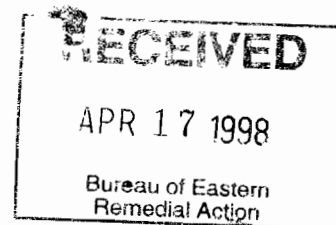


**Interim Remedial Measures Final Report
Tishcon Corporation
125 State Street
Westbury, New York**

3198

March 1998



Prepared for:

**Tishcon Corporation
30 New York Avenue
Westbury, New York 11590**

Prepared by:

**CA RICH CONSULTANTS, INC.
404 Glen Cove Avenue
Sea Cliff, New York 11579**



CA RICH CONSULTANTS, INC.

CERTIFIED GROUND-WATER AND
ENVIRONMENTAL SPECIALISTS

April 2, 1998

NYSDEC

Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 10591-5805

Attention: Jeffrey Trad, P.E.

Re: **Interim Remedial Measures Final Report**
Tishcon Corporation, Site No.: 130043C
125 State Street
Agreement Index No.: W1-0757-95-05

Dear Mr. Trad:

1.0 INTRODUCTION

In accordance with the above-referenced Agreement, CA RICH is pleased to provide you with the following Interim Remedial Measures (IRM) Report. This Report includes the following items.

- BACKGROUND
- SUMMARY OF WORK PERFORMED
- SUMMARY AND CONCLUSIONS
- CERTIFICATION
- REFERENCES

2.0 BACKGROUND

Tishcon leased the space at 125 State Street from 1984 to October 31, 1996. The tenant at this building prior to Tishcon was a manufacturer of aluminum furniture. The Tishcon facility at 125 State Street produced two basic dietary supplement and vitamin products - powders and tablets. The powders were produced in a dry blending process and were shipped off-site to customers for packaging and distribution. The tablets began similarly but the blended powders were compressed into tablets. The finished tablets were boxed and shipped to other locations for distribution. In addition to blending and tableting, the coating of tablets was also performed at this facility. For a detailed description of the processes performed at this facility, refer to the Remedial Investigation (R.I.) Report, (Ref.1).

During the years 1985 through 1993, the chemicals methylene chloride, 1,1,1-trichloroethane and methanol were also used at this facility in the tablet coating process. They were used in the process of applying coatings to the tablets and then discharged either through vents to the atmosphere as an air discharge or as fugitive emissions. As of 1993, these chemicals were no longer used at the State Street Facility.

As of October 31, 1996, the Tishcon Corporation has terminated their lease and vacated the facility at 125 State Street. The equipment and processes have been moved to other locations outside of the State of New York.

2.1 Physical Layout of Building

The Tishcon Corporation facility at 125 State Street consisted of a two-story building built in 1966. The property includes a driveway that is underlain by four storm drains. An illustration of these pools is included as Figure 1. Plans on file at the Town of North Hempstead Building Department indicate that the original construction included on-site cesspool(s) for wastewater disposal. The number and location of the cesspools were not recorded in the file, however, available records indicate the presence of one cesspool located on the east side of the building. According to the Nassau County Department of Public Works (NCDPW), the building was connected to municipal sewers in 1985, shortly after Tishcon occupied the building. The NCDH conducted dye tests of the floor drains in the Facility during the Summer of 1995 and determined that all of the floor drains tested discharge to the municipal sewer.

Roof drains were not included on any of the reviewed building plans, although a building survey dated June, 1967, states that roof leaders and gutters are connected to drywells. A drum storage area was located in the southwest corner of the property (see Figure 1) for storage of the ethyl alcohol-based shellac. The drums were stored on spill pallets in a masonry shed.

2.2 Previous Soil Sampling and Removals at this Site

In the past, equipment used in the process of blending raw materials and forming vitamin tablets was rinsed out in the driveway where the storm drains are located (see Figure 1). Rinse water used during this process subsequently entered storm drain 1. During 1993, the Nassau County Department of Health (NCDH) requested that sediment contaminated with volatile organics & metals be removed from the four storm drains and one sanitary distribution box in the driveway and that the material removed be properly disposed.

During August of 1993, a partial removal of the leaching pool sediments was performed. The removal of contaminated sediments from storm drain 3 was completed and the results of the end-point samples were acceptable to NCDH. Soil was also removed from storm drain 1, however, the end-point sample indicate that the compounds chloroform, ethyl benzene, methylene chloride and xylene remained at concentrations above the NCDH action levels. Soil removal from storm drains 2, 4 and distribution box 5 had not been completed during the 1993 effort. Copies of the sample results are included in the R.I. Work Plan (Ref. 2).

CA RICH was retained by Tishcon in October, 1994 to prepare a storm drain remediation plan for the NCDH and to complete the clean out of these drains in response to the NCDH's letter of March 25, 1994. A copy of the NCDH letter and the NCDH-approved Plan are included in the R.I. Work Plan (Ref. 2). During February, 1995, CA RICH performed soil borings in storm drains 1, 2, 4 and sanitary distribution box 5 using a Geoprobe™ soil sampling device. An initial soil core was collected at two feet below the bottom of the pool. Soil samples were retrieved and analyzed in the field using a portable organic vapor meter. This procedure was continued until no detections were recorded with the field meter.

At least one sample from each boring was placed in a sample bottle and analyzed by a NYS-certified laboratory for VOCs using EPA methods 8010/8020 and for the eight RCRA metals. The results of these samples were used to determine the depths and volumes of soil for removal. Waste characterization samples were collected of the storm water and the underlying sediments in the pools. This information is presented in our March, 1995 report which is included in the R.I. Work Plan (Ref. 2).

During June and July, 1994 a NYSDEC contractor collected soil samples at the 17-19, 27-29 and 47-49 foot depth horizons from several locations on the 125 State Street property. These borings were designated as SGP-76, 77, 78 and 79 in the NYSDEC report (Ref. 3). The results of these sample analyses are included in this R.I. Report (Ref. 1).

2.3 Geologic Setting

Tishcon is situated upon the glacial outwash soil deposits of Long Island at an elevation of approximately 130 feet above mean sea level. Based upon field measurements from the NYSDEC, the direction of shallow groundwater flow is to the south-southwest. The elevation of the water table occurring within the underlying upper glacial aquifer is approximately 50 feet below land surface.

The Upper Glacial Formation is underlain by the Magothy Formation, the principal water supply aquifer for most of Nassau County. The Magothy Formation is, in turn, underlain by the Raritan Formation. The Raritan Formation is composed of the upper Raritan Clay, a regional confining layer, followed by the more permeable Lloyd Sand. The Lloyd Sand sits directly upon crystalline bedrock.

2.4 Identification of Potential Source Areas

Based on our review of files at the NCDH, previous sample results collected from this property, company records, employee interviews, engineering knowledge, site inspections and chemical analyses, the following source areas were identified in the R. I Report:

- storm drains 1, 2 and 4; and,
- the sanitary distribution box in the driveway, (location 5 on the site Plan).

The clean out of storm drains 2, 4 and the sanitary distribution box are the subject of this IRM. Remediation of storm drain 1 will be addressed as a separate task.

3.0 SUMMARY OF WORK PERFORMED

3.1 Waste Characterization Analyses

A waste characterization sample was collected on July 29, 1997 for the purposes of selecting a waste disposal facility. One composite soil sample was collected from storm drains 2, 4 and distribution box 5. These results and the waste disposal approval are included in Appendix A. These results were used to obtain approval for disposal prior to beginning the excavations at the Browning-Ferris Industries (BFI) Carbon Limestone Landfill located in Lowellville, Ohio. Based on the results of the waste characterization analysis, this material was approved for disposal as a non-hazardous waste.

The bottom of storm drain 2 was filled with storm water that had to be pumped prior to excavation of the drain. The water was sampled for waste characterization purposes and to obtain approval for disposal of this water at the NCDPW Cedar Creek treatment plant. The waste characterization analyses and disposal approval are included in Appendix B.

3.2 Clean out of Pools 2, 4, distribution box 5 and the backfilled sewer line

The bottom of storm drains 2, 4 and distribution box 5 were excavated using a vacuum truck and a high vacuum excavator or "super sucker". As indicated in the NCDH's March 25, 1994 letter (included in Ref. 2), no action is required at storm drain 3 based on American Consulting's post-remediation, end-point sample.

A vacuum truck was used to remove the storm water from storm drain 2. Approximately 1,127 gallons of storm water were removed and transported to the NCDPW treatment plant for disposal.

Soil excavation was then performed on storm drains 2, 4 and distribution box 5 using the truck-mounted super sucker. Soil was excavated from the bottom of the structures and screened using a hand auger and an HNu meter. The excavation extended until the soil was visibly clean and the meter reading were less than 5 ppm.

The following table summarizes the excavation activities at this site.

	<u>SD-02</u>	<u>SD-04</u>	<u>Dist. Box 5</u>
Date:	10/28/97	10/28/97	10/28/97
Diameter:	8 foot	8 foot	3 foot
Starting depth of water:	10 feet	NA	NA
Ending depth of water:	13 feet	NA	NA
Est. volume of water:	1,127 gals.	NA	NA
Disposal facility:	NCDPW	NA	NA
Starting depth of soil:	13 feet	13.5 feet	2.5 feet
Ending depth of soil:	21 feet	21 feet	6.5 feet
Est. volume of soil:	10 cu.yd.	7 cu. yd.	1 cu. yd.
Classification:	Non-Haz.	Non-Haz.	Non-Haz.
Disposal facility:	BFI	BFI	BFI

All excavated soil was removed and transported by RGM Liquid Waste Disposal, Inc. and consolidated at their Deer Park, NY yard. The excavated material was then transported under non-hazardous waste manifest to Browning Ferris Industries (BFI) solid waste landfill in Lowellville, Ohio. A copy of the manifest for 18 cubic yards of soil is attached to this Report as Appendix C.

The backfilled soil below the air conditioner condensate line and the buried sewer pipe connecting the building to the sewer main below State Street were screened with the HNu meter and all readings registered below 5 ppm. No soil was removed from these areas.


4.0 SUMMARY AND CONCLUSIONS

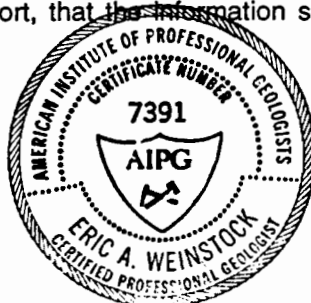
End point samples were collected from the bottom of the three excavated structures, the buried sewer line and the condensate line. The results indicate that volatile organic compounds including 1,1,1-TCA were undetected at all points with the exception of 2 to 4 ug/kg of methylene chloride, a common laboratory cleaning agent. Similarly, all of the metal results were either below the NYSDEC Cleanup objectives or below the established eastern USA background levels (Ref. 4). A summary of these results are included on Tables 1 and 2 of this Report.

Based the volume of soil removed and the results of the end-point sample analysis, storm drains 2, 4 and distribution box 5 have been effectively remediated. With the completion of this IRM, we recommend that a Remedial Action focused on the cleanup of Storm Drain SD-01 be initiated after the Record Of Decision (ROD) for this site has been completed.

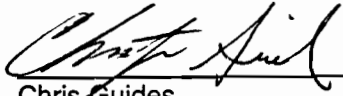
5.0 CERTIFICATION

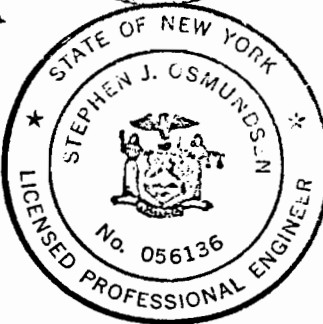
We certify that to the best of our knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this Report, that the information submitted in this Report is true, accurate and complete.


Eric A. Weinstock
Associate

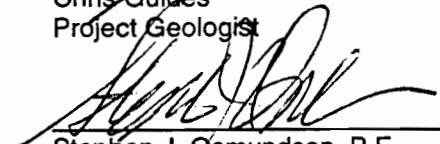


4/2/98
Date


Chris Guides
Project Geologist



4/2/98
Date


Stephen J. Osmundsen, P.E.
Project Engineer

4/2/98
Date

6.0 REFERENCES

1. CA RICH, (1996), Focused Remedial Investigation Report, Tishcon Corp., 125 State Street, Westbury, NY
2. CA RICH, (1996), Focused Remedial Investigation Work Plan, Tishcon Corp., 125 State Street, Westbury, NY
3. NYSDEC, (1995), Site Investigation Report, New Cassel Industrial Area, North Hempstead, Nassau County.
4. NYSDEC, January 24, 1994, Technical and Administrative Guidance Memorandum No. HWR 94-4046

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Tables

TABLE 1

Summary of Soil Analysis
After Data Validation
Tishcon Corporation
State Street Facility

Location Sample ID Date Sampled	Storm Drain 2		Sewer Line		Condensate Line		Storm Drain 4		Distribution	
	SS-SD2 10/28/97	Duplicate SS-SD6 10/28/97	Backfill SS-BF1 10/28/97	Backfill SS-CL1 10/28/97	SS-SD4 10/28/97	SS-DB5 10/28/97	Box 5	NYSDEC TAGM *		
Volatile Organics (NYSDOH Method 95-1)	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	Cleanup Objectives
Chloromethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Bromomethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Vinyl chloride	11 U	11 U	10 U	11 U	10 U	12 U	12 U	200		
Chloroethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	1,900		
Methylene chloride	11 U	11 U	10 U	11 U	10 U	12 U	12 U	100		
Acetone	11 U	11 U	10 U	11 U	10 U	12 U	12 U	200		
Carbon Disulfide	11 U	11 U	10 U	11 U	10 U	12 U	12 U	2,700		
1,1-Dichloroethene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	400		
1,1-Dichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	200		
1,2-Dichloroethene (total)	11 U	11 U	10 U	11 U	10 U	12 U	12 U	300		
Chloroform	11 U	11 U	10 U	11 U	10 U	12 U	12 U	300		
1,2-Dichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	100		
2-Butanone	11 U	11 U	10 U	11 U	10 U	12 U	12 U	300		
1,1,1-Trichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	800		
Carbon Tetrachloride	11 U	11 U	10 U	11 U	10 U	12 U	12 U	600		
Bromodichloromethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
1,2-Dichloropropane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
cis-1,3-Dichloropropene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Trichloroethene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	700		
Dibromochloromethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
1,1,2-Trichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Benzene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	60		
trans-1,3-Dichloropropene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Bromoform	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
4-Methyl-2-Pentanone	11 U	11 U	10 U	11 U	10 U	12 U	12 U	1,000		
2-Hexanone	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Tetrachloroethene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	1,400		
1,1,2,2-Tetrachloroethane	11 U	11 U	10 U	11 U	10 U	12 U	12 U	600		
Toluene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	1,500		
Chlorobenzene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	1,700		
Ethylbenzene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	5,500		
Styrene	11 U	11 U	10 U	11 U	10 U	12 U	12 U	NV		
Xylene (total)	11 U	11 U	10 U	11 U	10 U	12 U	12 U	1,200		

Notes:

ug/Kg: micrograms per kilogram - parts per billion.

U: compound not detected at or above detection limit. Number represents compound detection limit.

* NYSDEC Division Technical and Administrative Guidance Memorandum.

Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 1994.

TABLE 2

**Summary of Soil Analysis
After Data Validation
Tishcon Corporation
State Street Facility**

Location Sample ID Date Sampled	Storm Drain 2 SS-SD2 10/28/97	Storm Drain 2 Duplicate SS-SD6 10/28/98	Sewer Line Backfill SS-BF1 10/28/97	Condensation Line Backfill SS-CL1 10/28/97	Storm Drain 4 SS-SD4 10/28/97	Distribution Box 5 SS-DB5 10/28/97	FIELD 10/28/97	NYSDEC TAGM* Cleanup Objectives for Soil Containing 1% Carbon	Eastern USA Background
RCRA METALS Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	1.1 J	1.1 **	2.2 J	8.8 J	1.2 J	3.7 J	2.4 U	7.5	3.0-12
Barium	3.1 B	5.0 B	12.8 B	5.6 B	3.1 B	32.6	4.6 U	300	15-600
Cadmium	0.03 U	0.03 U	0.15 B	0.03 U	0.03 U	0.18 B	0.30 U	1	0.1-1
Chromium	2.0 J	3.5	5.2 J	5 J	2.9 J	11.4 J	1.0 U	10	1.5-40
Lead	1.2 J	1.5 J	8 J	2.8 J	9.4 J	6.6 J	1.9 J	200-500	200-500
Mercury	0.05 U	0.02 R	0.10 U	0.07 U	0.05 U	0.10 U	0.07 U	0.1	0.001-0.2
Selenium	0.23 UJ	0.51 UJ	0.23 UJ	0.32 J	0.24 UJ	0.27 UJ	4.8 J	2	0.1-3.9
Silver	0.08 UJ	0.08 U	0.08 UJ	0.08 UJ	0.08 UJ	0.09 UJ	0.88 J	SB	NA

Notes:

mg/kg: milligrams per kilogram - parts per million.

J: Indicates an estimated value.

B: reported value obtained from a reading that was less than the Constract Required detection limit,
but greater than or equal to the Instrument Detection Limit.

U: analyte was analyzed for, but not detected.

UJ: qualification indicates an undetected analyte with the detection limit estimated.

R: result is rejected and does not meet minimum QA/QC criteria.

SB: site background

NA: not available

* NYSDEC Division Technical and Administrative Guidance Memorandum:

Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 199.

** Negate due to Lead.

Figures

Figure 1: [Faint, illegible text]

Figure 2: [Faint, illegible text]

Figure 3: [Faint, illegible text]

Figure 4: [Faint, illegible text]

Figure 5: [Faint, illegible text]

Figure 6: [Faint, illegible text]

Figure 7: [Faint, illegible text]

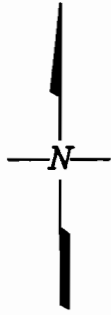
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Figure 9: [Faint, illegible text]

Figure 10: [Faint, illegible text]

Figure 11: [Faint, illegible text]

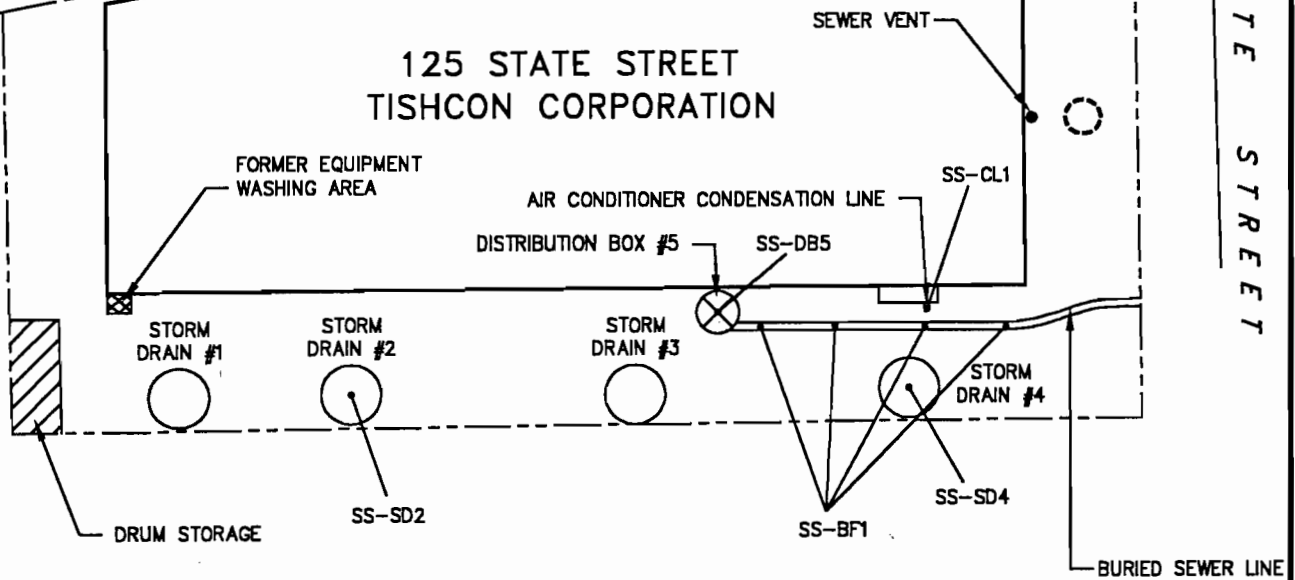
Figure 12: [Faint, illegible text]





LONG ISLAND RAILROAD

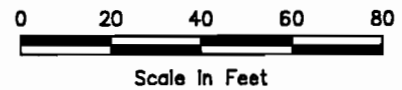
STATE STREET

125 STATE STREET TISHCON CORPORATION



LEGEND

-  APPROXIMATE LOCATION OF STORM DRAIN
-  FORMER CESSPOOL



CA RICH CONSULTANTS, INC.	
Certified Ground-Water and Environmental Specialists 404 Glen Cove Avenue, Sea Cliff, NY 11579	
TITLE: SITE PLAN	
DATE: 12/17/97	
SCALE: AS SHOWN	
FIGURE: 1	DRAWN BY: S.M.
DRAWING NO: 3237-01D	APPR. BY: E.A.W.
TISHCON CORPORATION 125 STATE STREET WESTBURY, NEW YORK	

Appendix A



Corporate Waste
Approval Group
Drowning-Fairis, Inc.

WASTE APPROVAL FORM

Date	: 09/23/97
BFI Location	: Imperial Landfill
BFI Initiator	: Nepon, Adam
Generator	: Tisdnon Corporation
Generator Location	: Westbury, NY
WCD Number	: AZ27084
BFI Number	: 258308

WASTE DESCRIPTION: Sludge, Stormwater

SAFETY PRECAUTIONS: Avoid Skin and Eye Contact.

RECOMMENDED MANAGEMENT: Direct Burial

Facility... Carbon Limestone Landfill

COMMENTS:

Approved for one time disposal only.

The following items were reviewed by the Corporate Waste Approval Group:
a. Analytical data from Nytest Environmental, Inc. dated 8/15/97

All wastes containing free liquids must be solidified before disposal. Liquid waste is defined as any waste material determined to contain free liquids defined by Method 9005 "Paint Filter Liquids Test".

The above is a recommendation of BFI. It must be understood that management of the waste for treatment and/or disposal at the designated facility must be in compliance with the facility's permit and applicable federal, state, and local regulations. This approval is based upon a review of the information provided by the generator and is contingent upon the receipt at the treatment and/or disposal facility of a waste material essentially equivalent in chemical composition and physical properties to that as defined above.

This waste stream has been assigned BFI Waste Code NY/855/880923/258308

John P. Eckert
Technical Representative

NEI Report of Analysis

General Chemistry

Client Name: C.A. RICH CONSULTA

Client ID: WC-SSD

Lab ID: 31890-01

Date Collected: 7/29/97

Date Received: 7/29/97

Matrix: Soil

Concentration in: Dry Weight

Parameter	Reporting Limit	Units	Result	Flag	Dilution Factor	Date Prepped	Date Analyzed	Analyst Initial
Corrosivity	0.01	inch/yr	0.01	U	1.00	7/30/97	7/30/97	ML
Ignitability	—	Degrees F	212	>	1.00	7/30/97	7/30/97	ML
PH	1.00	NA	7.83		1.00	7/30/97	7/30/97	ML
Reactive Cyanide	1.00	ppm	1.00	U	1.00	7/30/97	7/30/97	ML
Reactive Sulfide	1.00	ppm	1.00	U	1.00	7/30/97	7/30/97	ML
Total Petroleum Hydrocarbons	13.4	mg/kg	217		1.00	8/4/97	8/4/97	ML

U: Below reporting limit
 E: Above method limit
 NA: Not available
 NC: Not Calculable

000090

NYTEST ENVIRONMENTAL INC.

F-LIST ANALYSIS DATA SHEET

SAMPLE MATRIX : SOIL
CONC. LEVEL : LOW
EXTRACTION DATE : 8/12/97
ANALYSIS DATE : 8/14/97

SAMPLE ID : WC-SSD
LAB SAMPLE ID : 3189001
DIL FACTOR : 1.00
% MOISTURE : 26

CMPD #	CAS Number	COMPOUND	MG/KG	
			(DRY WEIGHT BASIS)	
1	67-56-1	METHANOL	6.8	U
2	78-83-1	ISOBUTYL ALCOHOL	6.8	U
3	71-36-3	n-BUTYL ALCOHOL	6.8	U
4	110-80-5	2-ETHOXY ETHANOL	6.8	U

000075

PCB - FORM 1
NYTEST ENVIRONMENTAL INC.

TCL PCB ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX : SOIL SAMPLE ID : WC-SSD
CONC. LEVEL : MED LAB SAMPLE ID : 3189001
EXTRACTION DATE : 07/31/97 DIL FACTOR : 1.00
ANALYSIS DATE : 08/07/97 % MOISTURE : 26

MG/KG

CMPD # CAS Number PCB COMPOUND

1	12674-11-2	Aroclor-1016	2.7	U
2	11104-28-2	Aroclor-1221	2.7	U
3	11141-16-5	Aroclor-1232	2.7	U
4	53469-21-9	Aroclor-1242	2.7	U
5	12672-29-6	Aroclor-1248	2.7	U
6	11097-69-1	Aroclor-1254	2.7	U
7	11096-82-5	Aroclor-1260	2.7	U

000068

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC-SSD

Lab Name: NYTEST ENV INC

Contract: 9723158

Lab Code: NYTEST Case No.: 31890

SAS No.:

SDG No.: 31890

Matrix: (soil/water) WATER

Lab Sample ID: 3189001

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: Q8725.D

Level: (low/med) LOW

Date Received: 07/29/97

% Moisture: not dec. 0 dec.

Date Extracted: 07/31/97

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 08/07/97

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (mg/L or mg/Kg) MG/L	Q
95-48-7	2-Methylphenol	0.01	U
	3+4-Methylphenol	0.02	U
121-14-2	2,4-Dinitrotoluene	0.01	U
118-74-1	Hexachlorobenzene	0.01	U
87-68-3	Hexachlorobutadiene	0.01	U
67-72-1	Hexachloroethane	0.01	U
98-95-3	Nitrobenzene	0.01	U
87-86-5	Pentachlorophenol	0.05	U
110-86-1	Pyridine	0.01	U
95-95-4	2,4,5-Trichlorophenol	0.01	U
88-06-2	2,4,6-Trichlorophenol	0.01	U
106-46-7	1,4-Dichlorobenzene	0.01	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC-SSD

Lab Name: NYTEST ENV INC	Contract: 9723158
Lab Code: NYTEST Case No.: 31890	SAS No.: SDG No.: 31890
Matrix: (soil/water) SOIL	Lab Sample ID: 3189001
Sample wt/vol: 30.0 (g/mL) G	Lab File ID: R7175.D
Level: (low/med) LOW	Date Received: 07/29/97
% Moisture: not dec. 30 dec.	Date Extracted: 00/00/00 7/30/97
Extraction: (SepF/Cont/Sonc) SONC	Date Analyzed: 08/04/97
GPC Cleanup: (Y/N) N	Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1-----	1,2-Dichlorobenzene	480	U
95-48-7-----	2-Methylphenol	480	U
98-95-3-----	Nitrobenzene	480	U
110-86-1-----	Pyridine	480	U
106-44-5-----	3+4-Methylphenol	950	U

Stamontel
8/12/97

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC-SSD

Lab Name: NYTEST ENV INC Contract: 9723158
Lab Code: NYTEST Case No.: 31890 SAS No.: SDG No.: 31890
Matrix: (soil/water) WATER Lab Sample ID: 3189001
Sample wt/vol: 5.0 (g/mL) ML Lab File ID: P8417.D
Level: (low/med) LOW Date Received: 07/29/97
% Moisture: not dec. _____ Date Analyzed: 08/01/97
Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (mg/L or mg/Kg) MG/L	Q
75-01-4	Vinyl Chloride	0.01	U
75-35-4	1,1-Dichloroethene	0.01	U
67-66-3	Chloroform	0.01	U
107-06-2	1,2-Dichloroethane	0.01	U
78-93-3	2-Butanone	0.01	U
56-23-5	Carbon Tetrachloride	0.01	U
79-01-6	Trichloroethene	0.01	U
71-43-2	Benzene	0.01	U
127-18-4	Tetrachloroethene	0.01	U
108-90-7	Chlorobenzene	0.01	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC-SSD

Lab Name: NYTEST ENV INC	Contract: 9723158
Lab Code: NYTEST	Case No.: 31890
	SAS No.:
	SDG No.: 31890
Matrix: (soil/water) SOIL	Lab Sample ID: 3189001
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: P8461.D
Level: (low/med) LOW	Date Received: 07/29/97
% Moisture: not dec. 26	Data Analyzed: 08/05/97
Column: (pack/cap) CAP	Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-09-2-----	Methylene Chloride	5	JB
67-64-1-----	Acetone	9	J
75-15-0-----	Carbon Disulfide	14	U
78-93-3-----	2-Butanone	14	U
71-55-6-----	1,1,1-Trichloroethane	14	U
56-23-5-----	Carbon Tetrachloride	14	U
79-01-6-----	Trichloroethene	14	U
79-00-5-----	1,1,2-Trichloroethane	14	U
71-43-2-----	Benzene	14	U
127-18-4-----	Tetrachloroethene	14	U
79-34-5-----	1,1,2,2-Tetrachloroethane	14	U
108-88-3-----	Toluene	11	J
108-90-7-----	Chlorobenzene	14	U
100-41-4-----	Ethylbenzene	14	U
1330-20-7-----	Xylene (total)	14	U
75-69-4-----	Trichloromonofluoromethane	14	U
95-50-1-----	1,2-Dichlorobenzene	14	U
76-13-1-----	Freon 113	14	U
141-78-6-----	Ethyl Acetate	14	U
79-46-9-----	2-Nitropropane	14	U
108-94-1-----	Cyclohexanone	140	U

000031

Appendix B

THOMAS S. GULOTTA
COUNTY EXECUTIVE



JOHN M. WALTZ, P.E.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF PUBLIC WORKS
MINEOLA, NEW YORK 11501-4822

September 11, 1997

Mr. Eric A. Weinstock
C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, New York 11579

Re: Tishcon Corp. Facility
125 State Street
Westbury, New York

Dear Mr. Weinstock:

Your request to dispose of approximately 3,000 gallons of dry well wastewater from the above referenced site to the "Bay Park Scavenger Waste Disposal Facility" has been reviewed and is accepted.

This determination is based on the lab analysis of the wastewater and the non-hazardous nature of the subject wastes. This approval is limited to the liquid phase only.

The wastewater must be pumped and transported by a New York State Department of Environmental Conservation approved and Nassau County permitted company.

Thank you for your concern and cooperation. If you have any additional questions, please feel free to call me at (516) 571-7352.

Very truly yours,

A handwritten signature in black ink, appearing to read "Maurice J. Osman".

Maurice J. Osman
Chief Chemist

MJO:sm

cc: Richard Cotugno, NCDPW
Matthew Reilly, Bay Park Sewage Treatment Plant
Victor Farina, Bay Park Sewage Treatment Plant

NYTEST ENVIRONMENTAL INC.

INORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SD2-5W

Lab Name: NYTEST_ENV_INC Contract: 9723158

Lab Code: NYTEST Login No.: 31890_ QC Report No.31890_

Matrix (soil/water): WATER Lab Sample ID: 189002
 Level (low/high) : LOW Date Received: 07/29/97
 Percent Solids : 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	2.7	U		P
7440-39-3	Barium	7.7	B		P
7440-43-9	Cadmium	0.50	U		P
7440-47-3	Chromium	1.4	B		P
7439-92-1	Lead	4.9			P
7439-97-6	Mercury	0.04	U		CV
7782-49-2	Selenium	2.9	B		P
7440-22-4	Silver	1.2	U		P

CODES :

P: ICP; F : GFAA; CV: Cold Vapor; AS: Automated Spectrophotometric
 Note: A "U" in the "C" (Concentration) column indicates the analyte was not detected in this sample; "B" = Sample value greater than Instrument Detection Limit, but less than reporting limit; "NR" = Not Required.

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD2-5W

Lab Name: NYTEST ENV INC

Contract: 9723158

Lab Code: NYTEST

Case No.: 31890

SAS No.:

SDG No.: 31890

Matrix: (soil/water) WATER

Lab Sample ID: 3189002

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: P8415.D

Level: (low/med) LOW

Date Received: 07/29/97

% Moisture: not dec. _____

Data Analyzed: 08/01/97

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U
108-05-4	Vinyl Acetate	10	U

000022

Appendix C



NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

No. 048908 *MA*

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II, and III.

Section I GENERATOR (Generator completes all of Section I)

a. Generator Name: Tishon Corporation b. Generating Location: Western Tishon Corp
 c. Address: 755 5th Street 30 New York Ave d. Address: 125 State Street
Westbury, NY
 e. Phone No.: (516) 337-3050 f. Phone No.: _____
 g. Owner's Name: _____ h. Owner's Phone No.: _____
 i. BFI WASTE CODE: NY 855 980923 258308
 j. Description of Waste: Sludge, slurry, dain k. Quantity: 18 Units: Y No. 1 TYPE: T
 I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 261.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Containers		TYPE	
DM - METAL DRUM			
DP - PLASTIC DRUM			
B - BAG			
BA - 6 MIL PLASTIC			
		of WRAP	
T - TRUCK			
O - OTHER			

Generator Authorized Agent Name: Joe Elba Signature: [Signature] Shipment Date: 10/28/97

Section II TRANSPORTER (Generator completes a-d; Transporter complete e-g)

a. Name: DAVE KISTLER + GRANDSON'S TRANSPORTER I
 b. Address: KENTON, PA
 c. Driver Name/Title: Jeff E Marsh
 d. Phone No.: 1-800-761-6077 e. Truck No.: 816
 f. Vehicle License No./State: AB 49335 PA
 Acknowledgment of Receipt of Materials:
 g. Driver Signature: [Signature] Shipment Date: 11/1/97

Section III DESTINATION (Generator completes a-d; destination site completes e-f)

a. Site Name: BFI Carbon Liner
 b. Physical Address: 9100 Spokline Road
Lawrenceville, Ohio
 c. Phone No.: _____
 d. Mailing Address: _____
 e. Discrepancy Indication Space:
 I hereby certify that the above named has been accepted and to the best of my knowledge the foregoing is true and accurate.
 Name of Authorized Agent: VERKEY-BFI Signature: Wendy Verkey Receipt Date: 11/1/97

Section IV ASBESTOS (Generator completes a-d,f,g; Operator completes e)

a. Operator's Name: DIOS b. Operator's Phone No.: _____
 c. Operator's Address: _____
 d. Special Handling Instructions and additional information: _____
 OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and governmental regulations.
 e. Operator's Name & Title: _____ Print/Type
 f. Name and Address of Responsible Agency: _____ Operator's Signature: _____
 g. Friable Non-friable Both _____ % friable _____ % nonfriable
 * Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation.

RETURN TO OPERATOR

Data Usability Report

**QUALITY ASSURANCE and DATA USABILITY REPORT
SOIL SAMPLES**

**Tishcon Corporation
30-36 New York Avenue &
125 State Street
Westbury, New York**

1.0 INTRODUCTION

This Quality Assurance and Data Usability Report reviews field and laboratory data obtained during the collection of soil samples on October 28, 1997 at the Tishcon Corporation site located at 30-36 New York Avenue and 125 State Street, Westbury, New York. This report presents a summary of the results of performance and system audits, an assessment of data accuracy, precision and completeness, and the analytical data validation report. This report incorporates the Data Quality Objectives (DQO's) outlined in the Quality Assurance Project Plan (QAPjP) prepared for the Tishcon Corporation site approved by NYSDEC and dated November 1995.

All soil samples collected were analyzed for Volatile Organic Compounds (VOCs-NYSDEC Method 95-1) and RCRA metals. In addition, chemical analysis of field and trip blanks, matrix spike/matrix spike duplicates and sample duplicates was conducted as required by the QAPjP. All chemical analyses were conducted by Nytest Environmental Laboratories, Inc. (NEI) of Port Washington, New York.

2.0 QUALITY ASSURANCE REVIEW

The following sections summarize the results of performance and system audits, an assessment of data accuracy, precision and completeness, and the analytical data validation report. After consideration of the following items, this quality assurance review has determined that all of the data generated is valid and usable with the exception of mercury in sample number SS-SD6 (the duplicate of SS-SD2) which was analyzed outside of the required holding time.

2.1 Performance and System Audits

Performance and system audits were completed in the field and at the laboratory during the conductance of the Focused Remedial Investigation Work Plan (ref. 1) and Interim Remedial Measures Letter Report (ref. 2 and ref. 3). Field audits were conducted by the Project Manager and/or the Quality Assurance Officer or their designee to ensure that DQO's were adhered to during all data collection activities.

The field audits were conducted to verify that procedures conducted in the field were completed in accordance with established protocols presented in the Focused Remedial Investigation Work Plan and to identify any deficiencies that would potentially impact data quality. The completed field audits did not identify deficiencies that could potentially impact data quality. Copies of applicable Field Quality Control Check forms are included in Attachment A. Laboratory audits were performed internally by NEI in accordance with NYSDEC ASP (December 1991) deliverables. Any deficiencies were identified either in the NEI's case narrative or through the data validation procedure are discussed further in Section 2.3

2.2 Data Assessment

Field and analytical data generated during the field activities was evaluated with respect to precision, accuracy and completeness.

2.2.1 Precision

- **Field** - Field precision was controlled through the use of properly calibrated meters and duplicate field measurements. Review of daily log book entries and field quality control checks did not indicate evidence of field performance that would compromise the usability of field measurement results.

- **Laboratory** - Measurement of precision was assessed through the collection of field duplicated samples. Duplicate sampling was conducted on storm drain 2 samples SS-SD2 and SS-SD6. Data precision can be calculated using the following relative percent difference (RPD) equation:

$$RPD = \frac{(A-B)}{(A+B)/2} \times 100$$

where; A = analytical result of one of the duplicated measurements.
 B = analytical result of the second measurement.

Based on the results of data validation, the following was observed:

- All precision data met QC criteria with the exception of arsenic, chromium and lead in sample SS-SD4 and these analytes have been qualified "J/UJ" estimated in the soil samples. All precision data met QC criteria in sample SS-SD6.

2.2.2 Accuracy

- **Field** - Field accuracy was controlled through the use of properly calibrated meters and adherence to established protocols. Review of daily log book entries and field quality control checks did not indicate evidence of field performance that would compromise the usability of field measurement results.

- **Laboratory** - Laboratory accuracy was assessed through the use of matrix spike (MS) and matrix spike duplicate (MSD) samples associated with soil sample SS-SD4 from storm drain 4. Accuracy is calculated as a percent recovery as follows:

$$\text{Accuracy} = \frac{A-X}{B} \times 100$$

where; A = Value measured in spiked sample.
 X = Value measured in original sample.
 B = True value of the amount added to sample.

Based on the results of data validation, the following was observed:

- VOA: Percent (%) recoveries and RPDs for the blank spike and the spike duplicate were the within QC limits of the method employed. % Recoveries for chlorobenzene in spiked sample SD4 (MSD) was high. RPDs for trichloroethene, benzene and toluene were also high. No qualifications were placed on sample results due to % recovery and RPD results.

2.2.3 Completeness

- **Field/Laboratory**- Field/laboratory completeness was measured by comparing the number of samples collected and analyzed to the proposed number indicated in Table 1 of the QAPJP and is calculated by the following equation:

$$\text{Completeness} = \frac{\text{Number of samples collected/analyzed}}{\text{Proposed Number of samples}} \times 100$$

The number of samples collected and analyzed equaled the number of samples proposed in the IRM Letter Reports (ref. 2 and ref. 3).

2.3 Data Validation

The data validation review was conducted by Premier Environmental Services according to the guidelines in the USEPA Contract Laboratory Program National Functional Guidelines, February 1994 and the NYSDEC Analytical Services Protocol (ASP) validation criteria. A copy of the data validation report is included in Attachment B and summarized below.

Based on the review and interpretation of quality control results, the data reviewer offered data qualifiers. The data qualifications allow the data end-user to best understand the usability of the analysis results. Tables 1 through 3 present the analytical data after validation.

2.3.1 Organic Data

With respect to data usability, the principal areas identified by the data reviewer was limited to blank contamination, recoveries and RPDs for the MS/MSD and holding time for mercury. Deficiencies identified by the data reviewer were related to the detection of methylene chloride, which was qualified due to its occurrence in trip and field blanks at similar concentrations detected in actual samples. Therefore the low level detections of methylene chloride in samples is considered to be a result laboratory introduced contamination. The digestion of mercury in the duplicate sample SS-SD6 was outside of the method holding time and has been qualified as such.

3.0 DATA USABILITY

Overall, the field and laboratory data generated during this aspect of the Remedial Investigative Work completed at the Tishcon Corporation site is considered acceptable for use after consideration of the applied data qualifiers. Review of log book entries, equipment calibration/maintenance records, results of the field quality control checks, and the data validation process did not indicate reasons which suggest that the overall data obtained is unreliable and should be rejected.

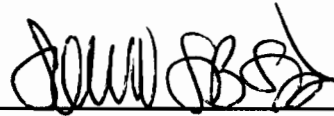
Some of the data have been qualified to account for interpretation of the quality control results. However, the qualified data does not impact the usability of the analytical results. Therefore, CA RICH believes that the use of the analytical data is acceptable after consideration and understanding of the data qualifiers.

4.0 CERTIFICATION

We certify that to the best of our knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this report, that the information submitted in this Report is true, accurate and complete.

Respectfully Submitted,

CA RICH CONSULTANTS, INC.



Steven Sobstyl
Quality Assurance Officer



Eric A. Weinstock, CPG
Project Manager

REFERENCES

- 1) CA RICH; Focused Remedial Investigation Work Plan, Sampling & Analysis Plan, and Health & Safety Plan; Tishcon Corporation, 30-36 New York Avenue and 31-33 Brooklyn Avenue, Westbury, NY; November 1995.
- 2) CA RICH; Interim Remedial Measures Letter Report; Tishcon Corporation, 125 State Street, Westbury, NY; June 1997.
- 3) CA RICH; Interim Remedial Measures Letter Report; Tishcon Corporation, 30 New York Avenue, Westbury, NY; September 1997.

Users:Steve/Projects/Active/Tishcon-Q.A./Tishcon@QA NYA&State

TABLE 1

Summary of Soil Analysis
After Data Validation
Tishcon Corporation
State Street Facility

Location Sample ID Date Sampled	Storm Drain 2	Storm Drain 2 Duplicate	Sewer Line Backfill	Condensate Line Backfill	Storm Drain 4	Distribution Box 5	NYSDEC TAGM * Cleanup Objectives
	SS-SD2 10/28/97	SS-SD6 10/28/97	SS-BF1 10/28/97	SS-CL1 10/28/97	SS-SD4 10/28/97	SS-DB5 10/28/97	
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics (NYSDOH Method 95-1)							
Chloromethane	11 U	11 U	10 U	11 U	10 U	12 U	NV
Bromomethane	11 U	11 U	10 U	11 U	10 U	12 U	NV
Vinyl chloride	11 U	11 U	10 U	11 U	10 U	12 U	200
Chloroethane	11 U	11 U	10 U	11 U	10 U	12 U	1,900
Methylene chloride	11 U	11 U	10 U	11 U	10 U	12 U	100
Acetone	11 U	11 U	10 U	11 U	10 U	12 U	200
Carbon Disulfide	11 U	11 U	10 U	11 U	10 U	12 U	2,700
1,1-Dichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	400
1,1-Dichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	200
1,2-Dichloroethane (total)	11 U	11 U	10 U	11 U	10 U	12 U	300
Chloroform	11 U	11 U	10 U	11 U	10 U	12 U	300
1,2-Dichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	100
2-Butanone	11 U	11 U	10 U	11 U	10 U	12 U	300
1,1,1-Trichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	800
Carbon Tetrachloride	11 U	11 U	10 U	11 U	10 U	12 U	600
Bromodichloromethane	11 U	11 U	10 U	11 U	10 U	12 U	NV
1,2-Dichloropropane	11 U	11 U	10 U	11 U	10 U	12 U	NV
cis-1,3-Dichloropropene	11 U	11 U	10 U	11 U	10 U	12 U	NV
Trichloroethene	11 U	11 U	10 U	11 U	10 U	12 U	700
Dibromochloromethane	11 U	11 U	10 U	11 U	10 U	12 U	NV
1,1,2-Trichloroethane	11 U	11 U	10 U	11 U	10 U	12 U	NV
Benzene	11 U	11 U	10 U	11 U	10 U	12 U	60
trans-1,3-Dichloropropene	11 U	11 U	10 U	11 U	10 U	12 U	NV
Bromoform	11 U	11 U	10 U	11 U	10 U	12 U	NV
4-Methyl-2-Pentanone	11 U	11 U	10 U	11 U	10 U	12 U	1,000
2-Hexanone	11 U	11 U	10 U	11 U	10 U	12 U	NV
Tetrachloroethene	11 U	11 U	10 U	11 U	10 U	12 U	1,400
1,1,2,2-Tetrachloroethane	11 U	11 U	10 U	11 U	10 U	12 U	600
Toluene	11 U	11 U	10 U	11 U	10 U	12 U	1,500
Chlorobenzene	11 U	11 U	10 U	11 U	10 U	12 U	1,700
Ethylbenzene	11 U	11 U	10 U	11 U	10 U	12 U	5,500
Styrene	11 U	11 U	10 U	11 U	10 U	12 U	NV
Xylene (total)	11 U	11 U	10 U	11 U	10 U	12 U	1,200

Notes:

ug/Kg: micrograms per kilogram - parts per billion.

U: compound not detected at or above detection limit. Number represents compound detection limit.

* NYSDEC Division Technical and Administrative Guidance Memorandum.

Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 1994.

TABLE 2

Summary of Soil Analysis
After Data Validation
Tishcon Corporation
State Street Facility

Location	Storm Drain 2	Storm Drain 2 Duplicate	Sewer Line Backfill	Condensation Line Backfill	Storm Drain 4	Distribution Box 5	FIELD	NYSDEC TAGM*	Eastern USA
Sample ID	SS-SD2	SS-SD6	SS-BF1	SS-CL1	SS-SD4	SS-DB5	10/28/97	Cleanup Objectives for Soil Containing 1% Carbon	Background
Date Sampled	10/28/97	10/28/98	10/28/97	10/28/97	10/28/97	10/28/97	10/28/97		
RCRA METALS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	1.1 J	1.1 **	2.2 J	8.8 J	1.2 J	3.7 J	2.4 U	7.5	3.0-12
Barium	3.1 B	5.0 B	12.8 B	5.6 B	3.1 B	32.6	4.6 U	300	15-600
Cadmium	0.03 U	0.03 U	0.15 B	0.03 U	0.03 U	0.18 B	0.30 U	1	0.1-1
Chromium	2.0 J	3.5	5.2 J	5 J	2.9 J	11.4 J	1.0 U	10	1.5-40
Lead	1.2 J	1.5 J	8 J	2.8 J	9.4 J	6.6 J	1.9 J	200-500	200-500
Mercury	0.05 U	0.02 R	0.10 U	0.07 U	0.05 U	0.10 U	0.07 U	0.1	0.001-0.2
Selenium	0.23 UJ	0.51 UJ	0.23 UJ	0.32 J	0.24 UJ	0.27 UJ	4.8 J	2	0.1-3.9
Silver	0.08 UJ	0.08 U	0.08 UJ	0.08 UJ	0.08 UJ	0.09 UJ	0.88 J	SB	NA

Notes:

mg/kg: milligrams per kilogram - parts per million.

J: indicates an estimated value.

B: reported value obtained from a reading that was less than the Construct Required detection limit, but greater than or equal to the Instrument Detection Limit.

U: analyte was analyzed for, but not detected.

UJ: qualification indicates an undetected analyte with the detection limit estimated.

R: result is rejected and does not meet minimum QA/QC criteria.

SB: site background

NA: not available

* NYSDEC Division Technical and Administrative Guidance Memorandum:

Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 1994

** Negate due to Lead.

TABLE 3

Summary of Soil Analysis
After Data Validation
Tishcon Corporation
New York Avenue Facility

Location Sample ID Date Sampled	Floor Drain 1	Floor Drain 1	Storm Drain 1	SD-1 (Duplicate)	Cesspool	FIELD	TRIP	NYSDEC TAGM *
	NYAFD1 10/28/97	NYAFD3 10/28/97	NYASD1 10/28/97	NTSD20 10/28/97	CP-EP * 11/14/97	BLANK 10/28/97	BLANK 10/28/97	Cleanup Objectives
Volatile Organics (NYSDOH Method 95-1)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Chloromethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
Bromomethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
Vinyl chloride	11 U	11 U	11 U	11 U	11 U	10 U	10 U	200
Chloroethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	1,900
Methylene chloride	11 U	11 U	11 U	11 U	4 JB	10 U	10 U	100
Acetone	11 U	11 U	11 U	11 U	28	10 U	10 U	200
Carbon Disulfide	11 U	11 U	11 U	11 U	11 U	10 U	10 U	2,700
1,1-Dichloroethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	400
1,1-Dichloroethane	11 U	11 U	11 U	11 U	8 J	10 U	10 U	200
1,2-Dichloroethane (total)	11 U	11 U	11 U	11 U	2 J	10 U	10 U	300
Chloroform	11 U	11 U	11 U	11 U	11 U	10 U	10 U	300
1,2-Dichloroethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	100
2-Butanone	11 U	11 U	11 U	11 U	14	10 U	10 U	300
1,1,1-Trichloroethane	11 U	11 U	11 U	11 U	3800 E	10 U	10 U	800
Carbon Tetrachloride	11 U	11 U	11 U	11 U	11 U	10 U	10 U	600
Bromodichloromethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
1,2-Dichloropropane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
cis-1,3-Dichloropropene	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
Trichloroethene	11 U	11 U	11 U	11 U	9 J	10 U	10 U	700
Dibromochloromethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
1,1,2-Trichloroethane	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
Benzene	11 U	11 U	11 U	11 U	11 U	10 U	10 U	60
trans-1,3-Dichloropropene	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
Bromoform	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
4-Methyl-2-Pentanone	11 U	11 U	11 U	11 U	11 U	10 U	10 U	1,000
2-Hexanone	11 U	11 U	11 U	11 U	11 U	10 U	10 U	NV
Tetrachloroethene	11 U	11 U	11 U	11 U	11 U	10 U	10 U	1,400
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	11 U	4 J	10 U	10 U	600
Toluene	11 U	11 U	11 U	11 U	11 U	10 U	10 U	1,500
Chlorobenzene	11 U	11 U	11 U	11 U	83	10 U	10 U	1,700
Ethylbenzene	11 U	11 U	11 U	11 U	11 U	10 U	10 U	5,500
Styrene	11 U	11 U	11 U	11 U	30	10 U	10 U	NV
Xylenes (total)	11 U	11 U	11 U	11 U	11 U	10 U	10 U	1,200

Notes:

µg/Kg: micrograms per Kilogram - parts per billion.

U: compound not detected at or above detection limit. Number represents compound detection limit.

J: estimated concentration.

B: analyte is found in the associated blank as well as the sample.

E: value exceeds calibration range of instrument

* Sample CP-EP collected on different date than the other samples was not validated as additional remediation is planned at this location.

ATTACHMENT A
Field Quality Control Check Forms

CA RICH CONSULTANTS, INC.
Field Quality Control Checks

Date: 10/28/97

By: Christopher Guider

Check List

Were the following performed
(Yes or No)

- **Field Measurements** - To verify the quality of data collected using field instrumentation, at least one duplicate measurement will be obtained per day and reported for all field analytical measurements.
- **Equipment Calibration** - Meters should be calibrated within 24-hours prior to use.
- **Equipment Decon** - Sampling equipment should be deconed as stated in the Sampling & Analysis Plan
- **Sample Containers** - Certified-clean sample containers in accordance with Exhibit I of the NYSDEC ASP (Dec. 1991) will be supplied by the NEI.
- **Field Duplicates** - Field duplicates will be collected to check reproducibility of the sampling methods. Field duplicates will be prepared as discussed in the FSP. In general, field duplicates will be analyzed at a five percent frequency (every 20 samples). Table 1 provides an estimated number of field duplicates for each applicable parameter and matrix.
- **Field Rinse Blanks** - Field rinse blanks are used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Laboratory-demonstrated, analyte-free water shall be passed through or over the sampling equipment being used on that particular day. The water shall be collected in the laboratory-cleaned containers at a frequency of one per sampling day and analyzed for the same parameters as the field samples. Table 1 provides an estimated number of rinse blanks collected during the field work.
- **Trip Blanks** - Trip blanks will be used to assess whether site samples have been exposed to non-site-related volatile constituents during storage and transport. Trip blanks will be analyzed at a frequency of once per day, and will be analyzed for volatile organic constituents. A trip blank will consist of a container filled with analyte-free water (supplied by the laboratory) which remains unopened with field samples throughout the sampling event. Trip blanks will only be analyzed for volatile organic constituents. Table 1 provides an estimated number of trip blanks collected for each matrix and parameter during the field activities.

yes

yes

yes

yes

yes

yes

yes

ATTACHMENT B
Data Validation Report

Premier Environmental Services, Inc.

DATA VALIDATION FOR: VOLATILE ORGANICS AND RCRA METALS

SITE: TISHCON IRM-STATE STREET
CASE NO.: 32757
CONTRACT LAB: NYTEST ENVIRONMENTAL, INC.
REVIEWER: JANET JOSHER
REVIEW COMPLETED: JANUARY 30,1998
MATRIX: SOIL AND WATER

The data validation was performed according to the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, February, 1994 and NYSDEC-ASP validation criteria. All data are considered valid and acceptable except for those analytes which have been qualified as detailed in this report. A "J" qualification indicates an estimated value. A "UJ" qualification indicates an undetected analyte with the detection limit estimated. A "JN" qualification indicates presumptive data. An "R" qualification indicates that the result is rejected and does not meet minimum QA/QC criteria. Any results that are rejected should not be used. Persons using this data should be aware that no result is guaranteed to be accurate even if it has passed all QC tests. The main purpose of this review is to appropriately qualify outliers and to determine whether the results were generated within the requirements of the methods employed.

This data assessment is for the samples collected on October 28,1997 as listed below:

SS-SD2
SS-SD6
SS-BF1
SS-CL1
SS-SD4
SS-DB5
TRIP BLANK
FIELD BLANK

ORGANIC DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Volatile organics analysis is required to be performed within 10 days of collection for soils and preserved water samples.

VOA: All samples were analyzed within the required holding time.

2. BLANK CONTAMINATION:

Quality assurance blanks, such as the method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Positive results of less than ten times the method detection limit for common laboratory solvents such as Methylene Chloride, Acetone, and 2-Butanone and less than five times the method detection limit for other volatile compounds that are found in the samples for compounds that are also found in the method, field and trip blanks are negated with the qualification "U". The following samples were qualified for blank contamination.

A.) Method blank contamination

VOA: Positive results for Methylene Chloride were found in the method blanks, therefore, associated results for samples SS-SD2, SS-SD6, SS-BF1, SS-CL1, SS-SD4, and SS-DB5 were negated.

a

B.) Field blank contamination

VOA: No contamination was found in the associated field blank.

C.) Trip blank

VOA: No contamination was found in the associated trip blank.

ORGANIC DATA ASSESSMENT

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics analysis is Bromofluorobenzene (BFB).

If the mass calibration is in error or missing, all associated data will be classified as unusable, "R".

VOA: The tuning criteria were met.

4. RESPONSE FACTOR:

The response factor measures the instrument's response to specific chemical compounds. A value outside that criteria indicates a serious detection and quantitation problem, or poor sensitivity.

VOA: Response factor criteria were met.

ORGANIC DATA ASSESSMENT

5. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of performing satisfactorily at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is performing satisfactorily on a daily basis.

Percent relative standard deviation (RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentrations. Percent difference (%D) compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance.

INITIAL CALIBRATION:

VOA: %RSD criteria were met.

CONTINUING CALIBRATION:

VOA: %D criteria were met.

ORGANIC DATA ASSESSMENT

6. SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

VOA: Percent recoveries for all surrogates were within QC limits.

7. INTERNAL STANDARD PERFORMANCE

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +150%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ± 30 seconds from the associated continuing calibration standard..

VOA: Recoveries for all internal standards met QC requirements.

8. COMPOUND IDENTIFICATION:

VOLATILE FRACTION:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary ion intensities with 20% of that in the standard compound. For tentatively identified compounds (TIC), the ion spectra must match accurately.

VOA: Identification criteria were met .

ORGANIC DATA ASSESSMENT

9. MATRIX SPIKE/ SPIKE DUPLICATE ANALYSIS

The MS/SD and blank spike/spike duplicate are generated to determine the precision and accuracy of the analytical method. This data may be used in conjunction with the other QC criteria for additional qualification of data. The following results were noted for MS/SD analysis:

VOA: %Recoveries and RPDs for the blank spike and spike duplicate were within the QC limits of the method employed. %Recovery for Chlorobenzene in spiked sample SS-SD4(MSD) was high. RPDs for Trichloroethene, Benzene, and Toluene were also high. No qualifications were placed on sample results due to %recovery and RPD results.

10. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

VOA: Positive results were found for Methylene Chloride in the method blanks and in the associated samples, therefore, Methylene Chloride was negated in the samples. Recoveries and RPDs for the matrix spike and matrix spike duplicate exceeded QC limits. No action was taken. All other QC criteria were met. Overall the data is usable. No data validation qualifications were made.

INORGANIC DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Metals with the exception of Mercury are required to be digested and analyzed within 180 days of VTSR. Mercury samples are digested and analyzed within 26 days of VTSR.

The following analytes in the samples shown were qualified because of holding time:

Sample SS-SD6 was not analyzed and reported by the laboratory in the initial data report. The laboratory was informed of this oversight and sample was digested on January 20, 1998 and the data was reported under separate cover. The digestion of Mercury in sample SS-SD6 was performed on January 20, 1998, outside the method holding time. Due to this exceedance in holding time, the Mercury result associated with this samples has been qualified "R" Rejected, unusable.

2. CRDL Standard

The CRDL standard is used for the verification of instrument linearity near the CRDL. The CRDL standard control limits are 80%-120% recovery. If the CRDL standard falls outside of the control limits, associated data less than or equal to the 10X the CRDL are qualified estimated (J or UJ) or rejected (R) depending on the recovery of the CRDL standard and the concentration of the analyte in the sample. When the CRDL standard exceeds the control limit, indicating a high bias samples are qualified estimated (J or UJ). For Mercury, a CRDL standard is not required, but where it has been analyzed by the laboratory and the recovery is found to be outside 80%-120%, a professional judgment is exercised in qualifying associated data.

INORGANIC DATA ASSESSMENT

2. CRDL Standard (cont'd)

CRDL data was reported on the appropriate forms. The following analytes have been qualified in associated samples based upon the recovery of the CRDL standard recovery:

10/30/97 Analysis

Lead (121.1%), Selenium (133.4%), Silver (78.5%)

11/4/97 Analysis

Lead (143.7%, 121.0%), Selenium (149.8%), Silver (70.4%, 72.9%)

1/20/98 Analysis

Lead (130.8%), Selenium (137.5%)

3. MATRIX SPIKE ANALYSIS

The spike sample analysis provides information about the effect of the sample matrix upon the digestion and measurement methodology. The spike control limits are 75%-125% when the sample concentration is less than four (4) times the spike added. If the matrix spike recoveries fall in the range of 30%-74%, the sample results are may be biased low and are qualified as estimated (J or UJ). If the matrix spike recoveries fall in the range of 126%-200%, sample results may be biased high. Positive results are qualified estimated (J). If the spike recovery is greater than 125% and the reported sample results are less than the IDL the data point is acceptable for use. If the matrix spike recovery is greater than 200%, the associated sample data are unusable and are rejected (R). If matrix spike results are less than 30%, the associated non-detect results are qualified unusable and rejected (R), and the results reported above the IDL are qualified estimated (J).

Nytest Environmental, Inc. performed matrix spike analysis on samples SS-SD4 and SS-SD6. The matrix spike recovery of all analytes in both samples met QC criteria.

INORGANIC DATA ASSESSMENT

4. POST DIGESTION SPIKE ANALYSIS

The post digestion spike sample analysis provides additional information about the effect of the sample matrix upon the digestion and measurement methodology. The post digestion spike is performed for each analyte that the pre-digestion spike recovery falls outside the 75-125% control limit.

Post digestion spike analysis was not required for this sample set. All predigestion spike recoveries met QC criteria.

5. DUPLICATE SAMPLE ANALYSIS

The duplicate sample analysis is used to evaluate the precision of the methods for each parameter. If the duplicate sample analysis results for a particular analyte fall outside the control windows of 20% RPD or +/- CRDL, whichever is appropriate depending upon the concentration of the sample, the associated sample results are qualified "J" estimated.

Nytest Environmental, Inc. performed duplicate analysis on samples SS-SD4 and SS-SD6. All precision data met QC criteria with the exception of Arsenic, Chromium and Lead in sample SS-SD4. These analytes have been qualified "J/UJ" estimated in the soil samples. All precision data met QC criteria in sample SS-SD6.

INORGANIC DATA ASSESSMENT

6. ICP SERIAL DILUTION

The serial dilution analysis indicates whether significant physical or chemical interference's exist due to the sample matrix. If the concentration of any analyte in the original sample is greater than 50 times the instrument detection limit (IDL), an analysis of a 5-fold dilution samples must yield results which have a percent difference (%D) of less than or equal to 10 with the original sample results. If the %D of the serial dilution exceeds the 10% (and is not greater than 100%) for a particular analyte, all the associated sample results are qualified estimated (J).

Nytest Environmental, Inc. performed the serial dilution analysis on samples SS-SD4 and SS-SD6. The % D of all analytes met QC criteria.

7. BLANKS

Blank analyses are assessed to determine the existence and magnitude of contamination problems. The criteria for the evaluation of blanks applies to all blanks, including but not limited to reagent blanks, method blanks and field blanks. The responsibility for action in the case of an unsuitable blank result depends upon the circumstances and the origin of the blank itself. If the problem with any blank exists, then all associated data must be carefully evaluated to determine whether there is inherent variability in the data for that case, or the problem is an isolated occurrence not effecting other data.

The soil prep blank associated with the 10/31/97 Mercury digestion contained Mercury at a concentration of 0.45 mg/kg. Soil samples associated with this prep blank have been revised to negate the Mercury reported on the laboratory Form I's. The aqueous prep blank associated with the Mercury digestion of 10/30/97 contained Mercury at a concentration of 0.053 ug/L. The Mercury detected in the Field Blank has been negated on the laboratory Form I.

The soil prep blank associated with the 1/20/98 RCRA metal digestion contained Arsenic (0.305 mg/kg) and Selenium (0.294 mg/kg). Arsenic and Selenium in sample SS-SD6 have been negated on laboratory Form I's when detected due to this preparation blank contamination.

INORGANIC DATA ASSESSMENT

8. LABORATORY CONTROL SAMPLE ANALYSIS

The laboratory control sample (LCS) analysis provides information about the efficiency of the digestion procedure. If the recovery of any analyte is outside the established control limits, all associated data is rejected (R). Two solutions comprise the LCS A and AB. Solution A consists of the interferent metals while solution AB is a group of analytes mixed with the interferents.

Nytest Environmental, Inc. prepared and analyzed an LCS sample with each soil digestion batch. All percent recoveries met QC criteria

9. INTERFERENCE CHECK STANDARD

The Interference Check Standard (ICS) is used to verify the laboratories interelement and background correction factors.

The ICS analyses associated with these samples met all QC criteria.

10. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The RCRA Metals, with the exception of Mercury in sample SS-SD6, have been determined usable with the noted qualifiers. Mercury in sample SS-SD6 has been rejected (R) due to the deficiencies noted in this report. All other Mercury datum was acceptable for use with the noted qualifiers.

C.A. Rich indicated on the Chain of Custody documentation that MS/DUP analysis was to be performed on sample SS-SD4. Due to the oversight associated with sample SS-SD6, sample QC (MS/DUP/Serial Dil) analyses were performed on this sample when digestion occurred (1/20/98) and reported by the laboratory. A review of this QC was made by the validator and applicable data qualifiers have been applied to the sample.

Premier Environmental Services, Inc.

DATA VALIDATION FOR: VOLATILE ORGANICS

SITE: TISHCON IRM-NEW YORK AVE.
CASE NO.: 32757
CONTRACT LAB: NYTEST ENVIRONMENTAL, INC.
REVIEWER: JANET JOSHER
REVIEW COMPLETED: JANUARY 30, 1998
MATRIX: SOIL AND WATER

The data validation was performed according to the USEPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review, February, 1994 and NYSDEC-ASP validation criteria. All data are considered valid and acceptable except for those analytes which have been qualified as detailed in this report. A "J" qualification indicates an estimated value. A "UJ" qualification indicates an undetected analyte with the detection limit estimated. A "JN" qualification indicates presumptive data. An "R" qualification indicates that the result is rejected and does not meet minimum QA/QC criteria. Any results that are rejected should not be used. Persons using this data should be aware that no result is guaranteed to be accurate even if it has passed all QC tests. The main purpose of this review is to appropriately qualify outliers and to determine whether the results were generated within the requirements of the methods employed.

This data assessment is for the samples collected on October 28, 1997 as listed below:

NYAFD1
NYAFD3
NYASD1
NYSD20
TRIP BLANK
FIELD BLANK

2815 COVERED BRIDGE ROAD, MERRICK, NEW YORK 11566
(516) 223-9761 • FAX (516) 223-0983 • NEW JERSEY (908) 750-8783

ORGANIC DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Volatile organics analysis is required to be performed within 10 days of collection for soils and preserved water samples.

VOA: All samples were analyzed within the required holding time.

2. BLANK CONTAMINATION:

Quality assurance blanks, such as the method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Positive results of less than ten times the method detection limit for common laboratory solvents such as Methylene Chloride, Acetone, and 2-Butanone and less than five times the method detection limit for other volatile compounds that are found in the samples for compounds that are also found in the method, field and trip blanks are negated with the qualification "U". The following samples were qualified for blank contamination.

A.) Method blank contamination

VOA: Positive results for Methylene Chloride were found in the method blanks, therefore, associated results for samples NYAFD1, NYAFD3, NYASD1, and NYSD20 were negated.

B.) Field blank contamination

VOA: No contamination was found in the associated field blank.

C.) Trip blank

VOA: No contamination was found in the associated trip blank.

ORGANIC DATA ASSESSMENT

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics analysis is Bromofluorobenzene (BFB).

If the mass calibration is in error or missing, all associated data will be classified as unusable, "R".

VOA: The tuning criteria were met.

4. RESPONSE FACTOR:

The response factor measures the instrument's response to specific chemical compounds. A value outside that criteria indicates a serious detection and quantitation problem, or poor sensitivity.

VOA: Response factor criteria were met.

ORGANIC DATA ASSESSMENT

5. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of performing satisfactorily at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is performing satisfactorily on a daily basis.

Percent relative standard deviation (RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentrations. Percent difference (%D) compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance.

INITIAL CALIBRATION:

VOA: %RSD criteria were met.

CONTINUING CALIBRATION:

VOA: %D criteria were met.

ORGANIC DATA ASSESSMENT

6. SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

VOA: Percent recoveries for all surrogates were within QC limits.

7. INTERNAL STANDARD PERFORMANCE

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +150%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ± 30 seconds from the associated continuing calibration standard.

VOA: Recoveries for all internal standards met QC requirements.

8. COMPOUND IDENTIFICATION:

VOLATILE FRACTION:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary ion intensities with 20% of that in the standard compound. For tentatively identified compounds (TIC), the ion spectra must match accurately.

VOA: Identification criteria were met.

ORGANIC DATA ASSESSMENT

9. MATRIX SPIKE/ SPIKE DUPLICATE ANALYSIS

The MS/SD and blank spike/spike duplicate are generated to determine the precision and accuracy of the analytical method. This data may be used in conjunction with the other QC criteria for additional qualification of data. The following results were noted for MS/SD analysis:

VOA: %Recoveries and RPDs for the blank spike and spike duplicate were within the QC limits of the method employed. %Recovery for Chlorobenzene in spiked sample SS-SD4(MSD) was high. RPDs for Trichloroethene, Benzene, and Toluene were also high. No qualifications were placed on sample results due to %recovery and RPD results.

10. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

VOA: Positive results were found for Methylene Chloride in the method blanks and in the associated samples, therefore, Methylene Chloride was negated in the samples. Recoveries and RPDs for the matrix spike and matrix spike duplicate exceeded QC limits. No action was taken. All other QC criteria were met. Overall the data is usable. No data validation qualifications were made.