/kg	SF-6	5/5		38.8		none			No	NUT, NTX
	7440-28-0	Thallium	0.23B	0.33B	mg/kg	SF-6	3/5	0.21-0.22	0.33		6.7			No	BSL
	7440-31-5	Tin	5	849	mg/kg	SF-6	5/5		849		10000 N			No	BSL
	7440-62-2	Vanadium	6.4	12.1	mg/kg	SF-DB4	5/5		12.1		720 N			No	BSL
	7440-66-6	Zinc	10.6	33.4	mg/kg	SF-6	5/5		33.4		10000 N			No	BSL

(1) Maximum concentration used for screening

(2) To date, no background study has been completed

(3) All chemicals were screened against the Region 9 Preliminary Remediation Goals (PRGs), October 2002 for tap water (HQ=0.1, cancer benchmark 1E-06). Lead was screened against the action level of 15 ug/L

(4) Rationale codes:

Selection Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Infrequent detection (IFD)
No toxicity information (NTX)
Essential Nutrient (NUT)

Definitions: =Not Applicable

COPC=Chemical of Potential Concern

MCL=Maximum contaminant level

COPC= Chemical of Potential Concern

J=Estimated value

B=Estimated value

C= carcinogenic

N=Noncarcinogenic

U= Not detected

ug/L= microgram per liter

TABLE 2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Computer Circuits

Scenario Timeframe: Current/Future	Air
Medium:	Air
Exposure Medium:	Air

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (N/C)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
Air	67-64-1	Acetone	10U	1500E	ug/m	AS-3		10-10	1500	NA	350	370	PRG	Y	ASL
	75-35-4	1,1 - Dichloroethene	10U	140	ug/m	AS-3		10-10	140	NA	200	210	PRG	N	BSL
	71-55-6	1,1,1 - Trichloroethane	140	3500E		AS-2		10-10	3500	NA	2200	2300	PRG	Y	ASL
	107-06-2	1,2 - Dichloroethane	10U	13		AS-2		10-10	13	NA	0.09	0.074	PRG	Y	ASL
	540-59-0	1,2 Dichloroethene (total)	10U	11		AS-2		10-10	11	NA	35	37	PRG	N	BSL
	75-15-0	Carbon Disulfide	10U	270		AS-2		10-10	270	NA	700	730	PRG	N	BSL
	74-87-3	Chloromethane	10U	41		AS-2		10-10	41	NA	2.4	1.1	PRG	Y	ASL
	75-09-2	Methylene chloride	16	1500E		AS-2		10-10	1500	NA	5.2	4.1	PRG	Y	ASL
	79-01-6	Trichloroethene	10U	220		AS-1		10-10	220	NA	0.022	0.017	PRG	Y	ASL
	78-93-3	2-Butanone	10U	58		AS-3		10-10	58	NA	1000	1000	PRG	N	BSL
	108-88-3	Toluene	21	36		AS-3		10-10	36	NA	400	400	PRG	N	BSL
	75-01-4	Vinyl chloride	10U	25		AS-2		10-10	25	NA	0.28	0.11	PRG	Y	ASL
	1330-20-7	m,p-xylenes	10U	11		AS-2		10-10	11	NA		110	PRG	N	BSL

(1) Maximum concentration used for screening
(2) To date, no background study has been completed
(3) All chemicals were screened against the Region 9 Preliminary Remediation Goals (PRGs), October 2002 for tap water (HQ=0.1, cancer benchmark 1E-06). Lead was screened against the action level of 15 ug/L
(4) Rationale codes:
Selection Reason: Above Screening Level (ASL)
Below Screening Level (BSL)
Infrequent detection (IFD)
No toxicity information (NTX)
Essential Nutrient (NUT)

Definitions: A=Not Applicable
COPC=Chemical of Potential Concern

MCL=Maximum contaminant level
COPC=Chemical of Potential Concern
J=Estimated value
B=Estimated value
C= carcinogenic
N=Noncarcinogenic
U= Not detected
ug/L= microgram per liter

TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Tap Water	Tetrachloroethene	ug/L	50.526	1.1E+02	3.7E+02	112	ug/L	95%UCL-T	
	Trichloroethene	ug/L	49.526	1.7E+02	2.8E+02	166	ug/L	95%UCL-T	
	Chromium VI	ug/L	25	3.0E+01	1.9E+02	29.9	ug/L	95%UCL-T	
	Manganese	ug/L	530.538	2.0E+03	3.3E+03	2019	ug/L	95%UCL-T	
	Iron	ug/L	269.9	4.9E+02	1.3E+02	493	ug/L	95%UCL-T	
	Nickel	ug/L	24.8	3.8E+01	7.6E+01	38.4	ug/L	95%UCL-T	

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)
(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed
J= Estimated Value

TABLE 3.2.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current and Future
Medium:	Groundwater
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Volatilization from Shower Misting	Tetrachloroethene	ug/L	50.526	112(T)	3.7E+02	112	ug/L	95%UCL-T	
	Trichloroethene	ug/L	49.526	166 (T)	2.8E+02	166	ug/L	95%UCL-T	
	Chromium VI	ug/L	25	29.9(T)	1.9+02	29.9	ug/L	95%UCL-T	

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)

(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed

J= Estimated Value

TABLE 3.3
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current and Future
Medium:	Groundwater
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Volatilization to Air	Tetrachloroethene	ug/L	50.526	1.1E+02	3.7E+02	112	ug/L	95%UCL-T	
	Trichloroethene	ug/L	49.526	1.7E+02	2.8E+02	166	ug/L	95%UCL-T	

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)
(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed
J= Estimated Value

Table 3-4
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current and Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration		
						Value	Units	Rationale
Volatilization to Air	Trichloroethene	mg/kg	2.4	2.9E+00	5.5E+01D	2.9	mg/kg	95%UCL-T
	Benzo(a)pyrene	mg/kg	0.2	2.4E-01	1.2E+00	0.2	mg/kg	95%UCL-T

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)

(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed

J= Estimated Value

D= Dilution

Table 3-5
 EXPOSURE POINT CONCENTRATION SUMMARY
 REASONABLE MAXIMUM EXPOSURE
 Computer Circuits

Scenario Timeframe:	Current and Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration		
						Value	Units	Statistic (2)
Direct Contact	Trichloroethene	mg/kg	2.4	5.50E+01	5.5E+01D	2.9	mg/kg	95%UCL-T
	Benzo(a)pyrene	mg/kg	0.2	1.20E+00	1.2E+00	0.2	mg/kg	95%UCL-T
	Arsenic	mg/kg	1.6	3.60E+00	4.4E+00	3.6	mg/kg	95%UCL-T

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)
 (2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed
 J= Estimated Value
 D= Dilution

Table 3-6
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current and Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration		
						Value	Units	Rationale
Direct Contact	N-nitrosodi-n-propylamine	mg/kg	0.2	3.00E-01	3.2E-01	0.3	mg/kg	Max
	Benzo(a)pyrene	mg/kg	0.5	1.80E+00	1.3E+00	1.3	mg/kg	Max
	Arsenic	mg/kg	1.6	3.60E+00	4.4E+00	3.6	mg/kg	Max

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)

(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed
J= Estimated Value
D= Dilution

Table 3-7
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current and Future
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Inhalation	Acetone	ug/m³	671.3	1.41E+03	1.5E+03	1413.9	ug/m³		T-test
	1,1,1-Trichloroethane	ug/m³	1810.0	3.42E+03	3.5E+03	3424.0	ug/m³		T-test
	1,2-Dichloroethane	ug/m³	7.0	1.17E+01	1.3E+01	11.7	ug/m³		T-test
	Chloromethane	ug/m³	14.0	17	4.1E+01	17.0	ug/m³		T-test
	Methylene Chloride	ug/m³	706.5	1.4E+03	1.5E+03	1427.4	ug/m³		T-test
	Trichloroethene	ug/m³	73.5	1.9E+02	2.2E+02	190.2	ug/m³		T-test
	Vinyl chloride	ug/m³	9.3		2.5E+01	25	ug/m³	Max	

(1) Statistics: Maximum Detected Value (Max): 95% UCL of Transformed Data (95% UCL-T)

(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

T= Transformed
J= Estimated Value
D= Dilution

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Current		Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Medium: Groundwater										(1)
Exposure Medium: Air										
Inhalation of Indoor Air	Resident (offsite)	Adult		Groundwater	CW	Chemical Conc in Groundwater		ug/L	95%UCL (T)	CDI (mg/kg/day)=
					CF	Conversion Factor	0.001	mg/ug		(CSxCF) x VFxIRxEFxED/
					VF	Volatilization Factor	Chem-specific	L/m ³	EPA, 2002	AT X BW
					IR	Inhalation Rate	20	m ³ /day	EPA, 1991	
					EF	Exposure Frequency	350	days/year	EPA, 1991	
					ED	Exposure Duration	30	years	EPA, 1991	
					BW	Body Weight	70	kg	EPA, 1991	
					AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
					AT-N	Averaging Time (Non-Cancer)	10,950	days	EPA, 1989	
					CW	Chemical Conc. in Groundwater		ug/L	95%UCL (T)	CDI (mg/kg/day)=
		Child			CF	Conversion Factor (concentration)	0.001	mg/ug		(CSxCF) x VFxIRxEFxED/
					VF	Volatilization Factor	Chem-specific	L/m ³	EPA, 2002	AT X BW
					IR	Inhalation Rate	10	m ³ /day	EPA, 1991	
					EF	Exposure Frequency	350	days/year	EPA, 1991	
					ED	Exposure Duration	6	years	EPA, 1991	
					BW	Body Weight	15	kg	EPA, 1991	
					AT-C	Averaging Time (Cancer)	25,500	days	EPA, 1989	
					AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

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EPA, 1991. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors (OSWER 9285-6-03)
EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 9355.4-24) - using Johnson & Ettinger model

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:		Current
Medium:		Subsurface Soil
Exposure Medium:		Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
									(1)
Inhalation of Vapors from Building	Commercial	Adult	Subsurface soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	CDI (mg/kg/day)= CSx VFxIRxEFxED/ATxBW
				VF	Volatilization Factor	Chem-specific	L/m³	Johnson & Ettinger	
				IR	Inhalation Rate	20	m³/day	EPA, 1991	
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	

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EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 93554.4-24) - using Johnson & Ettinger model

TABLE 4.2a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Medium:	Air
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation of Vapors from Building	Commercial	Adult	Subsurface	CA	Chemical Conc in Air	Table 3-	mg/cm ³		CDI (mg/kg/day)= (CaxIRxEDxEF)/(ATxBW) (1)
				IR	Inhalation Rate	20	m ³ /day	EPA, 1991	
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	

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EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 93554.4-24) - using Johnson & Ellinger model

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:			Current						
Medium:			Subsurface Soil						
Exposure Medium:			Air						
Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation of Vapors (Trenching)	Excavation/Construction worker	Adult	Subsurface	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	CDI (mg/kg/day)=(CSxEDxEFxIRxVF)/(ATxBW)
				VF	Volatilization Factor	Chem-specific	L/m³	EPA, 2002	
				IR	Inhalation Rate	20	m³/day	EPA, 1991	
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	

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EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 9355.4-24) - using Johnson & Ettinger model

TABLE 4.4 RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Medium:	Surface Soil
Exposure Medium:	Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Landscape	Adult	Surface soil	CS	Chemical Conc in Soil		mg/kg		(1)
				IR	Ingestion Rate	50	mg/kg	EPA, 1991	CDI (mg/kg/day)= (CSxIRxCFxEDxEFxFI)/(ATxBW)
				CF	Conversion Factor	1.00E-06	kg/mg		
				EF	Exposure Frequency	32	days/year	EPA, 2004*	
				ED	Exposure Duration	25	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
Dermal	Landscape	Adult	Surface soil	AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	
				CS	Chemical Conc in Soil	Table 3-	mg/kg		DAD(mg/kg/day)= (DAeventxEFxEDxVxSA)/(BWxAT)
				CF	Conversion Factor	1.00E-06	kg/mg		DAevent (mg/cm²·event)= CSxCFxAFxABS
				SA	Surface Area	3,300	cm²/day	EPA, 2004	
				AF	Adherence Factor	0.02	mg/cm²	EPA 2001	
				ABS	Absorption Factor	chem specific	unitless	EPA, 2004	
				EF	Exposure Frequency	32	days/year	EPA, 2004*	
				ED	Exposure Duration	25	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	

TABLE 4.4.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Medium:	Surface Soil
Exposure Medium:	Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Landscaper	Adult	Fugitive Dust	CS	Chemical Conc. in Soil		mg/kg		$((CDI) (mg/kg-day) = \frac{[(CS \times ED \times EF \times ET \times IR \times (PEF-1))]}{(AT \times BW)])$
				IR	Inhalation Rate	20	m ³ /hr	EPA, 1991	
				EF	Exposure Frequency	32	days/year	EPA, 2004*	
				ED	Exposure Duration	25	years	EPA, 1991	
				PEF	Particulate Emission Factor	Climate-specific	m ³ /kg	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1991	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	EPA, 1991	

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EPA, 2004. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual- Part E. Supplemental Guidance for Dermal Risk Assessment (OSWER 9285.7-02). July 2004
*Region 2- Upper bound estimate for grass cutting

TABLE 4.5.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Medium:	Surface Soil
Exposure Medium:	Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Excavation/Construction Worker	Adult	Surface soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	$CDI (mg/kg/day) = \frac{C \times IR \times CF \times EF \times ED}{BW}$
				IR	Ingestion Rate	330	mg/kg	EPA, 1991	
				CF	Conversion Factor	1.00E-06	kg/mg		
				EF	Exposure Frequency	250	days/year	EPA, 2004	
				ED	Exposure Duration	1	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	
Dermal	Excavation/Construction Worker	Adult	Surface soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	$DAD (mg/kg/day) = \frac{(DAevent \times EF \times ED \times EV \times SA) \times (BW \times AT)}{CS \times CF \times AF \times ABS}$
				CF	Conversion Factor	1.00E-06	kg/mg		
				SA	Surface Area	3,300	cm ² /day	EPA, 2004	
				AF	Adherence Factor	0.3	mg/cm ²	EPA 2001	
				ABS	Absorption Factor	chem specific	unitless	EPA, 2004	
				EF	Exposure Frequency	250	days/year	EPA, 2004	
				ED	Exposure Duration	1	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	

TABLE 4.5 RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:		Current						
Medium:		Surface Soil						
Exposure Medium:		Surface Soil						
Exposure Route/Receptor/Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Excavation/Construction Worker	Adult	CS	Chemical Conc. in Soil		mg/kg	95% UCL	[(CDI) (mg/kg day) = [(CSxEDxEFxETxIRx(PEF-1))/ (AT x BW)]]
		Fugitive Dust	IR	Inhalation Rate	20	m³/hr	EPA, 1991	
			EF	Exposure Frequency	250	days/year	EPA, 1991	
			ED	Exposure Duration	1	years	EPA, 1991	
			PEF	Particulate Emission Factor	Climate-specific	m³/kg	EPA, 2001	
			BW	Body Weight	70	kg	EPA, 1991	
			AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1991b	
			AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1991b	

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TABLE 4.6.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Excavation/Construction Worker	Adult	Subsurface Soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	$\text{CDI (mg/kg/day)} = \frac{(\text{CS} \times \text{IR} \times \text{CF} \times \text{ED} \times \text{EF} \times \text{FI})}{(\text{AT} \times \text{BW})}$
				IR	Ingestion Rate	330	mg/kg	EPA, 1991	
				CF	Conversion Factor	1,00E-06	kg/mg		
				EF	Exposure Frequency	250	days/year	EPA, 2004	
				ED	Exposure Duration	1	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	
Dermal	Excavation/Construction Worker	Adult	Subsurface Soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	$\text{DAD (mg/kg/day)} = \frac{(\text{DAevent} \times \text{EF} \times \text{ED} \times \text{EV} \times \text{SA})}{(\text{BW} \times \text{AT})}$ $\text{DAevent (mg/cm}^2\text{-event)} = \text{CS} \times \text{CF} \times \text{AF} \times \text{ABS}$
				CF	Conversion Factor	1,00E-06	kg/mg		
				SA	Surface Area	3,300	cm ² /day	EPA, 2004	
				AF	Adherence Factor	0.3	mg/cm ²	EPA 2001	
				ABS	Absorption Factor	chem specific	unitless	EPA, 2004	
				EF	Exposure Frequency	250	days/year	EPA, 2004	
				ED	Exposure Duration	1	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	

TABLE 4.6.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:		Current							
Medium:		Subsurface Soil							
Exposure Medium:		Subsurface Soil							
Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Excavation/Construction Worker	Adult	Fugitive Dust	CS	Chemical Conc. in Soil		mg/kg	95% UCL	$\frac{[(CS \times ED \times EF \times ET \times IR \times (PEF - 1)) / (AT \times BW)]}{(1)}$
				IR	Inhalation Rate	20	m ³ /hr	EPA, 1991	
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	1	years	EPA, 1991	
				PEF	Particulate Emission Factor	Climate-specific	m ³ /kg	EPA, 2001	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1991b	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1991b	

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TABLE 4.7.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Resident	Adult	Tap Water	CW	Chemical Conc in Groundwater	Table 3	mg/kg	95%UCL (1)	$CDI (mg/kg/day) = (CWAIR \times CF \times ED \times EF) / (AT \times BW)$
				IR	Ingestion Rate	2	L/day	EPA, 1991	
				CF	Conversion Factor	1.00E-03	mg/kg		
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	30	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Non Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	10,950	days	EPA, 1989	
				CW	Chemical Conc in Groundwater	Table 3	mg/kg	95%UCL (1)	
				IR	Ingestion Rate	1	L/day	EPA, 1991	
Dermal	Resident	Adult	Tap Water	CF	Conversion Factor	1.00E-03	mg/kg		$CDI (mg/kg/day) = (CWAIR \times CF \times ED \times EF) / (AT \times BW)$
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Non Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	2,190	days	EPA, 1989	
				CW	Chemical Conc in Groundwater	Table 3	mg/L	95%UCL (1)	
				FA	Fraction Absorbed	chem specific	L/day	EPA, 1989	
				SA	Surface Area	18,000	cm ² /day	EPA, 2004	
				Kp	Permeability Constant	chem specific	mg/cm ²	EPA 2001	
Dermal	Resident	Adult	Tap Water	Event	Event Duration	0.58	hours/event	EPA, 2004	$DAD (mg/kg/day) = (DA \times event \times EF \times ED \times VSA) / (BW \times AT)$
				EV	Event Frequency	1	event/day	EPA, 2004	
				EF	Exposure Frequency	350	days/year	EPA, 2001	
				ED	Exposure Duration	30	years	EPA, 2004	
				B	Ratio of permeability coefficient	chem specific		EPA, 2004	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Non Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	10,950	days	EPA, 1989	
				CW	Chemical Conc in Groundwater	Table 3	mg/L	95%UCL (1)	
				FA	Fraction Absorbed	chem specific	L/day	EPA, 1989	

TABLE 4.7.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
	Child		Tap Water	CW	Chemical Conc in Groundwater	Table 3	mg/L	95%UCL (T)	$\text{DAD}(\text{mg/kg/day}) = \frac{(\text{DAevent} \times \text{EF} \times \text{ED} \times \text{VxSA})}{(\text{BW} \times \text{AT})}$
				FA	Fraction Absorbed Water	chem specific	l/day	EPA, 1989	
				SA	Surface Area	6,600	cm ² /day	EPA, 2004	
				Kp	Permeability Constant	chem specific	mg/cm ²	EPA 2001	
				Event	Event Duration	1	hours/event	EPA, 2004	
				EV	Event Frequency	1	event/day	EPA, 2004	
				EF	Exposure Frequency	350	days/year	EPA, 2001	
				ED	Exposure Duration	6	years	EPA, 2004	
				B	Ratio of permeability coefficient	chem specific		EPA, 2004	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	2,190	days	EPA, 1989	

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I. Human Health Evaluation Manual - Part A (EPA/504/1-89/002)
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EPA, 2004. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual - Part E. Supplemental Guidance for Dermal Risk Assessment (OSWER 9285.7-02). July 2004

TABLE 4.8 RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Commercial Worker	Adult	Tap Water	CW	Chemical Conc in Groundwater	Table 3	mg/kg	95%UCL (1)	$CDI (mg/kg/day) = \frac{C \times IR \times CF \times ED \times EF}{(AT \times BW)}$
				IR	Ingestion Rate	1	L/day	EPA, 1991	
				CF	Conversion Factor	1.00E-03	mg/ug		
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	8,760	days	EPA, 1989	

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I. Human Health Evaluation Manual - Part A (EPA/504/1-89/002)
EPA, 1991. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors (OSWER 9285-6-03)

TABLE 4.9.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:

Future

Medium:

Groundwater

Exposure Medium:

Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
									(1)
Inhalation	Resident	Adult	Water Vapors from Shower Head	CA	Chemical Conc in Air	(modeled) ¹	mg/m ³	Schaum, et al	$CDI (mg/kg/day) = \frac{(CA \times IR \times ED \times EF \times ET)}{BW \times AT}$ CA calculation described in RA.
				IR	Inhalation Rate	20	m ³ /day	EPA, 1991	
				CF	Conversion Factor	1.00E-03	mg/ug		
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	30	years	EPA, 1991	
				ET	Exposure Time	0.58	hrs/day	EPA, 2004	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	10,950	days	EPA, 1989	
	Child		Water Vapors from Shower Head	CW	Chemical Conc in Groundwater	(modeled) ¹	mg/m ³	Schaum, et al	$CDI (mg/kg/day) = \frac{(CA \times IR \times ED \times EF \times ET)}{BW \times AT}$
				IR	Inhalation Rate	10	m ³ /day	EPA, 1991	
				CF	Conversion Factor	1.00E-03	mg/ug		
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				ET	Exposure Time	1	hrs/day	EOA, 2004	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	2,190	days	EPA, 1989	

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Schaum, J. K. Hoang, et al. 1994. "Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water". In Water Contamination and Health. Shower time was assumed to be 0.58 for adults and bathing time was assumed 1 hour/day for children for RME exposure (USEPA, 2004).

TABLE 4.10.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:

Future

Medium:

Groundwater

Exposure Medium:

Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Resident	Adult	Vapors from Inside Residence	CW	Chemical Conc in Groundwater	Table 3	mg/kg	95%UCL (T)	$CDI (mg/kg/day) =$ $CW \times CF \times 1 \times VF \times IR \times ED \times EF$
				IR	Inhalation Rate	20	m ³ /day	EPA, 1991	
				VF	Volatilization Factor	Chem-specific	L/m ³	EPA, 2002	
				CF	Conversion Factor	1.00E-03	mg/ug		
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	30	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	10,950	days	EPA, 1989	
	Child		Vapors from Inside Residence	CW	Chemical Conc in Groundwater	Table 3	mg/kg	95%UCL (T)	$CDI (mg/kg/day) =$ $CW \times CF \times 1 \times VF \times IR \times ED \times EF$
				IR	Inhalation Rate	10	m ³ /day	EPA, 1991	
				VF	Volatilization Factor	Chem-specific	L/m ³	EPA-2002	
				CF	Conversion Factor	1.00E-03	mg/ug		
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	2,190	days	EPA, 1989	

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EPA, 1991. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual - Supplemental Guidance. Standard Default Exposure Factors (OSWER 9285-6-03)
EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 9355.4-24) - using Johnson & Eltinger model

TABLE 4.10a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Air
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation of Vapors from Building	Commercial	Adult	Air	CA	Chemical Conc in Air	Table 3-7	mg/m ³		CDI (mg/kg/day)= (CAxIRxEDxEF)/(ATxBW) (1)
				IR	Inhalation Rate	20	m ³ /day	EPA, 1991	
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I. Human Health Evaluation Manual - Part A (EPA/504/1-89/002)
EPA, 1991. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors (OSWER 9285-6-03)
EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 9355.4-24) - using Johnson & Ettinger model

TABLE 4.11.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation of Vapors from Building	Commercial	Adult	Subsurface soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	(1)
				VF	Volatilization Factor	Chem-specific	L/m ³	EPA, 2002	CDI (mg/kg/day)=
				IR	Inhalation Rate	20	m ³ /day	EPA, 1991	(CSx VFxIRxEXED)/ATxBW
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	

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EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 9355.4-24) - using Johnson & Ettinger model

TABLE 4.12.FME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation of Vapors (Trenching)	Excavation/Construction worker	Adult	Subsurface	CS	Chemical Conc in Soil		mg/kg	95%UCL (1)	$CDI (mg/kg/day) = (CS \times ED \times EF \times IR \times VF) / (AT \times BW)$
				VF	Volatilization Factor	Chem-specific	L/m^3	EPA, 2002	
				IR	Inhalation Rate	20	m^3/day	EPA, 1991	
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	25	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	

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EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (OSWER 93554.4-24) - using Johnson & Ettinger model

TABLE 4.13.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE

Computer Circuits

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil

Exposure Route/ Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Adult	Surface soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	CDI (mg/kg/day)= (CSxIRxCFxEDxExF)/(ATxBW)
			IR	Ingestion Rate	50	mg/kg	EPA, 1991	
			CF	Conversion Factor	1.00E-06	kg/mg		
			EF	Exposure Frequency	32	days/year	EPA, 2004*	
			ED	Exposure Duration	25	years	EPA, 1991	
			FI	Fraction Ingested	1	unitless		
			BW	Body Weight	70	kg	EPA, 1991	
			AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
			AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	
Dermal	Adult	Surface soil	CS	Chemical Conc in Soil		mg/kg	95%UCL (T)	DAED(mg/kg/day)= (DAeventxExFxDxExSA)/(BWxAT)
			CF	Conversion Factor	1.00E-06	kg/mg		
			SA	Surface Area	3,300	cm ² /day	EPA, 2004	DAevent (mg/cm ² event)= CSxCFxExFABS
			AF	Adherence Factor	0.02	mg/cm ²	EPA 2001	
			ABS	Absorption Factor	chem specific	unitless	EPA, 2004	
			EF	Exposure Frequency	32	days/year	EPA, 2004*	
			ED	Exposure Duration	25	years	EPA, 1991	
			FI	Fraction Ingested	1	unitless		
			BW	Body Weight	70	kg	EPA, 1991	
			AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
			AT-N	Averaging Time (Non Cancer)	9,125	days	EPA, 1989	
Inhalation	Adult	Fugitive Dust	CS	Chemical Conc. in Soil		mg/kg	95% UCL	(CDI) (mg/kg-day)= [(CSxExFxFxIRx(PEF-1))/ (AT x BW)]
			IR	Inhalation Rate	20	m ³ /hr	EPA, 1991	
			EF	Exposure Frequency	32	days/year	EPA, 1991	
			ED	Exposure Duration	25	years	EPA, 2004*	
			PEF	Particulate Emission Factor	Climate-specific	m ³ /kg	EPA, 2001	
			BW	Body Weight	70	kg	EPA, 1991	
			AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1991	
			AT-N	Averaging Time (Non-Cancer)	9,125	days	EPA, 1991	

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*Region 2- Upper bound estimate for grass cutting

TABLE 4.14.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Medium: Exposure Medium:		Future Surface Soil Surface Soil	Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Excavation/ Construction Worker	Adult	Surface soil	CS	Chemical Conc in Soil					mg/kg	95%UCL (T) EPA, 1991	$CDI (mg/kg/day) = \frac{(CS \times IR \times CF \times ED \times EF \times FI)}{(AT \times BW)}$
				IR	Ingestion Rate				330	mg/kg	EPA, 1991	
				CF	Conversion Factor				1.00E-06	kg/mg		
				EF	Exposure Frequency				250	days/year	EPA, 1991	
				ED	Exposure Duration				1	years	EPA, 1991	
				FI	Fraction Ingested				1	unitless		
				BW	Body Weight				70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)				25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)				365	days	EPA, 1989	
Dermal	Excavation/ Construction Worker	Adult	Surface soil	CS	Chemical Conc in Soil					mg/kg	95%UCL (T) EPA, 1991	$DAD (mg/kg/day) = \frac{(DA_{event} \times EF \times ED \times EV \times SA)}{(BW \times AT)}$ $DA_{event} (mg/cm^2-event) = CS \times CF \times F \times ABS$
				CF	Conversion Factor				1.00E-06	kg/mg		
				SA	Surface Area				3,300	cm ² /day	EPA, 2004	
				AF	Adherence Factor				0.3	mg/cm ²	EPA 2001	
				ABS	Absorption Factor				chem specific	unitless	EPA, 2004	
				EF	Exposure Frequency				250	days/year	EPA, 2004	
				ED	Exposure Duration				1	years	EPA, 1991	
				FI	Fraction Ingested				1	unitless		
				BW	Body Weight				70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)				25,550	days	EPA, 1989	
Inhalation	Excavation/ Construction Worker	Adult	Fugitive Dust	CS	Chemical Conc. in Soil					mg/kg	95% UCL EPA, 1991	$CDI (mg/kg-day) = \frac{[(CS \times ED \times EF \times ET \times IR \times (PEF-1))] \times PEF}{(AT \times BW)}$
				IR	Inhalation Rate				20	m ³ /hr	EPA, 1991	
				EF	Exposure Frequency				250	days/year	EPA, 1991	
				ED	Exposure Duration				1	years	EPA, 1991	
				ET	Exposure Time				8	hrs/day	EPA, 1991c	
				PEF	Particulate Emission Factor				Climate-specific	m ³ /kg	EPA, 2002	
				BW	Body Weight				70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)				25,550	days	EPA, 1991b	
				AT-N	Averaging Time (Non-Cancer)				365	days	EPA, 1991b	

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EPA, 2004. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual- Part E. Supplemental Guidance for Dermal Risk Assessment (OSWER 9285.7-02). July 2004

TABLE 4.15 FME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Subsurface soil
Exposure Medium:	Subsurface soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Excavation/Construction Worker	Adult	Subsurface Soil		Chemical Conc In Soil				(1)
				CS			mg/kg	95%UCL (1)	$\text{CDI (mg/kg/day)} = \frac{(\text{CS} \times \text{IR} \times \text{CF} \times \text{ED} \times \text{EF} \times \text{FI})}{(\text{AT} \times \text{BW})}$
				IR	Ingestion Rate	330	mg/kg	EPA, 1991	
				CF	Conversion Factor	1.00E-06	kg/mg		
				EF	Exposure Frequency	250	days/year	EPA, 1991	
				ED	Exposure Duration	1	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	
Dermal	Excavation/Construction Worker	Adult	Subsurface Soil	CS	Chemical Conc In Soil		mg/kg	95%UCL (1)	$\text{DAD (mg/kg/day)} = \frac{(\text{DA} \times \text{event} \times \text{EF} \times \text{ED} \times \text{EX} \times \text{SA})}{(\text{BW} \times \text{AT})}$ $\text{DA} \times \text{event (mg/cm}^2 \times \text{event)} = \text{CS} \times \text{CF} \times \text{AF} \times \text{ABS}$
				CF	Conversion Factor	1.00E-06	kg/mg		
				SA	Surface Area	3,300	cm ² /day	EPA, 2004	
				AF	Adherence Factor	0.3	mg/cm ²	EPA 2001	
				ABS	Absorption Factor	chem specific	unitless	EPA, 2004	
				EF	Exposure Frequency	250	days/year	EPA, 2004	
				ED	Exposure Duration	1	years	EPA, 1991	
				FI	Fraction Ingested	1	unitless		
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1989	

TABLE 4.15.FME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Medium:	Subsurface soil
Exposure Medium:	Subsurface soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Excavation/ Construction Worker	Adult	Fugitive Dust	CS	Chemical Conc. in Soil		mg/kg	95% UCL	(CDI) (mg/kg-day)=
				IR	Inhalation Rate	20	m ³ /hr	EPA, 1991	[(CSxEDxEFxETxIRx(PEF-1))]/
				EF	Exposure Frequency	250	days/year	EPA, 1991	(AT x BW)]
				ED	Exposure Duration	1	years	EPA, 1991	
				ET	Exposure Time	8	hrs/day	EPA, 1991c	PEF =
				PEF	Particulate Emission Factor	Climate-specific	m ³ /kg	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Can)	25,550	days	EPA, 1991b	
				AT-N	Averaging Time (Non Cancer)	365	days	EPA, 1991b	

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EPA, 2004. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual- Part E. Supplemental Guidance for Dermal Risk Assessment (OSWER 9285.7-02). July 2004

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
Computer Circuits

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Tetrachloroethene	Chronic	1E-02	mg/kg/day	1E+00	1E-02	mg/kg/day	Liver	UF=1000	IRIS	10/13/04
Trichloroethene	Chronic	3E-04	mg/kg/day	1E+00	3E-04	mg/kg/day	Liver	NA	NCEA	10/13/04
Manganese (in water)	Chronic	2E-02	mg/kg/day	4E-02	8E-04	mg/kg/day	CNS	MF=3	IRIS	10/13/04
Chromium VI (particulates)	Chronic	3E-03	mg/kg/day	3E-02	9E-05	mg/kg/day	Liver	900	IRIS	10/13/04
Benzo(a)pyrene	Chronic	NA	mg/kg/day		NA	mg/kg/day	Respiratory	NA	IRIS	
N - Nitroso-di-n-propylamine	Chronic	NA	mg/kg/day		NA	mg/kg/day	NA	NA	IRIS	
Arsenic	Chronic	3E-04	mg/kg/day	1E+00	3E-04	mg/kg/day	hyperpigmentation	3	IRIS	10/14/04
Nickel	Chronic	2E-02	mg/kg/day	1E+00	2E-02	mg/kg/day	decreased body weight	300	IRIS	10/14/04
Iron	Chronic	3E-01	mg/kg/day	1E+00	3E-01	mg/kg/day			NCEA	10/14/04

(1) Source: Risk Assessment Guidance for Superfund Volume 1
Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal
Risk Assessment) July 2004. Section 4.2
(2) See Risk Assessment Text for the derivation of the "Absorbed RfD for Dermal"

Definitions: NA= Not Available
IRIS= Integrated Risk Information System
NCEA= National Center for Environmental Assessment

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION
Computer Circuits

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Tetrachloroethene	Chronic	NA	mg/m ³	NA	mg/kg/day	Liver	NA	NA	NA
Trichloroethene	Chronic	1.00E-02	mg/m ³	1.00E-02	mg/kg/day	Liver	NA	NCEA	10/12/2004
Manganese (in water)	Chronic	5.00E-05	mg/m ³	1.40E-05	mg/kg/day	CNS	1E+03	IRIS	10/11/2004
Chromium VI (particulates)	Chronic	1.00E-04	mg/m ³	2.20E-05	mg/kg/day	Liver	3E+02	IRIS	12/1/2002
Chromium VI (aerosol)	Chronic	8.00E-06	mg/m ³	2.20E-05	mg/kg/day	Respiratory	9E+01	IRIS	10/11/2004
Benzo(a)pyrene	Chronic	NA		NA		NA	NA	NA	NA
N - Nitroso-di-n-propylamine	Chronic	NA		NA		NA	NA	NA	NA
Arsenic	Chronic	NA	mg/m ³	NA		NA	NA		
Iron	Chronic	NA				NA	NA		
Nickel	Chronic	NA		NA		NA	NA		
Chloromethane	Chronic	9.00E-02	mg/m ³	2.60E-02	mg/kg/day	Respiratory	1E+03	IRIS	10/13/2004
1,2-Dichloroethane	Chronic		mg/m ³		mg/kg/day	Liver		NCEA	10/13/2004
Acetone	Chronic	NA		NA		NA	NA	NA	NA
Methylene chloride	Chronic	NA	mg/m ³	NA	mg/kg/day	Liver		HEAST	10/14/2004
1,1,1-trichloroethane	Chronic	NA	mg/m ³	NA	mg/kg/day				
Vinyl chloride	Chronic	1.00E-02	mg/m ³	2.86E-02	mg/kg/day	Liver	3E+01	IRIS	10/13/2004

(1) See Risk Assessment text for the derivation of the Extrapolated Dose

Definitions:

NA=Not Available

IRIS= Integrated Risk Information System

NCEA= National Center for Environmental Assessment

HEAST= Health Effects Assessment Summary Table (July 1995)

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
Computer Curcuits

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Tetrachloroethene	0.0520	1/(mg/kg-day)	1.00E+00	5.20E-02	1/(mg/kg-day)	B1	NCEA	10/12/04
Trichloroethene	0.4000	1/(mg/kg-day)	1.00E+00	4.00E-01	1/(mg/kg-day)	B1	NCEA	10/12/04
Manganese (in water)	NA	1/(mg/kg-day)	NA	NA	1/(mg/kg-day)	D	IRIS	12/04/02
Chromium VI (particulates)	NA	1/(mg/kg-day)	NA	NA	1/(mg/kg-day)	D	IRIS	12/04/02
Benzo(a)pyrene	7.3000	1/(mg/kg-day)	1.00E+00	7.30E+00	1/(mg/kg-day)	B2	IRIS	12/04/02
N - Nitroso-di-n-propylamin	7.0000	1/(mg/kg-day)	1.00E+00	7.00E+00	1/(mg/kg-day)	B2	IRIS	12/12/02
Arsenic (inorganic)	1.5000	1/(mg/kg-day)	1.00E+00	1.50E+00	1/(mg/kg-day)	A	IRIS	12/04/02
Nickel	NA		NA			B2	IRIS	10/14/04
Iron	NA		NA			D		

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human
Health Evaluation Manual (Part E. Supplemental Guidance for Dermal Risk
Assessment) July 2004. Exhibit 4-1

Definitions:

NA- Not Available

IRIS - Integrated Risk Information System

A=Human Carcinogen

B1=Probable human carcinogen

C= Possible human carcinogen

D= Not classifiable as a human carcinogen

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION
Computer Circuits

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Tetrachloroethene	5.80E-04	(mg/m ³) ⁻¹	2.00E-02	1/(mg/kg/day)	C	IRIS	10/12/04
Trichloroethene	1.70E-03	(mg/m ³) ⁻¹	4.00E-01	1/(mg/kg/day)	C	NCEA	10/12/04
Manganese (in water)	NA		NA		D	NCEA	10/12/04
Chromium VI (particulates)	1.20E+01	(mg/m ³) ⁻¹	2.90E+02	1/(mg/kg/day)	A	IRIS	10/12/04
Benzo(a)pyrene	NA	(mg/m ³) ⁻¹	NA		B2	IRIS	10/12/04
N - Nitroso-di-n-propylamine	NA		NA		B2	IRIS	10/12/04
Arsenic (inorganic)	4.30E+00	(mg/m ³) ⁻¹	1.50E+01	1/(mg/kg/day)	A	IRIS	10/12/04
Nickel	NA		NA		B2	IRIS	10/14/04
Iron	NA		NA				
Acetone	NA	NA	NA		D	NA	NA
Chloroethane	NA	NA	NA		D	NA	NA
1,2-Dichloroethane	2.60E-02	(mg/m ³) ⁻¹	9.10E-02	1/(mg/kg/day)	B2	IRIS	10/13/04
Methylene chloride	4.70E-04	(mg/m ³) ⁻¹	1.60E-03	1/(mg/kg/day)	B2	IRIS	10/13/2004
1,1,1-Trichloroethane	NA		NA		D	NA	NA
Vinyl Chloride	8.80E-03	(mg/m ³) ⁻¹	3E-02	1/(mg/kg/day)	A	IRIS	10/13/2004

Definitions: NA=Not Available
IRIS= Integrated Risk Information System
A=Human Carcinogen
B2=Probable human carcinogen
C= Possible human carcinogen
D= Not classifiable as a human carcinogen

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

[illegible]

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Receptor Population:	Resident
Receptor Age:	Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration	RfD/RfC				
								Value	Units			Value	Units	Value		Units
Groundwater	Air	Indoor Air	Inhalation of vapors	Tetrachloroethene	1.12E+02	ug/L	1.4E-05	mg/kg-day	2.00E-02	1/mg/kg-day	2.8E-07	1.7E-04	mg/kg-day			1.67E-06
				Trichloroethene	1.66E+02	ug/L	1.7E-04	mg/kg-day	4.00E-01	1/mg/kg-day	6.9E-05	1.7E-04	mg/kg-day	1.0E-02	mg/kg-day	
				Manganese	2E+03	ug/L	NA									
				Chromium VI	3E+01	ug/L	NA									
				Iron	5E+02	ug/L	NA									
					Nickel	4E+01	ug/L	NA								
					6.9E-05										1.67E-06	

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Receptor Population:	Commercial Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RID/RfC			
								Value	Units		Value	Units	Value	Units		Value
Subsurface Soil	Air	Indoor Air	Inhalation of vapors	Trichloroethene	2.90E+00	mg/kg	8.7E-03	mg/kg-day	4.00E-01	1/mg/kg-day	3.5E-03	3.5E-07	mg/kg-day	1.0E-02	mg/kg-day	3.5E-09
				Benzo(a)pyrene	2.00E-01	mg/kg	6.2E-11	mg/kg-day	NA		3.4E-14	mg/kg-day	NA			
				Arsenic	3.60E+00	mg/kg	NA									
				Exp. Route Total												
				Exposure Point Total												
Medium Total																

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Receptor Population:	Excavation/Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations					Hazard Quotient
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RID/RIC				
								Value	Units		Value	Units	Value	Units	Value	Units	
Subsurface Soil	Air	Air	Inhalation of vapors	Trichloroethene	2.90E+00	mg/kg	3.20E-04	mg/kg-day	4.00E-01	1/mg/kg-day	1.3E-04	2.3E-02	mg/kg-day	1.0E-02	mg/kg-day	2.3E-04	
				Benzo(a)pyrene	2.00E-01	mg/kg	2.47E-12	mg/kg-day	NA		1.8E-10	mg/kg-day	NA				
				Arsenic	3.60E+00	mg/kg	NA										
				Exp. Route Total													

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

[illegible]

TABLE 7.6.FME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Receptor Population:	Excavation/Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RID/RIC			
								Value	Units		Value	Units	Value	Units		Value
Surface Soil	Soil	Soil	Ingestion	Benzo(a)pyrene N-Nitroso-di-n-propylamine Arsenic	1.30E+00	mg/kg	5.95E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	4.34E-07	4.17E-06	mg/kg-day	NA	mg/kg-day	2.0E-09
					0.32	mg/kg	1.47E-08	mg/kg-day	7.00E+00	1/(mg/kg-day)	1.03E-07	1.03E-06	mg/kg-day	NA	mg/kg-day	
					2.1	mg/kg	9.62E-08	mg/kg day	1.50E+00	1/(mg/kg-day)	1.44E-07	6.70E-06	mg/kg-day	3.00E-04	mg/kg-day	
			Exp. Route Total						6.81E-07						2.0E-09	
			Dermal	Benzo(a)pyrene N-Nitroso-di-n-propylamine Arsenic	1.30E+00	mg/kg	1.50E-08	mg/kg-day	7E+00	1/(mg/kg-day)	1.10E-07	1.08E-06	mg/kg day	NA		
0.32	mg/kg	2.93E-10			mg/kg-day	7E+00	1/(mg/kg-day)	2.05E-09	2.05E-08	mg/kg-day	NA					
2.1	mg/kg	5.77E-09			mg/kg-day	2E+00	1/(mg/kg-day)	8.66E-09	4.04E-07	mg/kg-day	3.00E-04	mg/kg-day				
Exposure Point Total									1.20E-07				1.2E-10			
Exposure Medium Total									8.01E-07				2.13E-09			
		Air	Inhalation	Benzo(a)pyrene N-Nitroso-di-n-propylamine Arsenic	1.30E+00	mg/kg	7.38E-12	mg/kg-day	NA			1.38E-07	mg/kg-day	NA		0.0E+00
					0.32	mg/kg	1.27E-11	mg/kg-day	NA		2.63E-09	mg/kg-day	NA			
					2.1	mg/kg	8.33E-11	mg/kg-day	4.30E-03	1/(mg/kg-day)	3.58E-13	5.17E-08	mg/kg-day	NA		
			Exp. Route Total						3.6E-13						0.0E+00	
			Exposure Point Total									8.01E-07				
Exposure Medium Total																
Medium Total																
			Exp. Route Total													
			Exposure Point Total													
Exposure Medium Total																
Medium Total													2.13E-09			

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Receptor Population: Receptor Age:		Future Resident Adult														
Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration	RfD/RfC				
								Value	Units			Value	Units	Value		Units
Groundwater	Groundwater	Tap Water	Ingestion	Tetrachloroethene Trichloroethene Manganese Chromium VI Iron Nickel	1.12E+02	ug/L	1.3E-03	mg/kg day	0.0520	1/(mg/kg-day)	6.8E-05	3.0E-03	mg/kg-day	1E-02	mg/kg-day	3.0E-05
					1.68E+02	ug/L	1.9E-03	mg/kg day	0.4000	1/(mg/kg-day)	7.7E-04	4.5E-03	mg/kg day	3.0E-04	mg/kg-day	1.4E-06
					2E+03	ug/L	2.4E-02	mg/kg-day	NA	1/(mg/kg-day)		5.5E-02	mg/kg-day	2E-02	mg/kg-day	1.1E-03
					3E+01	ug/L	3.5E-04	mg/kg-day	NA	1/(mg/kg-day)		8.1E-04	mg/kg-day	3E-03	mg/kg-day	2.4E-06
					5E+02	ug/L	5.7E-03	mg/kg day	NA	1/(mg/kg-day)		1.3E-02	mg/kg-day	3E-01	mg/kg/day	4.0E-03
					4E+01	ug/L	4.4E-04	mg/kg-day	NA	1/(mg/kg-day)		1.0E-03	mg/kg-day	2E-02	mg/kg/day	2.1E-05
	Exp. Route Total														4.04E-03	
	Groundwater	Dermal		Tetrachloroethene Trichloroethene Manganese Chromium VI Iron Nickel	1.12E+02	ug/L	8.0E-04	mg/kg-day	5.2E-02	1/(mg/kg-day)	4.2E-05	1.9E-03	mg/kg-day	1.0E-02	mg/kg-day	1.9E-05
					1.68E+02	ug/L	3.3E-04	mg/kg day	4.0E-01	1/(mg/kg-day)	1.3E-04	7.7E-04	mg/kg-day	3.0E-04	mg/kg-day	2.3E-07
					2E+03	ug/L	3.6E-06	mg/kg-day	NA	1/(mg/kg-day)		1.3E-06	mg/kg-day	8.0E-04	mg/kg-day	1.0E-09
3E+01					ug/L	3.6E-06	mg/kg-day	NA	1/(mg/kg-day)		8.3E-06	mg/kg-day	9.0E-05	mg/kg-day	7.5E-10	
Exp. Route Total														2.2E-08		
Exp. Route Total														1.93E-05		
Exposure Point Total														4.1E-03		
Groundwater	Groundwater		Inhalation	Tetrachloroethene Trichloroethene Manganese Chromium VI Iron Nickel	1.12E+02	ug/L	3.4E-01	mg/kg day	2.0E-02	1/(mg/kg-day)	6.7E-03	7.9E-03	mg/kg-day	NA	mg/kg-day	7.9E-03
					1.68E+02	ug/L	5.0E-02	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.0E-02	1.2E-01	mg/kg day	1.0E-02	mg/kg-day	1.2E-03
					2E+03	ug/L	5.6E-03	mg/kg-day	2.9E+02	1/(mg/kg-day)	1.6E+00	1.3E-02	mg/kg-day	2.2E-05	mg/kg-day	0.0E+00
					3E+01	ug/L	5.6E-03	mg/kg-day	2.9E+02	1/(mg/kg-day)	1.6E+00	1.3E-02	mg/kg-day	2.2E-05	mg/kg-day	2.9E-07
					5E+02	ug/L	5.6E-03	mg/kg-day	2.9E+02	1/(mg/kg-day)	1.6E+00	1.3E-02	mg/kg-day	2.2E-05	mg/kg-day	0.0E+00
					4E+01	ug/L	5.6E-03	mg/kg-day	2.9E+02	1/(mg/kg-day)	1.6E+00	1.3E-02	mg/kg-day	2.2E-05	mg/kg-day	0.0E+00
	Exp. Route Total														9.1E-03	
	Exp. Route Total															
	Exposure Point Total															
	Groundwater	Air	Indoor Air	Inhalation of vapors	Tetrachloroethene Trichloroethene Manganese Chromium VI Iron Nickel	1.12E+02	ug/L	3.1E-05	mg/kg day	2.00E-02	1/(mg/kg-day)	6.3E-07	7.3E-05	mg/kg-day		mg/kg-day
1.68E+02						ug/L	3.0E-05	mg/kg day	4.00E-01	1/(mg/kg-day)	1.2E-05	7.1E-05	mg/kg-day	1.0E-02	mg/kg-day	
2E+03						ug/L	NA									
3E+01						ug/L	NA									
5E+02						ug/L	NA									
4E+01						ug/L	NA									
Exp. Route Total														7.05E-07		
Exp. Route Total																
Exposure Point Total														7.1E-07		
Exposure Point Total																
Medium Total														9.07E-03		

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient			
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC					
								Value	Units		Value	Units	Value	Units				
Groundwater	Groundwater	Tap Water	Ingestion	Tetrachloroethene	1.12E+02	ug/L	6.2E-04	mg/kg-day	0.0520	1/(mg/kg-day)	3.2E-05	mg/kg-day	1E-02	mg/kg-day	7.2E-05			
				Trichloroethene	1.66E+02	ug/L	9.1E-04	mg/kg-day	0.4000	1/(mg/kg-day)	3.7E-04	mg/kg-day	3.0E-04	mg/kg-day	3.2E-06			
				Manganese	2E+03	ug/L	1.1E-02	mg/kg-day	NA	1/(mg/kg-day)		mg/kg-day	2E-02	mg/kg-day	2.6E-03			
				Chromium VI	3E+01	ug/L	1.6E-04	mg/kg-day	NA	1/(mg/kg-day)		mg/kg-day	3E-03	mg/kg-day	5.8E-06			
				Iron	5E+02	ug/L	2.7E-03	mg/kg-day	NA	1/(mg/kg-day)		mg/kg-day	3E-01	mg/kg-day	9.5E-03			
				Nickel	4E+01	ug/L	2.1E-04	mg/kg-day	NA	1/(mg/kg-day)		mg/kg-day	2E-02	mg/kg-day	4.9E-05			
			Exp. Route Total												1.22E-02			
			Dermal	Tetrachloroethene	1.12E+02	ug/L	3.6E-04	mg/kg-day	5.2E-02	1/(mg/kg-day)	1.9E-05	mg/kg-day	1.0E-02	mg/kg-day	4.2E-05			
				Trichloroethene	1.66E+02	ug/L	1.5E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	6.0E-05	mg/kg-day	3.0E-04	mg/kg-day	5.1E-07			
				Manganese	2E+03	ug/L	3.6E-06	mg/kg-day	NA	1/(mg/kg-day)		mg/kg-day	8.0E-04	mg/kg-day	5.8E-08			
				Chromium VI	3E+01	ug/L	4.7E-07	mg/kg-day	NA	1/(mg/kg-day)		mg/kg-day	9.0E-05	mg/kg-day	3.2E-10			
				Iron	5E+02	ug/L						mg/kg-day	3.0E-01	mg/kg-day				
				Nickel	4E+01	ug/L						mg/kg-day	2.0E-02	mg/kg-day	2.2E-08			
			Exp. Route Total							7.87E-05					4.26E-05			
			Exposure Point Total							4.8E-04					1.2E-02			
			Exposure Medium Total															
Groundwater	Groundwater	Indoor Air	Inhalation	Tetrachloroethene	1.12E+02	ug/L	2.4E-02	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.9E-04	mg/kg-day	NA	mg/kg-day	4.2E-03			
				Trichloroethene	1.66E+02	ug/L	3.3E-02	mg/kg-day	4.0E-01	1/(mg/kg-day)	1.3E-02	mg/kg-day	1.0E-02	mg/kg-day	0.0E+00			
				Manganese	2E+03	ug/L	4.1E-03	mg/kg-day	2.9E+02	1/(mg/kg-day)	1.2E+00	mg/kg-day	2.2E-05	mg/kg-day	1.0E-06			
				Chromium VI	3E+01	ug/L									0.0E+00			
				Iron	5E+02	ug/L									0.0E+00			
				Nickel	4E+01	ug/L									0.0E+00			
			Exp. Route Total							1.20E+00					4.24E-03			
			Exposure Point Total							1.20E+00					1.65E-02			
			Exposure Medium Total															
			Groundwater	Groundwater	Indoor Air	Intalation of vapors	Tetrachloroethene	1.12E+02	ug/L	1.48E-05	mg/kg-day	2.00E-02	1/(mg/kg-day)	2.96E-07	mg/kg-day	1.7E-04	mg/kg-day	1.7E-06
							Trichloroethene	1.66E+02	ug/L	1.42E-05	mg/kg-day	4.00E-01	1/(mg/kg-day)	5.88E-06	mg/kg-day	1.7E-04	mg/kg-day	
							Manganese	2.00E+03	ug/L	NA								
							Chromium VI	3.00E+01	ug/L	NA								
							Iron	5.00E+02	ug/L	NA								
							Nickel	4E+01	ug/L	NA								
							Exp. Route Total							6.0E-06				
Exposure Point Total																		
Exposure Medium Total																		
Medium Total																		
Total of Receptor Risks Across All Media										1.2E+00	Total of Receptor Hazards Across All Media				2.9E-02			

TABLE 7.9.HME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Commercial Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		HID/RIC		
							Value	Units	Value	Units		Value	Units	Value		Units
Groundwater	Groundwater	Tap Water	Ingestion	Tetrachloroethene	1.12E+02	ug/L	3.9E-04	mg/kg-day	0.0520	1/(mg/kg-day)	2.0E-05	1.1E-03	mg/kg-day	1E-02	mg/kg-day	1.1E-05
				Trichloroethene	1.66E+02	ug/L	5.8E-04	mg/kg-day	0.4000	1/(mg/kg-day)	2.3E-04	1.6E-03	mg/kg-day	3.0E-04	mg/kg-day	4.8E-07
				Manganese	2E+03	ug/L	7.0E-03	mg/kg-day	NA	1/(mg/kg-day)		2.0E-02	mg/kg-day	2E-02	mg/kg-day	3.9E-04
				Chromium VI	3E+01	ug/L	1.0E-04	mg/kg-day	NA	1/(mg/kg-day)		2.1E-04	mg/kg-day	3E-03	mg/kg-day	6.3E-07
				Iron	5E+02	ug/L	1.7E-03	mg/kg-day	NA	1/(mg/kg-day)		4.8E-03	mg/kg-day	3E-01	mg/kg-day	1.4E-03
				Nickel	4E+01	ug/L	1.3E-04	mg/kg-day	NA	1/(mg/kg-day)		3.7E-04	mg/kg-day	2E-02	mg/kg-day	7.5E-06
				Exp. Route Total						2.5E-04					1.85E-03	
			Exp. Route Total						2.51E-04						1.85E-03	
			Exposure Point Total													
			Exposure Medium Total													
				Exp. Route Total						0.00E+00					0.00E+00	
			Exposure Point Total													
			Exposure Medium Total													
				Exp. Route Total						0.0E+00					0.00E+00	
			Exposure Point Total													
			Exposure Medium Total													
Medium Total																
				Exp. Route Total												
			Exposure Point Total													
			Exposure Medium Total													
Medium Total																
														</		

TABLE 7.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Commercial Worker
Receptor Age:	Adult

Medium		Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations						Non-Cancer Hazard Calculations				Hazard Quotient
						Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC				
									Value	Units		Value	Units	Value	Units	Value	Units	
Subsurface Soil	Air	Indoor Air	Inhalation of vapors	Trichloroethene	2.90E+00	mg/kg	8.7E-03	mg/kg-day	4.00E-01	1/mg/kg-day	3.5E-03	3.5E-07	mg/kg-day	1.0E-02	mg/kg-day	3.5E-09		
				Benzo(a)pyrene	2.00E-01	mg/kg	6.2E-11	mg/kg-day	NA		4.3E-06	mg/kg-day	NA					
				Arsenic	3.60E+00	mg/kg	NA											
				Exp. Route Total										3.5E-09				
															</			

TABLE 7.11.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeline: Future																
Receptor Population: Excavation/Construction Worker																
Receptor Age: Adult																
Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk	Cancer Risk	Intake/Exposure Concentration		RID/RIC			
							Value	Units			Value	Units	Value	Units		
Subsurface Soil	Air	Air	Inhalation of vapors	Trichloroethene	2.90E+00	mg/kg	3.20E-04	mg/kg-day	4.00E-01	1/mg/kg-day	1.3E-04	2.3E-02	mg/kg-day	1.0E-02	mg/kg-day	2.3E-04
				Benzo(a)pyrene	2.00E-01	mg/kg	2.47E-12	mg/kg-day	NA		1.8E-10	mg/kg-day	NA			
				Arsenic	3.60E+00	mg/kg	NA									
				Exp. Route Total												

TABLE 7.12.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Future
Receptor Population: Landslapper
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations					Hazard Quotient
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC				
								Value	Units		Value	Units	Value	Units	Value	Units	
Surface Soil	Soil	Soil	Ingestion	Benzo(a)pyrene	1.30E+00	mg/kg	2.89E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	2.11E-07	8.08E-08	mg/kg-day	NA	mg/kg-day	3.9E-11	
				N-Nitroso-di-n-propylamine	0.32	mg/kg	7.11E-09	mg/kg-day	7.00E+00	1/(mg/kg-day)	4.97E-08	1.00E-08	mg/kg-day	NA	mg/kg-day		
				Arsenic	2.1	mg/kg	4.66E-08	mg/kg-day	1.50E+00	1/(mg/kg-day)	6.99E-08	1.31E-07	mg/kg-day	3.00E-04	mg/kg-day		
				Exp. Route Total													
			Dermal	Benzo(a)pyrene	1.30E+00	mg/kg	4.95E-08	mg/kg-day	7E+00	1/(mg/kg-day)	3.61E-07	1.39E-07	mg/kg-day	NA	mg/kg-day	1.55E-11	
				N-Nitroso-di-n-propylamine	0.32	mg/kg	9.38E-10	mg/kg-day	7E+00	1/(mg/kg-day)	6.57E-09	2.63E-09	mg/kg-day	NA	mg/kg-day		
				Arsenic	2.1	mg/kg	1.85E-08	mg/kg-day	2E+00	1/(mg/kg-day)	2.77E-08	5.17E-08	mg/kg-day	3.00E-04	mg/kg-day		
				Exp. Route Total													
			Exposure Point Total							3.98E-07				1.55E-11			
										7.26E-07				5.48E-11			
	Soil	Air	Inhalation	Benzo(a)pyrene	1.30E+00	mg/kg	2.36E-12	mg/kg-day	NA			1.38E-07	mg/kg-day	NA	mg/kg-day	0.00E+00	
				N-Nitroso-di-n-propylamine	0.32	mg/kg	5.81E-13	mg/kg-day	NA			2.63E-09	mg/kg-day	NA	mg/kg-day		
				Arsenic	2.1	mg/kg	3.81E-12	mg/kg-day	4.30E-03	1/(mg/kg-day)	1.64E-14	5.17E-08	mg/kg-day	NA	mg/kg-day		
				Exp. Route Total							1.6E-14						
		Exposure Point Total								7.26E-07				5.48E-11			
										7.26E-07				5.48E-11			
Medium Total																	
			Exp. Route Total														
		Exposure Point Total															
		Exposure Point Total															
		Exposure Point Total															
Medium Total			Exposure Medium Total														
				Total of Receptor Risks Across All Media					7.26E-07	Total of Receptor Hazards Across All Media					5.48E-11		

TABLE 7.13 RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframes:																
Receptor Population:																
Receptor Age:																
Future																
Excavation/Construction Worker																
Adult																
Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
					Value	Units	Intake/Exposure Concentration	CSF/Unit Risk	Cancer Risk	Value	Units	Value	Units			
Surface Soil	Soil	Soil	Ingestion	Benzo(a)pyrene N-Nitroso-di-n-propylamine Arsenic	1.30E+00	mg/kg	5.95E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	4.34E-07	4.17E-06	mg/kg-day	NA	mg/kg-day	2.0E-09
							1.47E-08	mg/kg-day	7.00E+00	1/(mg/kg-day)	1.03E-07	1.03E-06	mg/kg-day	NA	mg/kg-day	
							9.62E-08	mg/kg-day	1.50E+00	1/(mg/kg-day)	1.44E-07	6.70E-06	mg/kg-day	3.00E-04	mg/kg-day	
							Exp. Route Total				6.81E-07					
							Dermal				1.10E-07	1.08E-06	mg/kg-day	NA	mg/kg-day	
				Benzo(a)pyrene N-Nitroso-di-n-propylamine Arsenic	1.30E+00	mg/kg	2.93E-10	mg/kg-day	7E+00	1/(mg/kg-day)	2.05E-09	2.05E-08	mg/kg-day	NA	mg/kg-day	1.2E-10
							5.77E-09	mg/kg-day	2E+00	1/(mg/kg-day)	8.68E-09	4.04E-07	mg/kg-day	3.00E-04	mg/kg-day	
							Exp. Route Total				1.20E-07					
							Exposure Point Total				8.01E-07					
							Exposure Medium Total									
		Air	Inhalation	Benzo(a)pyrene N-Nitroso-di-n-propylamine Arsenic	1.30E+00	mg/kg	7.38E-12	mg/kg-day	NA	NA	3.58E-13	1.38E-07	mg/kg-day	NA	mg/kg-day	0.0E+00
							1.27E-11	mg/kg-day	NA	NA	2.63E-09	mg/kg-day	NA	mg/kg-day		
							8.33E-11	mg/kg-day	4.30E-03	1/(mg/kg-day)	5.17E-08	mg/kg-day	NA	mg/kg-day		
							Exp. Route Total				3.6E-13					
							Exposure Point Total				8.01E-07					

TABLE 7.14 RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Commercial Worker
Receptor Age:	Adult

Medium		Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				Hazard Quotient	
						Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		
								Value	Units	Value	Units		Value	Units	Value		Units
Air	Air	Indoor Air	Inhalation of vapors	1,1,1-Trichloroethane	3240	ug/m ³	2.24E-01	mg/kg-day	NA	mg/kg-day	7.3E-05	6.3E-01	mg/kg-day	NA	mg/kg-day	5.9E-05	
				1,2-Dichloroethane	11.7	ug/m ³	8E-04	mg/kg-day	9.0E-02	mg/kg-day		2.3E-03	mg/kg-day	2.6E-02	mg/kg-day		
				Chloromethane	17	ug/m ³	1E-03	mg/kg-day	NA	mg/kg-day		3.3E-03	mg/kg-day	NA	mg/kg-day		
				Methylene chloride	1427.4	ug/m ³	1E-01	mg/kg-day	1.6E-03	mg/kg-day	1.6E-04	2.8E-01	mg/kg-day	NA	mg/kg-day		
				Trichloroethene	190.2	ug/m ³	1E-02	mg/kg-day	4.0E-01	mg/kg-day	5.3E-03	3.7E-03	mg/kg-day	NA	mg/kg-day		
				Vinyl chloride	25	ug/m ³	2E-03	mg/kg-day	3.0E-02	mg/kg-day	5.2E-05	4.9E-03	mg/kg-day	2.9E-02	mg/kg-day		
				Exp. Route Total	1413.9	ug/m ³	9.78E-02	mg/kg-day	NA	mg/kg-day	5.5E-03	2.8E-01	mg/kg-day	NA	mg/kg-day	2.0E-04	
				Exp. Route Total													
				Exposure Point Total													
				Exposure Medium Total							5.5E-03						2.0E-04
				Exp. Route Total													
				Exposure Point Total													
				Exposure Medium Total													
Medium Total																	
				Exp. Route Total													
				Exposure Point Total													
				Exposure Medium Total													
				Exp. Route Total													
				Exposure Point Total													
				Exposure Medium Total													
Medium Total																	

TABLE 8.1.RME
CALCULATION OF RADIATION CANCER RISKS
Reasonable Maximum Exposure

Site Name

Scenario Timeframe:
Receptor Population:
Receptor Age:

[illegible]

Total of Receptor Risks Across All Media

TABLE 9.1 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Route Totals	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Aquifer - Volatilization to ambient air	Tetrachloroethene		6.30E-07		6.30E-07	liver		7.10E-07		7.10E-07
			Trichloroethene		1.20E-05		1.20E-05	liver		7.10E-07		7.10E-07
			(Total)		1.28E-05		1.28E-05			7.10E-07		7.10E-07
				Total Risk Across Groundwater				Total Hazard Index Across All Media and All Exposure Routes				
				Total Risk Across All Media and All Exposure Routes				Total Liver HI				

TABLE 9.2 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Route Totals	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Aquifer - Volatilization to ambient air	Tetrachloroethene Trichloroethene (Total)		2.16E-08		2.80E-07	liver liver				
					6.03E-08		6.90E-05					1.70E-06
					8.20E-08		6.93E-05				1.70E-06	
Total Risk Across Groundwater				Total Hazard Index Across All Media and All Exposure Routes				Total Hazard Index Across All Media and All Exposure Routes				
6.93E-05				6.93E-05				1.70E-06				
								Total Liver HI				
								1.70E-06				

TABLE 9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Outputs

Scenario Timeframe: Current Receptor Population: Commercial Worker Receptor Age: Adult													
Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation	Dermal	Exposure Route Totals	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	
Subsurface Soil	Air	Volatilization to Ambient Air	Trichloroethylene Benzo(a)pyrene (Total)		3.50E-03		3.50E-03	Liver Respiratory and Upper Digestive Tract		3.50E-09		3.50E-09	
							3.50E-03						
				Total Risk Across Subsurface Soil				3.50E-03	Total Hazard Index Across All Media and All Exposure Routes				3.50E-09
				Total Risk Across All Media and All Exposure Routes				3.50E-03					

TABLE 9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPOs
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Current Receptor Population: Excavation/Construction Worker Receptor Age: Adult													
Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	
Subsurface Soil	Subsurface Soil	Direct contact with soil	Trichloroethene	5.3E-08	6.6E-13	1.1E-09	5.39E-08	Liver Respiratory/Digestive Tract Skin/multiple organs	6.6E-13	1.0E-02	3.0E-04	1.03E-02	
			Benzo(a)pyrene	6.7E-08		1.7E-08	8.42E-08			NA	NA		
			Arsenic	9.6E-07	8.8E-15	1.5E-08	9.77E-07				3.5E-04	3.50E-04	
			(Total)	2.54E-04	6.60E-13	3.32E-08	1.12E-06					1.07E-02	
Surface Soil	Surface Soil	Direct contact with soil	Trichloroethene	NA	1.30E-04		1.30E-04	Liver Respiratory and Upper Digestive Tract Respiratory and Upper Digestive Tract multiple organs Skin/multiple organs		2.30E-04	Total	2.30E-04	
			Benzo(a)pyrene	Total									2.30E-04
			N - Nitroso-d,n-propylamine	4.34E-07	NA	1.10E-07	5.44E-07		NA	NA	NA	NA	NA
			Arsenic	1.03E-07	3.58E-13	2.05E-09	1.05E-07		2.00E-09	1.20E-10	NA	NA	2.12E-09
				(Total)	1.22E-06	3.58E-13	1.21E-07	1.34E-06		NA	NA	2.12E-09	
				Total Risk Across Subsurface Soil					Total Hazard Index Across All Media and All Exposure Routes				
				Total Risk Across Surface Soil				1.31E-04					
				Total Risk Across All Media and All Exposure Routes				1.34E-06					
								1.32E-04					

TABLE 9.5 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Current Receptor Population: Landslapper Receptor Age: Adult												
Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation of Fugitive Dust	Dermal	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation of Fugitive Dust	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Direct contact with soil	Benzo(a)pyrene	2.11E-07		3.61E-07	5.72E-07	Respiratory and Upper Digestive Tract	NA	NA	NA	NA
			N - Nitroso di-n-propylamine	4.97E-08		6.57E-09	5.63E-08	multiple organs	NA	NA	NA	NA
			Arsenic	6.99E-08	1.64E-14	2.77E-08	9.78E-08	Skin/multiple organs	3.90E-11	1.55E-11	NA	5.45E-11
			(Total)	3.30E-07	1.64E-14	3.98E-07	7.28E-07		NA	NA	NA	5.45E-11
				Total Risk Across Surface Soil				Total Hazard Index Across All Media and All Exposure Routes				
				Total Risk Across all Media and All Exposure Routes								

TABLE 9.6 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCS
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Future Receptor Population: Resident Receptor Age: Adult				Non-Carcinogenic Hazard Quotient									
Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Route Totals	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	
Groundwater	Groundwater	Aquifer - Tap Water	Tetrachloroethene	6.80E-05		4.2E-05	1.10E-04	liver	3.00E-05		4.2E-05	7.20E-05	
			Trichloroethene	7.70E-04		1.30E-04	9.00E-04	NA	1.40E-06		5.1E-07	1.91E-06	
			Manganese	NA		NA	NA	Impairment of neurobehavioral functions	1.10E-03		5.8E-08	NA	
			Chromium VI	NA		NA	NA	Lungs	2.40E-06		3.2E-10	2.40E-06	
			Iron	NA		NA	NA		4.00E-03		4.00E-03	4.00E-03	
			Nickel	NA		NA	1.01E-03		2.10E-05		2.10E-05		
			(Total)	8.38E-04		1.72E-04	1.01E-03		5.15E-03		4.26E-05	4.10E-03	
Air	Air	Aquifer - Water Vapors at Shower Head	Tetrachloroethene		6.7E-03		6.70E-03	liver			7.9E-03	7.70E-04	
			Trichloroethene		2.0E-02		2.00E-02	Liver			1.2E-03	NA	
			Chromium VI		1.6E+00		1.60E+00	Lungs			2.9E-07	2.20E-07	
			Iron										
			Nickel										
			(Total)		1.63E+00	0.00E+00	1.63E+00			9.1E-03	0.00E+00	7.70E-04	
		Aquifer - Volatilization to ambient air	Tetrachloroethene		6.30E-07		6.30E-07	liver			7.10E-07	7.10E-07	
			Trichloroethene		1.20E-05		1.20E-05	liver			7.10E-07	7.10E-07	
			(Total)		1.26E-05		1.26E-05						
				Total Risk Across Groundwater					Total Hazard Index Across All Media and All Exposure Routes				
				1.63E+00					4.87E-03				
				1.63E+00									
				Total Risk Across All Media and All Exposure Routes									
									Total Liver HI				
									Total Lung HI				
									7.51E-05				
									2.62E-06				

TABLE 9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COFCs
REASONABLE MAXIMUM EXPOSURE
Computer Calculs

Non-Carcinogenic Hazard Quotient												
Carcinogenic Risk				Non-Carcinogenic Hazard Quotient								
Medium	Exposure Medium	Exposure Point	Chemical	Ingestion	Inhalation	Dermal	Exposure Route Totals	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Aquifer - Tap Water	Tetrachloroethene	3.20E-05		1.90E-05	5.10E-05	Liver	7.20E-05		4.20E-05	1.14E-04
			Trichloroethene	3.70E-04		6.00E-05	4.30E-04	Liver	3.20E-06		5.10E-07	3.71E-06
			Manganese	NA		NA	NA	Impairment of neurobehavioral functions	2.60E-03		5.80E-08	2.60E-03
			Chromium VI	NA		NA	NA	Lungs	5.80E-06		2.00E-10	5.80E-06
			Iron	NA					9.50E-03			9.50E-03
(Total)				4.02E-04		7.90E-05	4.81E-04		4.90E-05		1.40E-07	4.91E-05
									</			

TABLE 9.8 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Non-Carcinogenic Hazard Quotient													
Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			Exposure Route Totals	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	
				Ingestion	Inhalation	Dermal							
Groundwater	Groundwater	Aquifer - Tap Water	Tetrachloroethene	2.0E-05			2.0E-05	Liver	1.1E-05			1.1E-05	
			Trichloroethene	2.3E-04			2.3E-04	Liver	4.8E-07			4.8E-07	
			Manganese	NA			NA	Impairment of neurobehavioral functions	3.9E-04			3.9E-04	
			Chromium VI	NA			NA	Lung	6.3E-07			6.3E-07	
			Iron						1.4E-03			1.4E-03	
Subsurface Soil	Air	Volatilization to Ambient Air	Nickel	(Total) 2.51E-04			2.51E-04		7.5E-06			7.5E-06	
			Trichloroethene			3.50E-03		3.50E-03	Liver	1.85E-03	0.00E+00	3.50E-09	1.85E-03
			Benz(a)pyrene					Respiratory and Upper Digestive Tract	3.50E-09			NA	3.50E-09
			(Total)				3.50E-03						1.85E-03
			Total Risk Across Groundwater				Total Hazard Index Across All Media and All Exposure Routes						
Total Risk Across Subsurface Soil													
Total Risk Across All Media and All Exposure Routes													

TABLE 9.9 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Outputs

Scenario Timeline: Future
Receptor Population: Excavation/Construction Worker
Receptor Age: Adult

		Carcinogenic Risk				Non-Carcinogenic Hazard Quotient						
Medium	Exposure Medium	Exposure Point	Chemical	Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Direct contact with soil	Trichloroethene	4.34E-07	6.6E-13	1.1E-09	4.35E-07	Liver	6.6E-13	1.0E-02	3.0E-04	1.03E-02
			Benzo(a)pyrene	1.03E-07		1.7E-08	1.20E-07	Respiratory and Upper Digestive Tract		NA	NA	NA
			Arsenic	1.44E-07	8.9E-15	1.5E-08	1.59E-07	skin; multiple organs			3.5E-04	3.50E-04
			(Total)	6.81E-07	8.77E-15	3.32E-08	7.14E-07				1.07E-02	1.07E-02
Surface Soil	Surface Soil	Volatilization to Air	Trichloroethene	NA	1.30E-04			Liver		2.30E-04		2.30E-04
			Benzo(a)pyrene		1.30E-04		1.30E-04	Respiratory and Upper Digestive Tract			Total	2.30E-04
			(Total)									
Surface Soil	Surface Soil	Direct contact with soil	Benzo(a)pyrene	5.3E-08		1.10E-07	1.63E-07	Respiratory and Upper Digestive Tract	NA	NA	NA	NA
			N - Nitroso-d,n-propylamine	6.7E-08	NA	2.05E-09	6.89E-08	NA	NA	NA	NA	NA
			Arsenic	9.6E-07	3.58E-13	8.66E-09	9.71E-07	skin; multiple organs	2.00E-09	1.20E-10		2.12E-09
			(Total)	1.08E-06	3.58E-13	1.21E-07	1.20E-06		NA	NA	NA	2.12E-09
			Total Risk Across Subsurface Soil				Total Hazard Index Across All Media and All Exposure Routes					
			Total Risk Across Surface Soil									
			Total Risk Across All Media and All Exposure Routes									

TABLE 9.10 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Future
Receptor Population: Landscaper
Receptor Age: Adult

Medium		Exposure Medium	Exposure Point	Cardiogenic Risk				Non-Carcinogenic Hazard Quotient				
		Chemical		Ingestion	Inhalation of Fugitive Dust	Dermal	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation of Fugitive Dust	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Direct contact with soil	Benzo(a)pyrene N - Nitroso-di-n-propylamine Arsenic (Total)	2.11E-07		3.61E-07	5.72E-07	Respiratory and Upper Digestive Tract	NA	NA	NA	NA
				4.97E-08		6.57E-09	5.63E-08	NA	NA	NA	NA	
				6.99E-08	1.64E-14	2.77E-08	9.79E-08	Skin/multiple organs	3.90E-11	1.55E-11	NA	5.45E-11
				3.31E-07	1.64E-14	3.96E-07	7.26E-07	NA	NA	NA	5.45E-11	
				Total Risk Across Surface Soil				Total Hazard Index Across All Media and All Exposure Routes				
				Total Risk Across all Media and All Exposure Routes								
				7.26E-07				5.45E-11				
				7.26E-07				5.45E-11				

TABLE 10.1. RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

[illegible]

Total Organ 1 HI Across All Med

2.8E-02

Total Organ 2 HI Across All Med

1.6E+00

TABLE 10.2.FME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

				Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
Medium	Exposure Medium	Exposure Point	Chemical	Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water	Tetrachloroethene	3.20E-05		1.90E-05		5.10E-05					
			Trichloroethene	3.70E-04		6.00E-05		4.30E-04					
				Chemical Total	3.7E-04		6.0E-05		4.8E-04				
				Exposure Point Total					4.8E-04				
				Exposure Medium Total									
Medium Total	Air	Volatilization from Shower	Tetrachloroethene		4.9E-03			6.7E-03					
			Trichloroethene		1.3E-02			2.0E-02					
				Chromium VI		1.2E+00			1.6E+00				
				Chemical Total		1.2E+00			1.6E+00				
				Exposure Point Total					1.6E+00				
			Exposure Medium Total					1.6E+00					
			Chemical Total										
			Radionuclide Total										
				Exposure Point Total									
				Exposure Medium Total									
				Receptor Total									
			Chemical Total										
			Radionuclide Total										
				Exposure Point Total									
				Exposure Medium Total									
				Receptor Total									
				Receptor Risk Total					Receptor HI Total				
				1.6E+00									

Total Organ 1 HI Across All Media 2.7E-02
Total Organ 2 HI Across All Media 1.6E+00

TABLE 10.3 RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Receptor Population:	Commercial Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Air		Trichloroethene		3.50E-03			3.50E-03 0.00E+00					
			Chemical Total	0.0E+00		0.0E+00		3.5E-03					
	Exposure Medium Total	Exposure Point Total						3.5E-03					
			Chemical Total		0.0E+00			0.0E+00					
			Exposure Point Total					0.0E+00					
	Exposure Medium Total	Exposure Point Total						3.5E-03					
Medium Total													
			Chemical Total										
			Radionuclide Total										
	Exposure Point Total												
			Chemical Total										
			Radionuclide Total										
	Exposure Point Total												
Exposure Medium Total													
Medium Total													
Receptor Total								3.5E-03					
								Receptor Risk Total				Receptor HI Total	

Total Organ 1 HI Across All Media = 3.5E-03
Total Organ 2 HI Across All Media =

TABLE 10.4.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Commercial Worker
Receptor Age:	Adult

				Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
Medium	Exposure Medium	Exposure Point	Chemical	Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Air	Air	Trichloroethene		3.50E-03			3.50E-03 0.00E+00					
			Chemical Total	0.0E+00		0.0E+00		3.5E-03					
			Exposure Point Total					3.5E-03					
			Exposure Medium Total										
Medium Total													
			Chemical Total		0.0E+00			0.0E+00					
			Exposure Point Total					0.0E+00					
			Exposure Medium Total					3.5E-03					
Groundwater	Groundwater	Tap water	Tetrachloroethene	2.0E-05				2.0E-05 2.3E-04 2.5E-04					
			Trichloroethene	2.3E-04				2.3E-04					
			Chemical Total	2.51E-04				2.5E-04					
			Radionuclide Total										
			Exposure Point Total					2.5E-04					
			Exposure Medium Total										
			Chemical Total										
			Radionuclide Total										

Total Organ 1 HI Across All Media = 3.80E-03
Total Organ 2 HI Across All Media =

TABLE 10.5.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Current
Receptor Population:	Construction/Excavation
Receptor Age:	Adult

				Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
Medium	Exposure Medium	Exposure Point	Chemical	Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total	
Subsurface Soil	Air		Trichloroethene		1.30E-04			1.30E-04 0.00E+00						
			Chemical Total				1.3E-04							
			Exposure Point Total				1.3E-04							
			Exposure Medium Total											
			Chemical Total		0.0E+00			0.0E+00 0.0E+00						
			Exposure Point Total											
			Exposure Medium Total											
			Exposure Medium Total											
			Radionuclide Total					0.0E+00						
			Exposure Point Total											
Exposure Medium Total														
Exposure Medium Total														
Medium Total														
			Chemical Total											
			Exposure Point Total											
			Exposure Medium Total											
			Exposure Medium Total											
			Radionuclide Total											
			Exposure Point Total											
			Exposure Medium Total											
			Exposure Medium Total											
			Receptor Total											
			Exposure Point Total											
Exposure Medium Total														
Exposure Medium Total														
Medium Total														
Receptor Total														

Total Organ 1 HI Across All Media = 1.3E-04

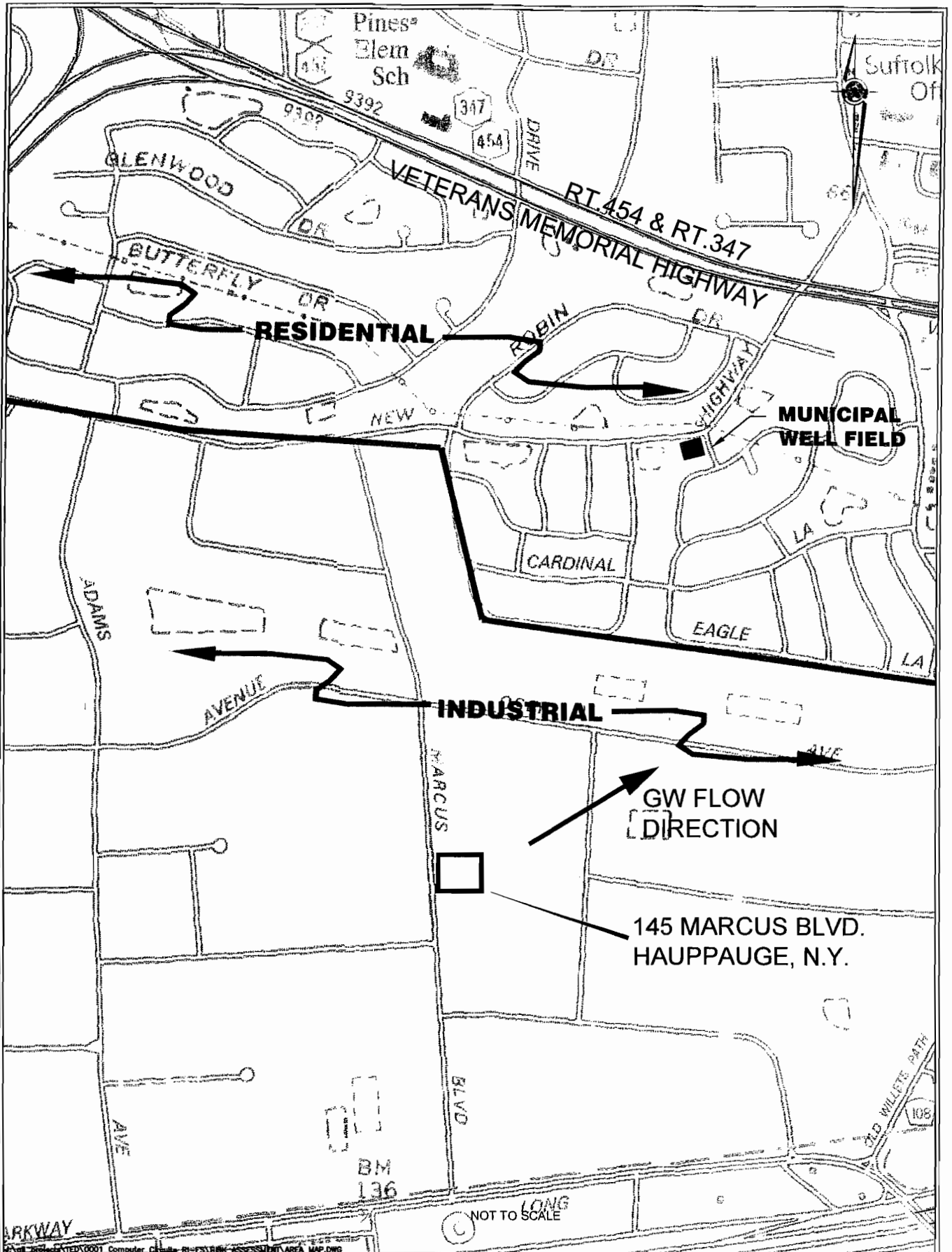
TABLE 10.6.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Computer Circuits

Scenario Timeframe:	Future
Receptor Population:	Construction/Excavation
Receptor Age:	Adult

				Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
Medium	Exposure Medium	Exposure Point	Chemical	Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total	
Subsurface Soil	Air		Trichloroethene		1.30E-04			1.30E-04 0.00E+00						
			Chemical Total	0.0E+00			1.3E-04							
			Exposure Point Total				1.3E-04							
			Exposure Medium Total											
			Medium Total											
			Chemical Total	0.0E+00			0.0E+00							
			Exposure Point Total				0.0E+00							
			Exposure Medium Total				1.3E-04							
			Medium Total											
			Radionuclide Total						0.0E+00					
			Exposure Point Total											
			Exposure Medium Total											
			Medium Total											
			Receptor Total											

Total Organ 1 HI Across All Media = 1.30E-04
Total Organ 2 HI Across All Media =

FIGURES



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SITE MAP
FORMER COMPUTER CIRCUITS FACILITY
145 MARCUS BLVD.
HAUPPAUGE, N.Y.

Project: TEL00001
Designed by: JPR
Reviewed by: LS
Drawn by: JAK

Sheet No: 1
Date: 3/21/01

The diagram illustrates the pathways from various sources to receptors, organized into columns: Origin, Primary Sources, Secondary Sources, Secondary Release Mechanism, Pathway, Exposure Route, and Receptors. Receptors are categorized into Area Residents, Commercial Workers, Const/Maint. Workers, and Landscape Workers. Pathways include Infiltration/Percolation, Volatilization, Air, Groundwater, Surface Soil, Dust, Air/Wind, and Surface Runoff. Exposure routes include Dermal Contact, Ingestion, and Inhalation. The diagram shows how contaminants from leach pools or surface overflow can reach different receptor groups through various environmental pathways.

Figure 2

