

G. C. ENVIRONMENTAL, INC.

ENVIRONMENTAL CONSULTANTS

May 11, 2007

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Regional Hazardous Waste Remediation
New York State Department of Environmental Conservation, Region 3
Division of Environmental Remediation
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Subject:

Revised Site Characterization and Interim Remedial Measures Work Plan

101 Westmoreland Avenue White Plains, New York

Order on Consent Index No. D3-0504-06-09

Site Code No. 360095 GCE Project No. 05-003-00

Dear Mr. Pergadia:

Enclosed please find the Revised Site Characterization Work Plan prepared by G. C. Environmental, Inc. (GCE) for the subject property on behalf of Automobile Club of New York, Inc., the Respondent, for your review and comments.

The Revised Site Characterization Work Plan was prepared to and addresses the comments that were included in the March 27, 2007 letter from Ms. Janet E. Brown of your department and a subsequent conversation I had with Ms. Brown on April 19, 2007.

If you have any questions concerning this project, please feel free to call me at (914) 674-4346, ext 111.

Very truly yours.

Gregory A. Collins

in low of

President Enclosures

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G. C. ENVIRONMENTAL, ING.

ENVIRONMENTAL CONSULTANTS

REVISED SITE CHARACTERIZATION AND INTERIM REMEDIAL MEASURES WORK PLAN

MAY 14 2007

L.I. OFFICE: (631) 249-0147

OF

101 WESTMORELAND AVENUE WHITE PLAINS, NEW YORK ORDER ON CONSENT NO. D3-0504-06-09 SITE CODE NO. 360095

PREPARED FOR:

NEW YORK STATE
DEPARTMENT OF ENVIRONMETNAL CONSERVATION
REGION 3
DIVISION OF ENVIRONMENTAL REMEDIATION
21 SOUTH PUTT CORNERS ROAD
NEW PALTZ, NEW YORK 12561

ON BEHALF OF AUTIMOBILE CLUB OF NEW YORK, INC.

DATE ISSUED: MAY 11, 2007

GCE PROJECT NUMBER: 05-003-00

The Site Characterization and Interim Remedial Measures Work Plan described herein was prepared by and/or under the supervision of the undersigned, of G. C. Environmental, Inc. (GCE). The plan was prepared in accordance with New York State Department of Environmental Conservation (DEC) Draft DER-10 Technical Guidance for Site Investigation and Remediation dated December 2002, DEC Sampling Guidance and Protocols dated September 1992 and Proposal/Work Order Number 04425, and is subject to the Consulting Services Agreement signed prior to initiation of the assessment.

Prepared By:	
Val Gatallin, C.P.G. Environmental Scientist	5/11/07 Date
Report Reviewed and Approved By:	
Nahum Kedem, P.G. Vice President	Date Date
	6)11/0-

President

TABLE OF CONTENTS

1.0	INT	RODUCTION AND PURPOSE1										
2.0	BACKGROUND INFORMATION1											
	2.1	Site Location and Description										
	2.2	Physical Site Characterization										
		2.2.1 Site Topography										
		2.2.2 Geology and Hydrogeology 2.2.2.1 Regional Geology and Hydrogeology										
		2.2.2.1 Regional Geology and Hydrogeology 2.2.2.2 Site Geology										
		2.2.2.3 Site Geology 2.2.2.3 Site Hydrogeology										
		2.2.3 Sensitive Environmental Receptors										
	2.3	Previous Environmental Reports										
3.0	woi	RK PLAN SCOPE6										
	3.1	Objectives										
	3.2	Soil Borings										
	3.3	Waste Oil Tank Abandonment										
	3.4	Soil Vapor Intrusion Investigation										
		3.4.1 Soil Vapor Probe Installation										
	2.5	3.4.2 Soil Vapor Sampling										
	3.5	Groundwater Investigation 3.5.1 Monitoring Well Installation										
		3.5.2 Monitoring Well Survey and Groundwater Level Measurement										
		3.5.3 Groundwater Sampling										
	3.6	Waste Management										
	3.0	3.6.1 Excavated Soil										
		3.6.2 Soil Cuttings										
		3.6.3 Groundwater and Decontamination Water										
		3.6.4 Disposable Sampling Equipment										
4.0	QUA	ALITY ASSURANCE PROJECT PLAN14										
	4.1	Groundwater Sampling										
		4.1.1 Field QA/QC Samples										
	4.2	Soil Sampling										
	4.2	4.2.1 Field QA/QC Samples										
	4.3	Sample Handling and Documentation										
	4.4	Soil Vapor Sampling 4.4.1 Field QA/QC Samples										
	4.5	Monitoring Well Installation										
	4.6	Data Validator Qualifications										

5.0	COMMUNITY AIR MONITORING AND HEALTH AND SAFETY PLAN20
6.0	SCHEDULING, REPORTING AND NOTIFICATIONS21
LIST	OF FIGURES
1. 2. 2A. 3.	Site Locus Map Site Plan with Proposed Monitoring Wells Locations Site Plan with Proposed Soil Vapor Probe Locations USGS Topographic Map
LIST	OF APPENDICES
A. B. C. D.	Health and Safety Plan G. C. Environmental, Inc. Qualifications Statement Laboratory Quality Manual and Certifications and Third Party Data Validator Statement of Qualification Interim Remedial Measures Plan
LIST	OF TABLES
1. 2. 3.	Summary of Proposed Sampling Summary of Detected Compounds in Soil Samples (previous investigation) Summary of Detected Compounds in Groundwater Samples (previous investigation)

1.0 INTRODUCTION AND PURPOSE

G.C. Environmental, Inc. (GCE) has prepared this Site Characterization (SC) and Interim Remedial Measures (IRM) Work Plan (WP) pursuant to the Consent Order for the property entered between Automobile Club of New York and the New York State Department of Environmental Conservation (DEC). The Work Plan outlines the investigation that will take place at the property located at 101 Westmoreland Avenue, White Plains, New York (the Site). This PSA and IRM Work Plan has been prepared in accordance with DER-10 Technical Guidance for Site Investigation and Remediation dated December 2002 and DEC Sampling Guidance and Protocols dated September 1992.

2.0 BACKGROUND INFORMATION

2.1 Site Location and Description

The Site is located at 101 Westmoreland Avenue in the City of White Plains, Westchester County, New York, on the northwest side of Westmoreland Avenue, approximately 100 feet to the west of the T-shaped intersection formed by Westmoreland Avenue and Home Place and is occupied by RJT, an Automobile Club of New York approved auto-repair shop.

The Site consists of an approximately 9,000-square-foot rectangular-shaped parcel of land. The on-site facility consists of an office space, restrooms and a storage closet located in the southern portion of the building, an automobile exterior detailing area in the western portion of the building, with the remainder of the building utilized as an automobile repair area. The remainder of the Site consists of an asphalt-paved parking area located on the northeastern portion of the Site and gravel-paved parking area located on the western portion of the Site.

Please refer to Figures 1 and 2 for Site Locus Map and Site Plan, respectively.

2.2. Physical Site Characterization

2.2.1 Site Topography

According to the US Geological Survey (USGS) Topographic Map of White Plains, New York Quadrangle, US Geological Survey (USGS), dated 1967, photorevised 1979, the Site's elevation is approximately 210 feet above mean sea level. Topographically, the Site is essentially level with no abrupt changes in elevation. The topography in the vicinity of the Site slopes gently to the northwest towards the Bronx River located approximately 700 feet to the northwest of the Site. Please refer to Fig. 3 for the USGS Topographic Map.

2.2.2 Geology and Hydrogeology

2.2.2.1 Regional Geology and Hydrogeology

According to the 1970 Bedrock Geologic Map of New York, Lower Hudson Sheet and the 1989 Surficial Geologic Map of New York, Lower Hudson Sheet prepared by the University of the State of New York, the geology in the area of the Site consists of fluvial sand and gravel, which is underlain by bedrock composed of schists and amphibolites of the Manhattan formation. Based on the Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005, depth to bedrock at the Site is greater than 28 feet below grade. The approximate depth to bedrock in the vicinity of the Site can not be determined based on the regional geology.

Based on the topography and local waterways, local groundwater flow direction in the area of the Site could be inferred to be to the west-northwest towards a portion of Bronx River located approximately 500 feet to the northwest of the Site.

2.2.2.2 Site Geology

Based on the Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005, the geology of the Site to the explored depth of approximately 40 feet below grade consists of fill, represented by dark-gray fine-coarse sand and gravel, underlined by light-brown, well sorted, medium-coarse sand with little fine gravel.

2.2.2.3 Site Hydrogeology

Based on the Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005, groundwater flow direction at the Site is to the northwest. Depth to groundwater below the Site ranges from approximately 26 feet below grade (in MW-3) to 29 feet (in MW-1). Hydraulic conductivity (not measured) should be rather high due to rather coarse particle size of sediments (medium-coarse sand with little fine gravel). Hydraulic gradient is quite moderate (between MW-1 and MW-12 the gradient is about 2.48ft/103ft = 0.024 ft/ft. Please refer to the Figure 2 – Site Plan for the Groundwater Contours.

2.2.3 Sensitive Environmental Receptors

According to the 1980 U.S. Department of the Interior, Fish and Wildlife Service, National Wetlands Inventory Map for White Plains, New York Quadrangle, the nearest designated wetlands is the Bronx River located approximately 500 feet to the northwest of the Site, which is designated as Riverine, Upper Perennial, Unconsolidated Bottom, Permanent (R3UBH). According to the DEC Freshwater Wetlands Map for White Plains, Westchester County, New York Quadrangle, effective 1987, the nearest designated wetlands is a low-lying area located approximately 8,500 feet to the north-northeast of the Site, which is designated as "W-9".

2.3 Previous Environmental Reports

GCE's Phase I Environmental Site Assessment, prepared for Automobile Club of New York and dated February 4, 2005 (Phase I Report) revealed the following recognized environmental conditions:

• GCE's visual inspection of the Site revealed the presence of one (1) 550-gallon No. 2 fuel oil underground storage tank (UST) and one (1) 550-gallon waste oil UST located beneath the eastern portion of the on-site building. The fill port and vent pipe associated with the 550-gallon No. 2 fuel oil UST are located along the northeast side of the building and the fill port associated with the 550-gallon waste oil UST is located in the northeastern portion of the building. No leaks and/or spills associated with either UST and/or the associated fill ports and vent pipe were observed. According to Mr. Ray Tartaglione, with R.J.T. Motorists Services, Inc., a tenant at the Site, these two (2) USTs are of single-wall construction and they were installed in 2001, when one (1) waste oil UST and one (1) No. 2 fuel oil UST were removed. According to Mr. Tartaglione, contaminated soil was encountered during tank removal activities. All soil was excavated and removed. Based on its description, these removed USTs may have environmentally impacted the Site.

According to the Environmental Data Resources, Inc. (EDR) report, the Site is listed as a NY Spills Information Database (SPILLS) and UST site:

250-gallon waste oil UST. This SPILLS case was last reported as

Automobile Club of New York

101 Westmoreland Ave
White Plains, NY
This SPILLS case occurred on June 2, 2001 when there was a suspected tank failure with a 550-gallon No. 2 fuel oil UST and

Page 3

"Tanks have been removed and excavation is underway at site." According to Mr. Tartaglione, these two tanks were removed, all contaminated soil was removed and two (2) new USTs were installed. There is one (1) "in-service" 550-gallon used oil UST and one (1) 550-gallon No. 1, 2 or 4 fuel oil UST listed for this site.

Furthermore, GCE's visual inspection of the Site revealed one groundwater monitoring well located in the gravel-paved land on the northwestern portion of the Site. The Westchester County Department of Health (WCDH) requested the installation of this groundwater monitoring well in 2002 after soil contamination was discovered during the removal of the two (2) 550-gallon USTs containing fuel oil and waste oil in 2001. Upon the groundwater monitoring well installation and initial sampling, additional groundwater samples were collected on a quarterly basis for a period of one (1) year. Between January 2002 and January 2003, GCE conducted five rounds of groundwater monitoring at the Site. Laboratory analytical results of the last round indicate that concentrations of several volatile organic compounds (VOCs), namely 1.1-dichloroethene (15 microgram per liter (ug/l), 1,1dichloroethane (7.5 ug/l), 1,1,1-trichloroethane (140 ug/l) and 1,2,4-trimethylbenzene (6.3 ug/l) were detected above the DEC Water Quality Standards for Groundwater (Groundwater Standards) of 5 ug/l for all of the detected compounds.

- According to the 1930 Sanborn Fire Insurance map provided by EDR, there was a gasoline tank located on the southern portion of the Site which is currently occupied by the asphalt-paved parking area. No further information regarding this gasoline tank was provided to GCE. It is possible that this gasoline tank was removed during the construction of the existing building circa 1944. However, potential leaks and/or spills associated with this gasoline tank may have environmentally impacted the Site.
- According to Mr. Tartaglione, there was one (1) dry well located in the northeast portion of the on-site building. This dry well is currently filled and covered with a concrete slab. Mr. Tartaglione is unaware of when this dry well was closed. No further information regarding this dry well was provided to GCE. However, potential petroleum products entering this dry well may have environmentally impacted the Site.
- GCE's visual inspection of the immediate surrounding area revealed the presence of several fill port and vent pipes, most likely associated with petroleum and/or chemical storage tanks, located along Westmoreland Avenue hydraulically up/cross-gradient of the Site. Based on their

location, it is possible that these potential petroleum and /or chemical storage tanks may have environmentally impacted the Site.

• GCE's visual inspection of the surrounding area revealed the presence of Bearing & Motive Specialties, Inc., which is the closest hydraulically upgradient site with operations that would typically utilize chlorinated solvents, and automotive service and commercial establishments located in the immediate vicinity of the Site. Based on the nature of these establishments, it is likely that they utilize and/or generate petroleum and/or hazardous materials/wastes. Potential leaks and/or spills of petroleum products and/or hazardous materials/wastes at these off-site properties may have environmentally impacted groundwater below the Site.

In 2006, GCE performed an Additional Subsurface Investigation at the subject Site, which consisted of installation of seven (7) soil borings and two (2) groundwater monitoring wells and subsequent well survey, groundwater level measurement, and groundwater sampling. The Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005 included the following findings:

- Soil and groundwater below the Site are contaminated with two types of contamination: petroleum hydrocarbons and chlorinated hydrocarbons (chlorinated solvents).
- Subsurface soil samples were collected from soil borings B-1 through B-6 continuously using disposable polyethylene sample liners until groundwater was encountered. Soil boring B-7 was advanced directly to groundwater. No soil samples were collected from this boring since soil samples have already been collected from boring B-1, which was immediately adjacent to boring B-7. Petroleum hydrocarbons in the soil were detected in soil borings B-1 and B-5 located on the central portion of the Site, in the area of the removed 550-gallon USTs formerly storing No. 2 fuel oil and waste oil. Concentrations of BTEX totaling 17,900 ug/kg (0'-2' below grade) and 4,121 ug/kg (15'-17' below grade) were detected in soil borings B-1 and B-5, respectively. No evidence of petroleum contamination in the form of free product was observed. Petroleum hydrocarbons in groundwater were also found only in the area of the removed USTs. Concentrations of BTEX totaling 41.1 ug/l in boring B-5 and 19.3 ug/l in boring B-7 were detected in groundwater samples. The petroleum plume is limited and is moving very slowly in the northwestern direction, along the general direction of groundwater flow. The data indicate an on-site source of petroleum contamination, most likely the former leaking waste oil underground tank located near soil boring B-5. As a result of natural bioattenuation, the petroleum

hydrocarbons are biodegrading and concentrations in groundwater are decreasing with time.

Please refer to Figure 2 for the previous soil sample locations.

• Chlorinated hydrocarbons and solvents present at the Site included tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), dichloroethane (DCA) and their isomers. With the exception of soil boring B-1 located in the area of the historical dry well, where the concentration of total chlorinated solvents was 348,200 ug/kg (0'-2'), and soil boring B-5 (20'-22'), where the concentrations of total chlorinated solvents was 11,802 ug/kg, these compounds are either not detected in any of the soil borings, or detected far below their detection limits. However, groundwater sampling results indicated that PCE, TCE and DCE contamination was present throughout the Site and off-site with higher concentrations (160-195 ug/l) located along the northwestern (down-gradient) and southeastern (up-gradient) boundaries of the Site. Minimal concentrations or no contamination is present in the groundwater samples collected from the central portion of the Site, where the hydrocarbon plume is present.

The source of the chlorinated solvents in groundwater is unknown. However, the distribution pattern of the contaminants indicates a strong potential for an off-site up-gradient source(s) impacting groundwater at the subject site from extended releases of chlorinated solvents into the soil and groundwater from off-site.

In the central portion of the Site, in the area of removed USTs, groundwater is most likely under anaerobic conditions. Under anaerobic conditions, the natural bioattenuation (reductive dechlorination process) typically leads to a reduction of PCE, TCE and DCE.

Please refer to Tables 2 and 3 for the summaries of compounds found in soil and groundwater samples collected during previous investigations.

3.0 WORK PLAN SCOPE

3.1 Objectives

The main objectives of this SC are:

- Further delineate the extent of contaminants in soil and groundwater at the Site;
- Identify the sources of contamination and the migration pathways on or

through soil and groundwater;

- Abandon in-place the 550-gallon waste oil UST present at the Site (this task will be performed under the jurisdiction of WCDH and the City of White Plains Building Department). The analytical data and summary of this work will be submitted for DEC/New York State Department of Health (DOH) review as an appendix to the SC and IRM Report. Recommended Soil Cleanup Objectives provided in the DEC TAGM #4046 will be utilized as cleanup goals for the UST abandonment work;
- There are no floor drains and/or sewer lines located in the auto-repair shop. All utilities are brought to the Site overhead. The only known underground piping are these that are associated with the on-site waste oil and heating oil. However, based on their limited size and extent and since their floor exit points are sealed, they are not likely to create potential contamination pathways. GCE will investigate preferential pathways for off-site and/or on-site contamination identified during the SC;
- Collect and evaluate all data necessary to evaluate further remedial action if requested by the DEC.

3.2 Soil Borings

In order to further delineate the horizontal and vertical extent of soil contamination, GCE proposes to advance several soil borings via the Geoprobe drilling method at the Site as follows:

One (1) soil boring will be advanced in the likely center of the historical dry well and four (4) soil borings will be advanced 5 feet away from the boring in the middle of the historical dry well and 90 degree from each other. All borings will be extended to the depth of groundwater. Additional investigation with respect to soil and/or groundwater conditions below the water table and on top of the bedrock may be required in the future based upon the results of the initial SC. Soil samples from the borings will be collected at 5-foot intervals and field screened for the presence of total volatile organic compounds (VOCs) using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards. The soil samples will be visually classified and logged by the GCE's on-site geologist for soil characterization purposes.

In the event that soil exhibiting elevated levels of total VOCs, olfactory or visual evidence of contamination is encountered in any of the outer four (4) soil borings, an additional soil boring(s) will be advanced 5 feet away and inline with the impacted soil boring(s) and the central boring. The same procedure will be followed for all of the impacted soil borings until no impacted soil is

encountered. The additional soil boring(s) will extend to the same depth and will include the same sampling intervals as the first five (5) soil borings. Impacted soil will be defined as soil samples exhibiting PID field screening levels of above 20 parts per million (ppm) and visual and olfactory evidence of contamination.

Laboratory obtained glassware will be used for the soil samples and will consist of the following:

- Volatile Organic Compounds (VOCs) one (1) 4-ounce glass jar equipped with teflon-lined cap per sample;
- ✓ Semi-Volatile Base-Neutrals Organic Compounds (SVOCs) one (1) 8-ounce glass jar equipped with teflon-lined cap per sample;

The soil samples will be placed into two (2) glass containers equipped with teflon-lined caps. Air in the head space of the one (1) container (SVOC) will be allowed to develop. The head space will be field screened for the presence of total VOCs using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards.

Two (2) non-impacted soil samples with the highest PID field screening levels but below 20ppm, from each non-impacted soil boring, will be submitted to the laboratory for analysis.

One (1) impacted soil sample with the highest PID reading from each impacted boring, but only below 15 feet deep, will be analyzed for the presence of additional compounds which may be required for soil remediation design, such as: nitrate, sulfate, iron, manganese and methane.

The soil samples will be logged and transferred under a chain-of-custody protocol to a New York State ELAP-approved laboratory. All soil samples will be analyzed for the presence of VOCs using EPA Method 8260 and SVOCs using EPA Method 8270. Laboratory analytical results from soil borings will be compared to the Restricted Use Soil Cleanup Objectives – Protection of Groundwater Standards outlined in 6NYCRR Part 375-6.

The DEC has the right to split or duplicate the samples. All field work including boring locations, sample locations and depth are subject to field conditions and may be modified in the field using GCE's best judgment.

3.3 Waste Oil Tank Abandonment

In order to properly abandon in-place the 550-gallon waste oil UST located at the Site, GCE will advance four (4) soil borings immediately adjacent to the UST. Soil borings will be advanced via the Geoprobe drilling method. Soil borings will be advanced to a depth of approximately 2 feet below the UST's invert. One

(1) soil sample from each boring representing the two (2) feet immediately below the UST's invert will be collected continuously and field screened for the presence of total VOCs using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards. The soil samples will be visually classified and logged by the GCE's on-site geologist for soil characterization purposes.

Laboratory obtained glassware will be used for the soil samples and will consist of the following:

- Volatile Organic Compounds (VOCs) one (1) 4-ounce glass jar equipped with teflon-lined cap per sample;
- Semi-Volatile Base Neutrals Organic Compounds (B/N) and 8 RCRA Metals one (1) 8-ounce glass jar equipped with teflon-lined cap per sample.

One (1) soil sample from each soil boring, as described above, will be submitted to the laboratory for analysis. In the event that no soil contamination is found in any of the soil samples, the waste oil UST will undergo a tightness test, and, if the tank passes such test, the tank will be abandoned in-place.

If soil contamination is found in any of the soil borings, GCE will prepare alternative work plan.

All work associated with tank abandonment including soil sampling, tank testing and abandonment, reporting and additional work if warranted, will be conducted under the jurisdiction and supervision of both, the WCDH and the City of White Plains Building Department. QA/QC procedures for waste oil UST soil sampling will be conducted in accordance with the WCDH requirements.

The scope of work for the UST abandonment in-place has been approved by the WCDH.

3.4 Soil Vapor Intrusion Investigation

In accordance with the DEC Program Policy (DER-13 / Strategy For Evaluating Soil Vapor Intrusion at Remedial Sites in New York, dated October 18, 2006), all contaminated sites in New York State, especially sites contaminated with chlorinated volatile organic compounds, should be evaluated to determine whether these sites have the potential for exposures related to soil vapor intrusion, which is described as the migration of volatile chemicals (in vapor form) from the subsurface into overlying or adjacent buildings. This SC Work Plan describes the Soil Vapor Probe installation and Soil Vapor Sampling techniques.

Soil Vapor Probe Installation 3.4.1

✓ All vapor probes will be installed immediately prior to soil vapor sampling will be conducted. The selection of the soil vapor probe locations was based on previously identified areas of environmental concern, the accessibility of the Site, on-site conditions and the locations of public underground utilities. A total of twelve (12) soil vapor probes are proposed to be installed at the Site under this SC Work Plan. Five (5) soil vapor probes will be installed along the interior perimeter of the garage (probes VP-1, VP-2, VP-3, VP-4 and VP-5), two (2) probes (VP-6 and VP-7) will be installed in the central portion of the garage, downgradient of the existing dry well and fuel oil tank and one (1) probe (VP-8) will be installed within the office area. Please refer to the Figure 2A for the Site Plan and location of proposed soil vapor probes. These soil vapor probes will be installed as permanent sub-slab vapor probes. A 1inch diameter hole into the concrete floor will be drilled using electric rotary hammer drill and masonry bit. Inert polyethylene tubing of the appropriate size (1/8 to 1/4 inch diameter) and of laboratory or food grade quality will be installed into the hole. The tubing will not extend further than 2 inches into the sub-slab material. The implant will be sealed to the surface with non-VOC-containing and and a surface with surface with non-VOC-containing and a surface with surface with non-VOC-containing and a surface with surface with non-VOC-containing and a surface with non-VOC-contai plugged. A protective eight (8)-inch diameter flush-mounted protective watertight manholes will be set around the top of each probe tubing and grouted in place to the top of bentonite to minimize infiltration of water or outdoor air, as well as to prevent accidental damage.

To investigate the influence of contaminated groundwater on soil vapor and to characterize the vertical profile of contamination, four (4) soil vapor probes are proposed to be installed on the Site near the location of monitoring wells MW-6 (VP-9), MW-5 (VP-10), MW-4 (VP-11) and MW-2 (VP-12). These soil vapor probes will be installed at a depth of approximately 25 feet (2 to 3 feet above groundwater table using the Geoprobe drilling method. Implants, or one (1)-foot long stainless steel screens will be fitted with inert polyethylene tubing of the appropriate size (1/8 to 1/4 inch diameter) and of laboratory or food grade quality to the surface and plugged. Clean silica filter sand No. 2 will be placed in the annulus of the borehole to create a sampling zone, to a depth of approximately two (2) feet above the probe screen. A three (3)-foot thick bentonite seal will be installed above the sand filter pack to prevent outdoor air infiltration. The remainder of the borehole will be backfilled with clean material. A protective eight (8)-inch diameter flush-mounted protective watertight manholes will be set around the top of each probe tubing and grouted in place to the top of bentonite to minimize infiltration of water or outdoor air, as well as to prevent accidental damage.

3.4.2 Soil Vapor Sampling

Soil vapor sampling will be conducted during the next heating season after the IRM activities are completed. As a part of soil vapor investigation, a building questionnaire will be conducted 24 hours prior to sampling. Such questionnaire will include a product inventory to determine whether there are products that contain VOCs. If such product exist, they will be removed so they do not impact the sampling results.

All vapor probes will be installed immediately prior to soil vapor sampling will be conducted. The newly installed soil vapor probes will be allowed to stabilize and equilibrate with subsurface conditions for approximately 48 hours prior to sampling. Soil vapor samples will be collected in the same manner at all locations to minimize possible discrepancies. To ensure stagnant or ambient air is removed from the sampling system and to assure samples collected are representative of subsurface conditions, a one to three implant volumes (the volume of the sample probe and tube) will be purged prior to collecting the samples. Flow rates for both purging and collecting will not exceed 0.2 liter per minute to minimize outdoor air infiltration during sampling. A real time tracer gas (helium) will be used prior and subsequent to collecting soil vapor samples to verify that an adequate seal has been created around the soil probes. If a leak (>10%) is detected prior to soil vapor sampling, additional hydrated bentonite will be applied, allowed time to set and followed by another round of real time tracer gas testing in accordance with DOH guidance documents.

One (1) soil vapor sample will be collected from each newly installed soil vapor probe. Laboratory obtained samplers will be used for the soil vapor samples and will consist of the following:

• Volatile Organic Compounds (VOCs) – one (1) 6-liter SUMMA canister with settable flow controller.

Please refer to Table 1 for the Summary of Proposed Sampling.

All soil vapor samples will be logged and transferred under a chain-of-custody protocol to a New York State Air and Emissions ELAP-approved laboratory for analysis of VOCs using EPA Method TO-15. Soil vapor samples will be collected via SUMMA canisters with a preset 8-hour collection period at a rate no greater then 0.2 liters per minute.

3.5 Groundwater Investigation

3.5.1 Monitoring Well Installation

The selection of the monitoring well locations was based on previously identified areas of environmental concern, the accessibility of the Site, on-site conditions and the locations of public underground utilities.

A total of six (6) additional groundwater monitoring wells (MW-4 through MW-9) are planned to be installed on the Site as follows: MW-4 will be installed to the northwest and as close as possible to the historical dry well. MW-5 will be installed to the west and hydraulically downgradient of the removed USTs, MW-6 will be installed along the north wall and inside of the on-site structure, and MW-7 through MW-9 will be installed along the western border of the Site in order to fully delineate the groundwater contamination plume.

Please refer to Figure 2 – Site Plan for proposed monitoring well locations.

The proposed groundwater monitoring wells will be installed using the Geoprobe drilling method with a 4-inch inner diameter hollow-stem augers. The monitoring wells will be constructed of Schedule 40, 2.0inch diameter PVC riser pipe, attached with threaded joints to schedule 40, 2.0-inch diameter, 0.020-inch slotted PVC well screen. A 15-foot screen section will be placed at each well, extending 10 feet below groundwater. Clean silica filter sand No. 2 will be placed in the annulus of the borehole to minimize the amount of fine sediment entering the well, to a depth of approximately two (2) feet above the well screen. A two-foot thick bentonite seal will be installed above the sand filter pack prevent the infiltration of surface water into the Bentonite/cement grout will be placed from the top of the bentonite seal to approximately one (1) foot below ground surface. The monitoring wells will be fitted with eight (8)-inch diameter flush-mounted protective watertight manholes set to prevent tampering and provide protection from the surface water runoff.

Upon installation, the monitoring wells will be developed using a submersible pump until the groundwater appears to be free of sediments. The newly installed wells will be allowed to stabilize and equilibrate with the aquifer for approximately two weeks.

Additional investigation with respect to groundwater quality at the top of the bedrock and within the bedrock may be required based on the results of the SC.

3.5.2 Monitoring Well Survey and Groundwater Level Measurement

Approximately two (2) weeks subsequent to installation, GCE will conduct a survey and groundwater level measurements of all the existing and newly installed monitoring wells. The monitoring well casing rim elevations will be surveyed to the nearest 0.01-foot.

Depth to groundwater and free product, if detected, will be measured using a Solinst oil/water interface probe equipped with a fiberglass measuring tape. The same probe and measuring tape will be used for all measurements. All of the groundwater level measurements will be taken from an etch mark at the top of the PVC casing of each well.

3.5.3 Groundwater Sampling

Groundwater samples will be collected from the existing and all newly installed monitoring wells. Laboratory obtained glassware will be used for the groundwater and free product samples and will consist of the following:

- Volatile Organic Compounds (VOCs) two (2) 40-ml glass vials preserved with hydrochloric acid and equipped with a teflon-lined cap.
- Semi-Volatile Organic Compounds Base Neutrals (SVOS) one
 (1) 1-liter glass container equipped with a teflon lined cap for groundwater;

All groundwater samples will be logged and transferred under a chain-of-custody protocol to a New York State ELAP-approved laboratory for analysis of VOCs using EPA Method 8260. Groundwater samples collected from groundwater monitoring wells MW-4 and MW-5 will also be analyzed for the presence of SVOC using EPA Method 8270.

The DEC has the right to split or duplicate the samples.

Additionally, a Horiba U-22XD water quality multiparameter system (with flow-through-cell) will be used to monitor water quality parameters during purging: electrical conductivity, dissolved oxygen, pH, salinity, total dissolved solids, oxidation-reduction potential, turbidity and temperature. Three of these water quality parameters (dissolved oxygen, pH and oxidation-reduction potential) also will be used to evaluate the natural attenuation of the contaminants in groundwater.

3.6 Waste Management

The following wastes will be generated as part of this Investigation: 1) excavated soil; 2) drilling-generated soil cuttings; 3) well development and purge water; and 4) disposable sampling equipment.

3.6.1 Excavated Soil

All excavated soil will be placed on two (2) layers of 10-mil polyethylene sheeting. At the end of each day, the soil pile will be covered by two (2) layers of 10-mil polyethylene sheeting. After soil excavation is completed, pre-disposal soil sampling will be performed. Collected pre-disposal soil samples will be analyzed for RCRA Waste Characterization and disposal facility requirements.

3.5.3 Soil Cuttings

Soil cuttings from soil borings completed during this investigation will be placed in labeled and sealed, DOT-approved 55-gallon drums. The drums will be stored temporarily in an existing containment area until appropriate disposal is identified.

3.5.4 Groundwater and Decontamination Water

Purge water removed from the monitoring wells and decontamination water generated during all sampling activities will be transferred into labeled and sealed, DOT-approved 55-gallon drums and stored on-site until groundwater samples are analyzed. Based on the sampling results, the drummed wastewater will be disposed of in accordance with all applicable regulations.

3.5.5 Disposable Sampling Equipment

Incidental waste generated during sampling activities may include latex gloves, disposable bailers, spent respirator cartridges, plastic sheeting, paper towels and similar expended and discarded field supplies. These materials also will be temporarily stored in a 55-gallon drum in the containment area and will be disposed of in accordance with all applicable regulations.

4.0 QUALITY ASSURANCE PROJECT PLAN

This section provides information on the Site-specific quality assurance project plan (QAPP). The goal of this plan is to achieve data quality objectives (DQO) for this project. The laboratory analytical procedures will conform to the DEC Analytical

Services Protocol (ASP). Category B data deliverables and a data usability summary report (DUSR) will be submitted for all final delineation samples and for post-remediation confirmatory end-point samples.

GCE will utilize EcoTest Laboratories, Inc. (EcoTest) of North Babylon, New York, as an analytical laboratory for the activities outlined in the SC Work Plan. EcoTest is an independent testing laboratory which was founded in 1977. Since its inception, EcoTest strives to produce the most accurate and precise analytical results possible. Their data is used by the clients who must comply with federal, state and local regulations such as SPDES, NPDES, RCRA and SDWA.

In order to achieve these goals, EcoTest implements the following procedures:

- Adequately staffed and equipped laboratory facility;
- Successful participation in the proficiency testing program operated by the New York State Department of Health Environmental Laboratory Approval Program or another accredited provider;
- Successful implementation of a NELAC complaint quality system;
- Successful biennial assessments by the New York State Environmental Laboratory Approval Program, or Primary Accrediting Authority;
- Laboratory test results that are supported by quality control data and documented laboratory testing procedures.

Please refer to Appendix D for Quality Manual and Certifications.

4.1 Groundwater Sampling

Prior to sampling, the standing water volume will be calculated by using the depth to groundwater and total depth of the well. Three to five standing volumes of water will be purged from the monitoring wells prior to sampling in order to evacuate the water that has stagnated and/or thermally stratified in the well casing. Additionally, pH, temperature and specific conductance should be stabilize to +/- 10% over at least 3 successive well volumes and the turbidity readings is desired to stabilize at a value below 50 Nephelometric Turbidity Units (NTU). The wells will be purged using a submersible pump. When the calculated quantity of water will be purged from each well, a water sample will be obtained using a dedicated disposable bailer.

The sampling procedure used by GCE will utilize a bottom-fill check valve and double-check valve (in deep wells) disposable bailer. The bailer, made of polyethylene, will be slowly lowered into the well by hand. Once in position, the attached cord will be pulled to set the check valve and the bailer will be then retrieved.

4.1.1 Field QA/QC Samples

Field QC samples will be served as a control and check mechanism to monitor the consistency of sampling methods and the influence of off-site factors on environmental samples.

Trip Blanks

Trip blanks will be prepared by laboratory with deionized laboratory grade water and one (1) blank will accompany all sample shipments to the laboratory. The water used will be from the same source as that used for the laboratory method blank. The trip blank will be handled and transported in the same manner as the samples collected which it will accompany. Trip blanks will be analyzed for VOCs using EPA Method 8260 to identify the presence of cross-contamination as a result of sample shipment, e.g. contaminated from the air, shipping containers, or from other items coming into contact with the sample bottles.

Field Blanks

Field blanks indicate if sampling equipment decontamination procedures are performed adequately between adjacent sampling locations. One (1) field blank will be collected during groundwater sampling. Field blank will be collected by filling a clean bailer with laboratory water in the field, and transferring this water into appropriate sample containers preserved in the same manner as other samples. The water used for the field blank will be from the same source as that used for the laboratory method blank. The field blank will be analyzed for VOCs using EPA Method 8260.

Duplicate Samples

In addition to replicate analyses performed in the laboratory, field duplicates also serve as a measure for precision. Duplicate samples will be collected at a frequency of 10 percent of all samples collected (two (2) groundwater samples). Duplicates will be obtained by collecting two (2) successive samples from the same location, placed in separate containers, and identified as different samples. Duplicate samples will be analyzed for VOCs using EPA Method 8260 and SVOCS using EPA Method 8270.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

MS/MSD samples will be used to assess influences or interferences caused by the physical or chemical properties of the sample itself. MS/MSD data will be reviewed in combination with other QC

monitoring data to determine matrix effects. The samples for the MS/MSD analyses will be collected from a sampling location that is believed to exhibit low-level contamination. A sample from an area of low-level contamination is needed because the objective of MS/MSD analyses is to determine the presence of matrix interferences, which can best be achieved with low level of contaminations. In accordance with the ASP protocol, MS/MSD samples will be collected at a frequency of two (2) samples for each 20 samples collected for VOC 8260 and for SVOC using EPA Method 8270 with a minimum of two (2) samples.

1

/ Please refer to the attached table for the Summary of Proposed Sampling.

4.2 Soil Sampling

Soil samples will be collected using disposable plastic scoops and will be transferred into the appropriate sampling containers.

4.2.1 Field QA/QC Samples

Field QC samples will be served as a control and check mechanism to monitor the consistency of sampling methods and the influence of off-site factors on environmental samples.

Trip Blanks

Trip blanks will be prepared by laboratory with deionized laboratory grade water and one (1) blank will accompany all sample shipments to the laboratory. The water used will be from the same source as that used for the laboratory method blank. The trip blank will be handled and transported in the same manner as the samples collected which it will accompany. Trip blanks will be analyzed for VOCs using EPA Method 8260 to identify the presence of cross-contamination as a result of sample shipment, e.g. contaminated from the air, shipping containers, or from other items coming into contact with the sample bottles.

Duplicate Samples

In addition to replicate analyses performed in the laboratory, field duplicates also serve as a measure for precision. Duplicate samples will be collected at a frequency of 10 percent of all samples collected (two (2) soil samples). Duplicates will be obtained by collecting two (2) grab samples from the same location, placed in separate containers, and identified as different samples. Duplicate samples will be analyzed for VOCs using EPA Method 8260 and for SVOC using EPA Method 8270.

✓ Please refer to the attached table for the Summary of Proposed Sampling.

4.3 Sample Handling and Documentation

The samples will be transferred into sample containers which will be packed and shipped back to the laboratory in a laboratory-supplied cooler with sufficient ice packs to maintain the sample temperature at 4°C at all times during shipping to the laboratory. Chain-of-custody protocols will be maintained from sample collection to delivery to the laboratory. Field information will be recorded in field report and sampling log sheets. Full documentation will be made as to the location and depth of all samples collected. Each sample will be labeled with GCE's project number, the sample location and depth interval, the date and time, the initials of the sampler and the requested analysis. Samples will be delivered to the analytical laboratory as soon as possible after collection.

Samples of free product, if present, will be placed in a separate cooler that does not contain any other samples.

4.4 Soil Vapor Sampling

Extreme care will be taken during all aspects of sample collection to ensure that sampling error is minimized and high quality data are obtained. The sampling team members will avoid actions (e.g. fueling vehicles, using permanent marking pens, and wearing freshly dry-cleaned clothing or personal fragrances), which can cause sample interference in the field. Appropriate QA/AC protocols will be followed for sample collection and laboratory analysis.

4.4.1 Field QA/QC Samples

Field QA/QC samples will be collected, stored, transported and analyzed in a manner consistent with site samples. The following QC samples will be collected to support the sampling activity:

Duplicate Samples

Duplicate samples will be collected at a frequency of 10 percent of all samples collected (one (1) soil vapor sample). Duplicate samples will be collected in separate sample containers, concurrently with soil vapor samples utilized T or Y connections using SUMMA canisters. Duplicate samples will be analyzed for VOCs using EPA Method TO-15.

Background Air Samples

Background air samples will be collected to characterize site-specific background outdoor and indoor air conditions. These samples will be collected concurrently (over an 8-hour period) with and in the same manner as sub-slab vapor sample from the office area. They will be used in the evaluation of soil vapor results (i.e., to identify potential outdoor

and indoor air interferences associated with the infiltration of outdoor and indoor air into the sampling apparatus while the soil vapor sample was collected). One (1) outdoor and one (1) indoor air sample will be collected from representative locations at the Site. The outdoor and indoor air samples will be analyzed for VOCs using EPA Method TO-15 with selective ion monitoring (SIMs) in order to achieve a reporting limit of 0.25 ug/m³ for trichloroethene. All other VOCs on the TO-15 full scan list will be analyzed to a reporting limit of 1 ug/m³.

Trip blanks will not be collected, because it is not possible to mimic round-trip shipping conditions with a single trip blank since sample canisters are shipped from the lab under vacuum pressure and returned to the lab at or close to ambient pressure.

Please refer to Table 1 for the Summary of Proposed Sampling.

4.5 Monitoring Well Installation

All drilling equipment utilized in well advancement will be steam cleaned prior to initial use. All metal parts will be cleaned using mechanical and chemical cleaning procedures which will consist of brushing and sweeping off loose dirt followed by detergent washing and potable water rinsing. During the advancement of the boreholes, soil cuttings will be collected into DOT-approved 55-gallon steel drums and labeled accordingly. No oil, grease or any petroleum products will be used to lubricate rods. Care will be taken to insure that no oil, grease or other lubricant will be leaking from the drill rig and entering the borehole.

The PVC riser pipes and screens will be transported to the Site and stored, prior to their installation, in their original polyethylene shipping sleeves. To prevent possible contamination of the wells by VOCs, no glue, tape or other solvent containing materials will be used to join pipe sections together.

4.6 Data Validator Qualifications

GCE will utilize services of Ms. Judy Harry as a third party data validation expert. Mr. Harry has thirty years experience environmental analytical processing and data usability interpretation. Her experience includes providing data validation services for various remedial investigation and site characterization purposes. Ms. Harry holds Bachelor degree in Chemistry from University of North Carolina. Please refer to Appendix C for Ms. Harry's Statement of Qualification and Resume.

5.0 COMMUNITY AIR MONITORING AND HEALTH AND SAFETY PLAN

Community Air Monitoring Plan (CAMP) requires real time monitoring for the presence of VOCs and dust at the downwind perimeter of designated work area when certain activities are in progress. The following CAMP will be implemented:

Total VOCs will be monitored at the downwind perimeter of the immediate work area continuously during excavation and drilling activities using a PID. The PID will be calibrated on a daily basis and will be capable of calculating 15-minute running average concentrations. Upwind concentrations of total VOCs will be measured at the start of each working day to establish background levels.

If total VOCs concentrations in the ambient at the downwind perimeter of the work area exceeds 5 ppm above background levels for 15-minute average, work activities will be temporarily stopped while air monitoring continued. When instantaneous readings show decrease of total VOCs below 5 ppm over background levels, work will resume with continued air monitoring.

If total VOCs concentrations in the ambient at the downwind perimeter of the work area persists at levels exceeding 5 ppm above background levels but less than 25 ppm, work activities will be stopped, source of vapors will be identified and corrective actions will be taken while air monitoring continue. After these steps, work activities will resume provided that the total VOCs levels at the half the distance downwind from the work area to the nearest commercial structure, but in no case less than 20 feet, is below 5 ppm above background levels for the 15-minute average.

If total VOCs concentrations in the ambient at the downwind perimeter of the work area exceeds 25 ppm above background levels, work activities will be shut down. Source of vapors will be identified and corrective actions will be taken while air monitoring continue. Work activities will resume only after instantaneous readings show decrease of total VOCs below 5 ppm over background for the period of 2 hours.

All 15-minute readings will be recorded and will be available for the review by the DEC and/or DOH personnel. Instantaneous readings, used for decision making purposes will be also recorded.

Periodic air monitoring for the presence of total VOCs will be conducted during non-intrusive field activities, such as collection pre-disposal soil samples and groundwater monitoring wells sampling. Periodic monitoring will be conducted using PID and will consist of taking ambient air reading upon arriving at the site, air monitoring while opening a well cap or during soil mixture, air monitoring during well development and/or purging and taking ambient air reading prior to leaving sampling location.

Particulate concentrations will be continuously monitored at the upwind and downwind perimeters of the work area using Portable Real-Time Particulate Monitor equipped with an audible alarm to indicate exceedance of the action level. Such monitor will be capable

of measuring particulate matters less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes or less for comparison to the airborne particulate action level. In addition, airborne dust migration will be visually observed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m³) greater than levels at the upwind measuring point for the 15-minute period or if airborne dust is observed escaping the work area, then dust suppression techniques, such as water spray will be activated. Work activities will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m³ above the upwind level and provided that no visible dust is escaping the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate level are greater that 150 mcg/m³ above the upwind level, work will be stopped and new dust suppression techniques will be implemented. Work will be resumed provided that dust suppression measures are successful in reducing the downwind PM-10 particulate levels to within 150 mcg/m³ of the upwind and no dust migration is visible.

All readings will be recorded and will be available for the review by the DEC and/or DOH personnel.

A site-specific Health and Safety Plan (HSP) was prepared for proposed Remedial Investigation at the Site and is presented in Appendix A. Companies providing services for this project on a subcontracted basis will be responsible for developing and implementing their own HSP.

6.0 SCHEDULING, REPORTING AND NOTIFICATIONS

"Upon final approval of the SC Report, a CD-ROM containing the SC Report in portable document format (PDF) format, will be submitted to the DEC.

GCE will commence the soil investigation within three (3) weeks of receipt of the approved SC workplan. The IRM schedule is included in Appendix D – IRM Plan. GCE will commence installation of the proposed groundwater monitoring wells within three (3) weeks of completion of the IRM.

GCE will commence quarterly monitoring of all of the on-site wells after three months after initial groundwater sampling. All collected groundwater samples will be analyzed for the presence of VOCs using EPA method 8260, except for samples collected from MW-4 and MW-5 which will also be analyzed for the presence of SVOC using EPA Method 8270.

Soil vapor sampling will be conducted during the next heating season after the IRM activities are completed.

Upon completion of the activities described in the SC and IRM Work Plan, GCE will prepare a SC and IRM Report that will include all data generated and all other information obtained during the SC and IRM, provide all of the assessments and evaluations as identified in the applicable documents, identify all additional data that must be collected and include a certification that all investigation activities were performed in full compliance with the approved SC and Work Plan.

GCE will provide the DEC with monthly progress reports in accordance with the requirements as outlined in the Order on Consent issued for the Site.

GCE will provide DEC with at least 10 working days advance notice of any field activities to be conducted in accordance with this Work Plan.

GCE will provide DEC at least 7 working days advance notice of any project-related meetings and inspection, and final inspection and meeting.

Table 1
Summary of Proposed Sampling

Summary of Proposed Sampling											
	Matrix	Number of Boring	VOC (8260)	SVOC (8270)	8 RCRA Metals	VOC (TO-15)	* Nitrate (353.2)	* Iron & Manganese (601	* Sulfate (375.4)	* Methane (RSK-175)	
-		B-8	1	1	1						
Waste Oil UST		B-9	1	1	1						
	Soil Boring	B-10	1	1	1						
		B-11	1	1	1		4	4	4	4	
		B-12	2 2 2	2 2 2			1	1	1	1	
Dry Well	Call Danina *	B-13	2	2		_	1	1	1	1	
	Soil Boring *	B-14 B-15	2	2			1	1	1	1	
		B-16	2	2			1	1	1	1	
		Dottom	2	2			•	•	•		
	Soil Excavation	Sidewall	4	4							
	51 1 4	Trip Blanks	1								
	Blanks *	Duplicates	2	2							
Garage	Soil Vapor	VP-1 VP-2 VP-3 VP-4 VP-5 VP-6 VP-7 VP-8 VP-9 VP-10 VP-11 VP-12 Duplicates Indoor air Outdoor air				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1	1	1	
Whole Property	Ground Water	MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 Trip blanks Field blanks Duplicates MS/MSD samples Total samples	1 1 1 1 1 1 1 1 1 1 1 1 2 2	1 1 2 27	4	15	1 1 1 1 1 1 1 1 1 1 2	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

^{* -} Estimated

Table 2								
Summary of Detected Compounds in Soil Samples (Previous Investigation)								
101 Westmoreland Avenue, White Plains, NY								
GCF Project No. 05-003-00								

Rec			FAGM- ecomme Concentrations (ug/Kg) ded soil											
	T diameter	Cleanup Objectives (ug/Kg)	B-1 S-1A 0-2'	B-2 S-6 25-27'	B-3 S-5 20-22'	B-4 S-6 25-27'	B-5 S-4 15-17'	B-5 S-5 20-22'	B-5 S-6 25-27'	B-6 S-5 20-22'				
	Acetone	200		7	10	11	26	26						
	Benzene	60												
	2-Butanone	300					11							
	2-Chlorotoluene	n/s	1,700											
	cis-1,2-Dichloroethene (DCE)	200	7,800											
	1,2-Dichlorethane (DCA)	100	600											
	1,2-Dichlorobenzene	7900	150,000											
	1,4-Dichlorobenzene	8500	3,900		_									
voc	Ethylbenzene	5,500	1,400											
	Isopropylbenzene	2,300	320											
	Methylene chloride	100	2,300	5				2						
	m/p-Xylenes	1,200	6,400				1,800	2						
	n-Propylbenzene	3,700	1,200											
	n-Butylbenzene	10,000	1,100				2,400							
	o-Xylene	600	4,200				2,300	54						
	p-Isopropyltoluene	10,000	1,400				8,200	190						
	sec-Butylbenzene	10,000	660				2,800							
	1,3,5-Trimethylbenzene	3,300	4,600				6,900	39						
	1,2,4-Trimethylbenzene	10,000	14,000				16,000							
l	Trichloroethene (TCE)	700	1,900				2							
l	Tetrachloroethene (PCE)	1,400	180,000	3			1,000	11,000						
- 1	Tert butyl alcohol (TBA)	n/s						27	6					
	Toluene	1,500	5,900				21	2						
	Vinyl chloride (VC)	200												
	Naphthalene	13,000	6,100				26,000	17						
[Total VOCs		395,480	14	10	11	67,460	11,359	6	0				
	Total Chlorinated Solvents		348,200	8	0	0	1,002	11,002	0	0				
	Total BTEX		17,900	0	0	0	4,121	58	0	0				

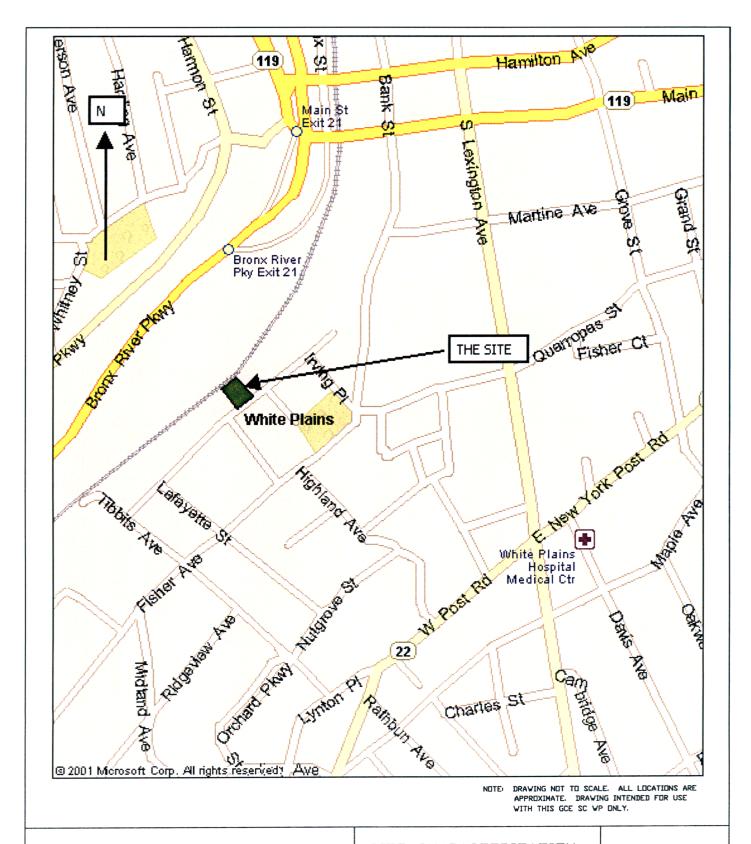
n/s
No standards
Compounds were analyzed, but were non-detected or detected below their detection limit.
11;000.
Compounds were detected above the TAGM Recommended Soil Cleanup Objectives.

Table 3
Summary of Detected Compounds in Groundwater Samples (Previous Investigation)
Avenue, white Plains NV
GCE Project No. 05-003-00

\vdash		New	/ YORK					GCE	erano Proje	Aver	nue, W <u>o. 05-</u> (/hite)03-0	Plains	, NY			·					
	Dav.	ter C	indwa Quality											ations (10/L)							
1	Parameter	dards &	MW-1	MW-	1 M	W-1	MW-	2 1 10	10/0	T	Concentrations (ug/L)											
L		ance	1/10/03	WS-	1 W	S-2	WS-	1 W	W-3 /S-1	MW WS-		B-2 WS-1	B-3 WS-	, ,	3-4	B-5	В-6		B-7	Trip Bl.	Field	
	Acetone	val	_		9/21/0	5 9/2	1/05	9/21/0	5 9/2	1/05	9/21/	_		6/22/0	5 6/2		NS-1 22/05	WS- 9/21/0	1 1	VS-1 21/05	T-1	F-1
	Benzene	1			├	+-									_	11	21	5/21/	33 912	21/05	9/21/05	9/21/
	2-Butanone	n/s	-		 				4_			\perp				_		 	+-			
	Carbon disulfide	n/s				+			1_	_						_	7.6		+			
	Chloroform	7	_		0.97	+-	_		╃—	_									+-	\dashv		
	cis-1,2-Dichloroethe	ne 5	\dashv		0.57	+-1	2		╀—	_		\perp					1.2		+	\dashv		1.8
	1,1-Dichloroethene	5		51	18		5		<u> </u>								2.5		1	5		
	1,1-Dichlorethane	5		20	10		4	12	4.0		5.1	2222	1.3					4.6	+	-		
	1,2-Dichlorethane	0.6				+		4.5	5.9	9	5.7		2						+-	\dashv	+	
	Ethylbenzene	5	1			+	+		<u> </u>	\dashv		\perp					$\neg \uparrow$		2.	4	-+	
	Isopropyibenzene	5	$\neg \vdash$	$\neg +$		├	+		-	4		\perp	$-\bot$			2	.1				-+	
	Methylene Chloride	5	_	\dashv		├	+		1.7	4	2	\perp				0	9		†—	┰		
/oc	Methyl-Tert-Butyl-Ethe	er 50	十	\dashv	0.56		+	0.75	 	4		\perp							14	_		
	m/p-Xylenes	5	7	-+		 	+	0.75		4		<u> </u>			1.6					+		
1	n-Propylbenzene	5	7	$\neg +$		 	+			+		<u> </u>				1	7		2.3	+		
9	o-Xylene	5					╁	\dashv		+		<u> </u>				1				+		
1	o-Isopropyltoluene	5	1	$\neg +$			┰			+		<u> </u>		[20			1.1	+		
s	ec-Butylbenzene	5		\neg	$\neg \dashv$		+-			4		<u> </u>				5.0	,			\dashv		
1	ert-butyl alcohol	50	1	\top			╁		1.4	+	1.3	L				1.2				╁		
I	ert-butylbenzene	n/s	1	$\neg \vdash$			+-	\dashv	0.54	+				$-\bot$		11.0	5			+	_	
1	,3,5-Trimethylbenzene	5	1	_	$\neg +$		╁		0.51	4-			$-\downarrow$							+-	\dashv	
1,	2,4-Trimethylbenzene	5	1	_ -	$\neg \neg$		+-	\dashv		+-						10			2.2	+-		
1,	1,1-Trichloroethane	5	27	ro :	130	140	17	70	50							26			2.6	+	-+-	
T	richloroethene (TCE)	5			1.9	1.8			- 5U	-	50			21				49		+		\dashv
Te	trachloroethene (PCI	5	3		2.4	2.3		8	16										1.8	1		-
To	luene	5		7				-	10		17	2.0	1	.4	1.4	21	3	3.4	21		_	\dashv
	nyl chloride	2	1				-	-+-		-						2			16			\dashv
Na	phthalene	10			_			\dashv									\mathbf{J}^{-}			-		
_	tal VOCs		344	15	54	160	196	;	80	8	. 					54					_	\dashv
	tal Chlorinated Solven	ts	344	15	3	160	195		77	78		5	2		14	204	57	7	78	0	2	\neg
	al BTEX		0	(,	0	0	+	2			5	22		1	25	57	7	40	0	0	
pΗ				7.3	30		6.96	, ,	2.07	2	-	0		\ 	0	42	0		19	0	0	
T°C				14.			14.9		4.69		-		+				<u> </u>					\neg
	nductivity (us/cm)			2,3			1,710		622				+	\dashv								\neg
Diss	solved Oxygen (mg/L)			5.8			3.6		0.8				+				L					\dashv
ORF	O (mV)			220			231		16												1	7
	_	n/s	No sta	ındards					<u>.~ 1</u>													\neg
	1	l.	^																			

Compounds were analyzed, but were non-detected or detected below their detection limit.

Compounds were detected above the New York Groundwater Quality Standards & Guidances values





G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

410 SAW MILL RIVER ROAD ARDSLEY, NEW YORK 10502

Tel: (914) 674-4346 Fax: (914) 674-4348 SITE CHARACTERIZATION

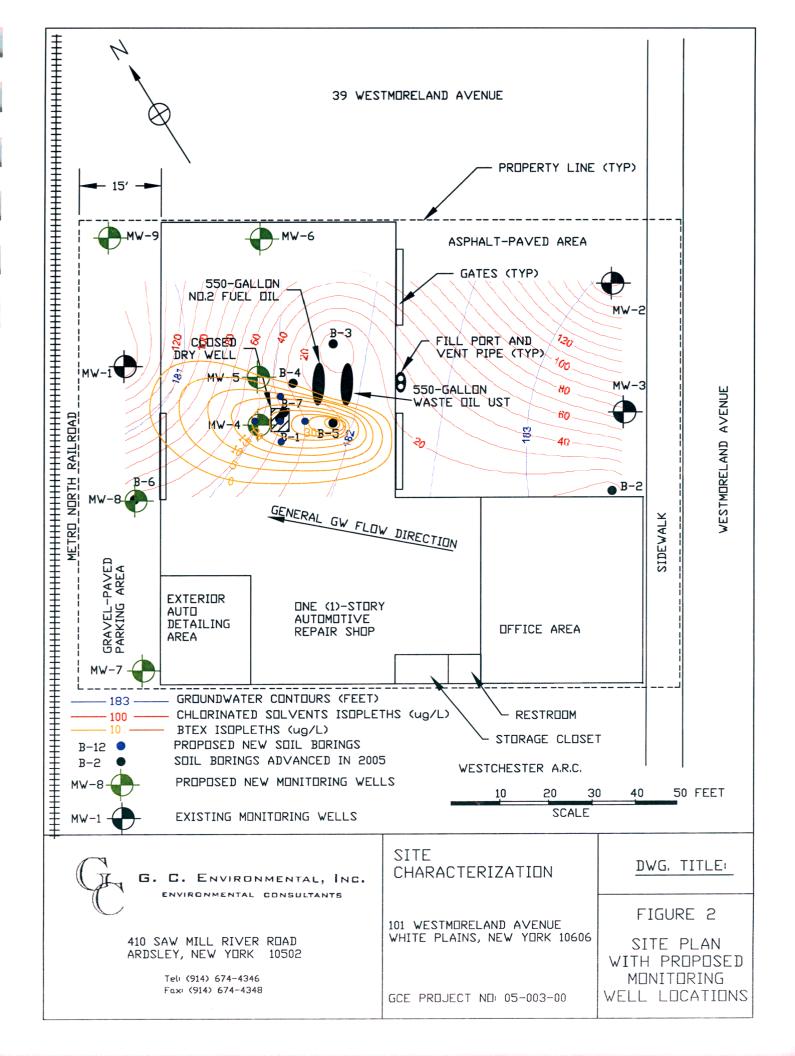
101 WESTMORELAND AVENUE WHITE PLAINS, NEW YORK 10606

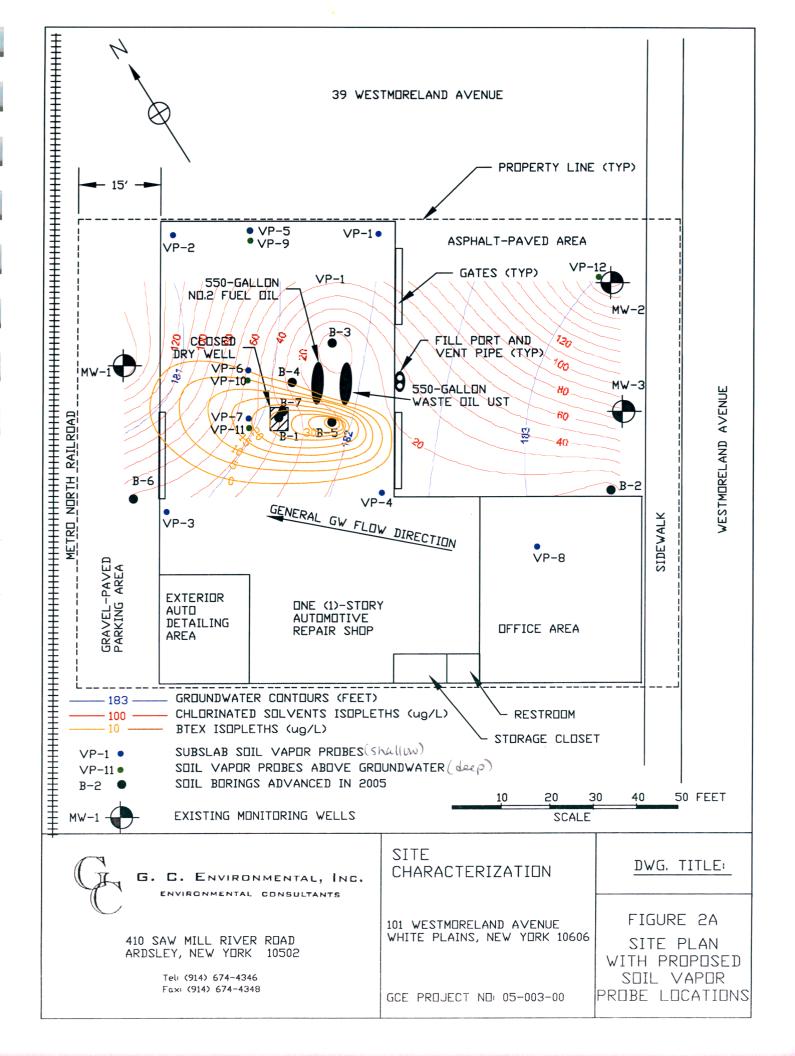
GCE PROJECT NO: 05-003-00

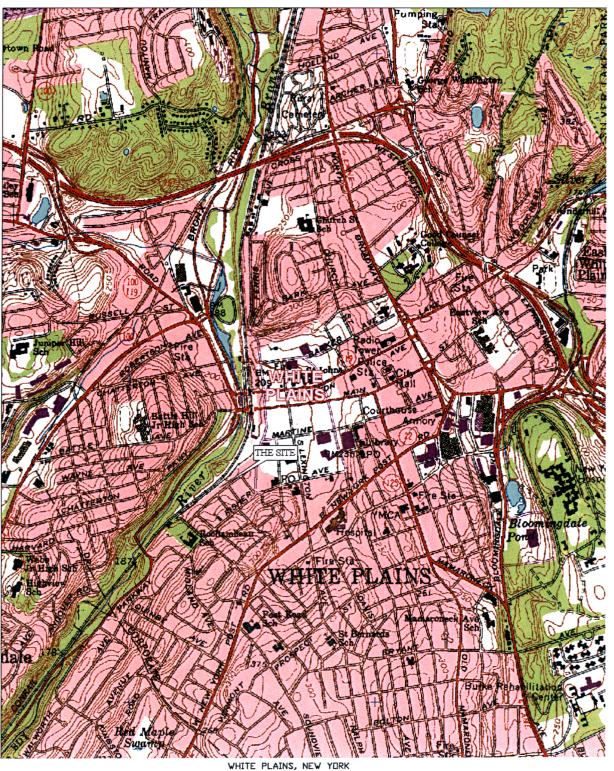
DWG. TITLE:

FIGURE 1

SITE LOCUS MAP







TOPOGRAPHIC QUADRANGLE
USGS 1967, PHOTOREVISED 1979



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101 WESTMORELAND AVENUE WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 3
USGS
TOPOGRAPHIC
MAP

HEALTH AND SAFETY PLAN FOR SITE CHARACTERIZATION AND INTERIM REMEDIAL MEASURES WORK PLAN

AT

101 WESTMORELAND AVENUE WHITE PLAINS, NEW YORK 10606

DATE ISSUED: MAY 11, 2007

GCE PROJECT NUMBER: 05-003-00

TABLE OF CONTENTS

1.0		GENERAL	1
2.0		SITE DESCRIPTION AND BACKGROUND	2
3.0		PLANNED SITE ACTIVITIES	3
4.0		KEY PROJECT PERSONNEL AND RESPONSIBILITIES	4
	4.1	Project Manager	4
	4.2	Corporate Director of Health and Safety	4
	4.3	Site Safety Officer	5
		Subcontractor Personnel	
5.0		HAZARDS OF KNOWN OR EXPECTED CHEMICALS OF CONCERN	6
6.0		PHYSICAL HAZARDS	6
	6.1	General Safe Work Practices	7
	6.2	Heavy Equipment	7
		Heat Stress	
	6.4	Noise	9
		Excavations	
	6.6	Underground and Overhead Utilities	10
		Materials and Equipment Handling Procedures	
	6.8	Fire/Explosion	11
7.0		PERSONAL PROTECTIVE EQUIPMENT	11
	7.1	Conditions Requiring Level C Protection	
8.0		SAFETY PROCEDURES	12
9.0		WORK ZONES AND DECONTAMINATION PROCEDURES	13

1.0 GENERAL

G. C. Environmental, Inc. (GCE) has prepared this Health and Safety Plan (HSP) for use during the Site Characterization (SC) activities at the property located at 101 Westmoreland Avenue, White Plains, New York 10606 (the Site). All work conducted at the Site including but not limited to soil excavation, soil boring drilling and monitoring well installation, will be in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, particularly those in 29 Code of Federal Regulations (CFR), and other applicable federal, state, and local laws, regulations, and statutes. A copy of this HSP will be kept at the Site during scheduled field activities.

This HSP addresses the potential hazards associated with planned drilling field activities at the Site. It presents the minimum health and safety requirements for establishing and maintaining a safe working environment during the course of work. In the event of conflicting requirements, the procedures or practices that provide the highest degree of personnel protection will be implemented. If work plan specifications change or if Site conditions encountered during the course of the work are found to differ substantially from those anticipated, the Corporate Director of Health and Safety must be informed immediately upon discovery, and appropriate changes will be made to this HSP.

It is the Project Manager's responsibility to ensure that health and safety procedures are enforced at the Site. Project personnel, including subcontractors, shall receive a copy of this HSP for review and sign the form to indicate acceptance before on-site project activities begin.

GCE's health and safety programs and procedures, including medical monitoring, respiratory protection, injury and illness prevention, hazard communication, and personal protective equipment (PPE), are documented in the GCE Corporate Health and Safety Manual. These health and safety procedures are incorporated herein by reference, and GCE employees will adhere to the procedures specified in the manual.

When specified in contract documents, this HSP may cover the activities of contractors. However, this HSP may not address hazards associated with tasks and equipment that are specialties of the contractor (e.g., operation of a drill rig). Contractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, and procedures.

GCE is responsible for the safety of its employees and subcontractors under its control. GCE will use a reasonable degree of care when marking potentially hazardous areas within its project work site and restricting access as appropriate. GCE will not be responsible for others outside its control who disregard such marked hazards or restricted access. This HSP has been prepared specifically for this project and is intended to address health and safety issues solely with respect to GCE's work. All references, therefore, to the Site, the work, activities, site personnel, workers, persons, or subcontractors in this HSP are with respect to GCE work only.

2.0 SITE DESCRIPTION AND BACKGROUND

The Site is located in the City of White Plains, Westchester County, New York, on the northwest side of Westmoreland Avenue, approximately 100 feet to the west of the T-shaped intersection formed by Westmoreland Avenue and Home Place and is occupied by RJT, an Automobile Club of New York approved auto-repair shop.

The Site consists of an approximately 9,000-square-foot rectangular-shaped parcel of land. The on-site facility consists of an office space, restrooms and a storage closet located in the southern portion of the building, an automobile exterior detailing area in the western portion of the building, with the remainder of the building utilized as an automobile repair area. The remainder of the Site consists of an asphalt-paved parking area located on the northeastern portion of the Site and gravel-paved parking area located on the western portion of the Site. In addition, there is groundwater monitoring well located in the gravel-paved land on the northwestern portion of the Site. Please refer to section 1.2.2 for addition information regarding this well.

Please refer to Figures 1 and 2 for Site Locus Map and Site Plan, respectively.

In 2006, GCE performed an Additional Subsurface Investigation at the subject Site, which consisted of installation of seven (7) soil borings and two (2) groundwater monitoring wells and subsequent well survey, groundwater level measurement, and groundwater sampling. The Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005 included the following findings:

- Soil and groundwater below the Site are contaminated with two types of contamination: petroleum hydrocarbons and chlorinated hydrocarbons (chlorinated solvents).
- Subsurface soil samples were collected from soil borings B-1 through B-6 continuously using disposable polyethylene sample liners until groundwater was encountered. Soil boring B-7 was advanced directly to groundwater. No soil samples were collected from this boring since soil samples have already been collected from boring B-1, which was immediately adjacent to boring B-7. Petroleum hydrocarbons in the soil were detected in soil borings B-1 and B-5 located on the central portion of the Site, in the area of the removed 550-gallon USTs formerly storing No. 2 fuel oil and waste oil. Concentrations of BTEX totaling 17,900 ug/kg (0'-2' below grade) and 4,121 ug/kg (15'-17' below grade) were detected in soil borings B-1 and B-5, respectively. No evidence of petroleum contamination in the form of free product was observed. Petroleum hydrocarbons in groundwater were also found only in the area of the removed USTs. Concentrations of BTEX totaling 41.1 ug/l in boring B-5 and 19.3 ug/l in boring B-7 were detected in groundwater samples. The petroleum plume is limited and is moving very slowly in the northwestern direction, along the general direction of The data indicate an on-site source of petroleum groundwater flow. contamination, most likely the former leaking waste oil underground tank located

near soil boring B-5. As a result of natural bioattenuation, the petroleum hydrocarbons are biodegrading and concentrations in groundwater are decreasing with time.

Chlorinated hydrocarbons and solvents present at the (PCE), trichloroethene (TCE), dichloroethene tetrachloroethene dichloroethane (DCA) and their isomers. With the exception of soil boring B-1 located in the area of the historical dry well, when the concentration of total chlorinated solvents was 348,200 ug/kg (0'-2'), these compounds are either not detected in any of the soil borings, or detected far below their detection limits. However, groundwater sampling results indicated that PCE, TCE and DCE contamination was present throughout the Site and off-site with higher concentrations (160-195 ug/l) located along the northwestern (down-gradient) and southeastern (up-gradient) boundaries of the Site. Minimal concentrations or no contamination is present in the groundwater samples collected from the central portion of the Site, where the hydrocarbon plume is present.

The source of the chlorinated solvents in groundwater is unknown. However, the distribution pattern of the contaminants indicates a strong potential for an off-site upgradient source(s) impacting groundwater at the subject site from extended releases of chlorinated solvents into the soil and groundwater from off-site.

In the central portion of the Site, in the area of removed USTs, groundwater is most likely under anaerobic conditions. Under anaerobic conditions, the natural bioattenuation (reductive dechlorination process) typically leads to a reduction of PCE, TCE and DCE.

3.0 PLANNED SITE ACTIVITIES

Scheduled work will consist of the following activities:

- As part of the IRM, GCE will excavate contaminated soil in the area of the historical dry well. All excavated soil will be stockpiled and covered by 2 layers of 10-mil polyethylene sheeting in the area to be determined by the Site operator. GCE will be responsible for adherence to all applicable OSHA standards;
- Once all excavation is completed, GCE will collect composite pre-disposal soil samples and arrange for their analysis for variety of parameters in accordance with the disposal facility requirements which will include hazardous characterization. Upon receipt of the excavated soil laboratory results, GCE will review the results and submit the same to the licensed disposal facility. Upon acceptance by the disposal facility, GCE will assist the Site owner with coordination for proper soil transportation and off-site disposal at the Soil Safe, Inc., soil recycling facility located in Salem, New Jersey, which is licensed to receive contaminated non-hazardous waste;

- The drilling contractor will conduct soil borings and monitoring well installation. GCE will oversee all drilling activities at the Site. The drilling contractor and GCE shall be responsible for adherence to all applicable OSHA standards for the portion of the work that is performed by the each party;
- Once all drilling is completed, GCE will coordinate for proper soil cuttings and development water transportation and off-site disposal;
- Approximately two weeks after monitoring well installation, GCE will conduct a survey and groundwater level measurements and collecting groundwater samples.

4.0 KEY PROJECT PERSONNEL AND RESPONSIBILITIES

Project Manager Val Gatallin

Site Safety Officer Igor Goldstein

Corporate Director of Health and Safety Gregory Collins

The responsibilities of key project personnel are outlined below.

4.1 Project Manager

The Project Manager has the ultimate responsibility for the health and safety of GCE personnel at the Site. The Project Manager is responsible for:

- ensuring that project personnel review and understand the requirements of this HSP
- keeping the Corporate Director of Health and Safety informed of project developments
- keeping on-site personnel, including subcontractors, informed of the expected hazards and appropriate protective measures at the Site
- providing resources necessary for maintaining a safe and healthy work environment for GCE personnel

4.2 Corporate Director of Health and Safety

The Corporate Director of Health and Safety is responsible for the review, interpretation, and modification of this HSP. Modifications to this HSP that may result in less stringent precautions cannot be undertaken by the Project Manager or Site Safety Officer (SSO) without the approval of the Corporate Director of Health and Safety. In addition, he has the following responsibilities:

- advising the Project Manager and SSO on matters relating to health and safety on this project
- recommending appropriate safeguards and procedures
- modifying this HSP, when necessary
- approving changes in health and safety procedures employed at the Site

4.3 Site Safety Officer

The SSO is responsible for enforcing the requirements of this HSP once site work begins. The SSO has the authority to immediately correct situations where noncompliance with this HSP is noted and to immediately stop work in cases where an immediate danger to site workers or the environment is perceived. Responsibilities of the SSO also include:

- obtaining and distributing personal protective equipment (PPE) and air monitoring equipment necessary for this project
- limiting access at the Site to authorized personnel
- communicating unusual or unforeseen conditions at the Site to the Project Manager
- supervising and monitoring the safety performance of site personnel to evaluate the effectiveness of health and safety procedures and correct deficiencies
- conducting daily tailgate safety meetings before each day's activities begin
- conducting a site safety inspection prior to the commencement of each day's field activities

4.4 Contractor and Subcontractor Personnel

Contractor and subcontractor personnel are expected to comply with the minimum requirements specified in this HSP. Failure to do so may result in the removal of the contractor/subcontractor or any of the contractor's/subcontractor's workers from the Site. Contractor/subcontractors may employ health and safety procedures that afford them a greater measure of personal protection than those specified in this plan so long as they are do not pose additional hazards to themselves, the environment, or others working in the area.

5.0 HAZARD OF KNOWN OR EXPECTED CHEMICALS OF CONCERN

Previous investigations revealed the following main chemicals of concern that are present in the soil and groundwater:

Contaminant	TLV/IDLH (PPM)	Known Highest Concentration	
		Soil (ug/kg)	Groundwater (ug/l)
Tetrachloroethene	50/NA	180,000	21
Trichloroethene	50/NA	1,900	2
Cis-1,2- Dichloroethene	200/4,000	7,800	15
Vinyl chloride	5/NA	n/d	n/d

TLV= Threshold Limit Value, IDLH= Immediate Dangerous to Life and Health

Exposure pathways of concern for chemical compounds that may be present at the Site are inhalation of airborne contaminants, digestion and direct skin contact with contaminated materials. Wearing protective equipment and following decontamination procedures listed in Section 9 can minimize dermal contact. To minimize inhalation hazards, dust control measures will be implemented, where necessary, and action levels will be observed during scheduled activities. Wearing respirator and following decontamination procedures can minimize digestion hazards. Site-specific action levels are presented in Section 10. Chemical descriptions of chemicals of concern, including health effects and exposure limits, are located in Appendix A.

On-site worker exposure to airborne contaminants will be monitored during intrusive site activities. A calibrated photoionization detector (PID) will be used to monitor changes in exposure to volatile organic compounds (VOCs). Personnel will perform routine monitoring during site operations to evaluate concentrations of VOCs in employee breathing zones. If VOCs are detected above predetermined action levels specified in Section 10, the procedures found in Section 7 of this HSP will be followed.

In accordance with the Hazard Communication standard, material safety data sheets (MSDSs) will be maintained on site for chemical products used by GCE personnel at the Site. In addition, containers will be clearly labeled in English to indicate their contents and appropriate hazard warnings.

6.0 PHYSICAL HAZARDS

The following potential health and safety hazards may be encountered during scheduled activities at the Site:

- slips, trips, and falls
- heavy equipment
- heat stress
- noise
- excavations
- underground and overhead utilities
- container handling
- confined space entry
- fire/explosion

6.1 General Safe Work Practices

- Workers will thoroughly clean their hands, faces, and other potentially contaminated areas before smoking, eating, or leaving the Site.
- Respiratory devices may not be worn with beards or long sideburns, or under other conditions that prevent a proper seal.
- Accidents and/or injuries associated with work at the Site will be immediately reported to the SSO. If necessary, an incident report will be initiated by the SSO.
- Periodic safety briefings will be held to discuss current site conditions, field tasks being performed, planned modifications, and work concerns.
- Site conditions may include uneven, unstable, or slippery work surfaces. Substantial care and personal observation is required on the part of each employee to prevent injuries from slips, trips, and falls.
- Workers will maintain good housekeeping practices during field activities to maintain a safe working environment. The work site will be kept free of debris, waste, and trash.
- The "buddy system" will be used whenever appropriate.
- To prevent head injury, ANSI-approved hard hats will be worn at all times while the worker is in an area where overhead obstructions or falling objects may be encountered.
- To prevent eye injuries, workers must wear ANSI-approved safety glasses during field activities.

6.2 Heavy Equipment

Equipment, including drill rigs, or other heavy machinery, will be operated in compliance with the manufacturer's instructions, specifications, and limitations, as well as any applicable regulations. The operator is responsible for inspecting the equipment daily to verify that it is functioning properly and safely.

Operation of equipment at the Site for the activities outlined in Section 3 poses potential physical hazards. The following precautions should be observed whenever heavy equipment is in use:

- PPE, including steel-toed boots, safety glasses, and hard hats, must be worn.
- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of intent.
- Traffic safety vests are required for personnel working near mobile heavy equipment or near high traffic areas.
- Personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge.
- Nonessential personnel will be kept out of the work area.

6.3 Heat Stress

Adverse climate conditions, primarily heat, are important considerations in planning and conducting site operations. Heat-related illnesses range from heat fatigue to heat stroke, with heat stroke being the most serious condition. The effects of ambient temperature can cause physical discomfort, loss of efficiency, and personal injury, and can increase the probability of accidents. In particular, protective clothing that decreases the body's ventilation can be an important factor leading to heat-related illnesses.

To reduce the possibility of heat-related illness, workers should drink plenty of fluids and establish a work schedule that will provide sufficient rest periods for cooling down. Personnel shall maintain an adequate supply of non-caffeinated drinking fluids on site for personal hydration. Workers should be aware of signs and symptoms of heat-related illnesses, as well as first aid for these conditions. These are summarized in the table below.

Condition	Signs	Symptoms	Response
Heat Rash or Prickly Heat	Red rash on skin.	Intense itching and inflammation.	Increase fluid intake and observe affected worker.
Heat Cramps	Heavy sweating, lack of muscle coordinatio n.	Muscle spasms, and pain in hands, feet, or abdomen.	Increase fluid uptake and rest periods. Closely observe affected worker for more serious symptoms.
Heat Exhaustion	Heavy sweating; pale, cool, moist skin; lack of coordinatio n; fainting.	Weakness, headache, dizziness, nausea.	Remove worker to a cool, shady area. Administer fluids and allow worker to rest until fully recovered. Increase rest periods and closely observe worker for additional signs of heat exhaustion. If symptoms of heat exhaustion recur, treat as above and release worker from the day's activities after he/she has fully recovered.
Heat Stroke	Red, hot, dry skin; disorientati on; unconsciou sness	Lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse.	Immediately contact emergency medical services by dialing 911. Remove the victim to a cool, shady location and observe for signs of shock. Attempt to comfort and cool the victim by administering small amounts of cool water (if conscious), loosening clothing, and placing cool compresses at locations where major arteries occur close to the body's surface (neck, underarms, and groin areas). Carefully follow instructions given by emergency medical services until help arrives.

6.4 Noise

Noise may result primarily from the operation of drill rigs and mechanical equipment. The use of heavy equipment may generate noise above the OSHA permissible exposure limit for noise of 90 dBA for an 8-hour time-weighted average. Workers will wear appropriate hearing protection when operating or

working near heavy equipment. If loud noise is present or normal conversation becomes difficult, hearing protection in the form of ear plugs, or equivalent, will be required.

6.5 Excavations

Gregory Collins of GCE will oversee soil excavation activities.

The atmosphere will be tested in excavations greater than 4 feet in depth where oxygen deficiency or toxic or flammable gases are likely to be present before employees are permitted to enter and begin work. The atmosphere should be ventilated and re-tested until flammable gas concentrations less than 20 percent of the lower explosive limit (LEL) are obtained. Worker entry will not be allowed if the oxygen concentration is less than 19.5 percent.

Workers will not enter excavations greater than 4 feet in depth without appropriate protective systems such as benching, sloping, or shoring. Side slopes will not be steeper than 1:1 without a written report from a qualified civil or geotechnical engineer. Excavations will be constructed in accordance with the OSHA Excavation Safety Standard, 29 CFR 1926, Subpart P.

(competent person) wited in previousiers

Gregory Collins will inspect excavations daily. If there is evidence that a cave-in or slide is possible, work will cease until the necessary safeguards have been taken. Excavated material will be placed far enough from the edge of the excavation (a minimum of 2 feet) so that it does not fall back into the opening. At the end of each day's activities, open excavations will be clearly marked and secured to prevent nearby workers or unauthorized personnel from entering them. Remote sampling techniques will be the preferred method of sample collection in excavations.

6.6 Underground and Overhead Utilities

The locations of underground pipes, electrical conductors, fuel lines, and water and sewer lines must be determined before soil intrusive work is performed. Lines must be de-energized, blocked out, or blinded where feasible. Equipment with articulated upright booms or masts shall not be permitted to pass within 20 feet of an overhead utility line while the boom is in the upright position.

6.7 Materials and Equipment Handling Procedures

The movement and handling of equipment and materials on the Site pose a risk to workers in the form of muscle strains and minor injuries. These injuries can be avoided by using safe handling practices, proper lifting techniques, and proper personal safety equipment such as steel-toed boots and sturdy work gloves. Where practical, mechanical devices will be utilized to assist in the movement of equipment and materials. Workers will not attempt to move heavy objects by

themselves without using appropriate mechanical aids such as drum dollies or hydraulic lift gates.

6.8 Fire/Explosion

Site workers should have an increased awareness concerning fire and explosion hazards whenever working with or near flammable materials, especially when performing any activity that may generate sparks, flame, or other source of ignition. Intrinsically safe equipment is required when working in or near environments with the potential for an explosive atmosphere. The SSO will verify facility requirements for a "hot work" permit before activities that may serve as a source of ignition are conducted.

Flammable materials will be kept away from sources of ignition. In the event of fire, work will cease, the area will be evacuated, and the local fire response team will be notified immediately. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. A fully charged ABC dry chemical fire extinguisher will be readily available for use during all scheduled activities at the Site.

7.0 PERSONAL PROTECTIVE EQUIPMENT

The purpose of PPE is to protect employees from hazards and potential hazards they are likely to encounter during site activities. The amount and type of PPE used will be based on the nature of the hazard encountered or anticipated. Respiratory protection will be utilized when an airborne hazard has been identified using real-time air monitoring devices, or as a precautionary measure in areas designated by the Corporate Director of Health and Safety or SSO.

Dermal protection, primarily in the form of chemical-resistant gloves and coveralls, will be worn whenever contact with chemically affected materials (e.g., soil, groundwater, sludge) is anticipated, without regard to the level of respiratory protection required.

GCE personnel will be provided with appropriate personal safety equipment and protective clothing. The SSO is to inform each worker about necessary protection and must provide proper training in the use of the safety equipment. The required PPE to be worn is described below.

7.1 Conditions Requiring Level C Protection

In general, site activities will commence in Level C PPE unless otherwise specified, or if the SSO determines on site that a higher level of PPE is required. Air monitoring will be routinely conducted using real-time air monitoring devices to determine if upgrading to Level B PPE is necessary. Level C PPE will be

permitted as long as air monitoring data indicate that airborne concentrations of chemicals of concern are maintained below the site-specific action levels defined in Section 10.

It is important to note that dermal protection is required whenever contact with chemically affected soils or groundwater is anticipated. The following equipment is specified as the minimum PPE required to conduct activities at the Site:

- NIOSH/MSHA-approved half-face air-purifying respirator (APR) equipped with filter cartridges as specified in Section 10.0;
- chemical-resistant clothing (e.g., Tyvek, polycoated Tyvek, or Saranex coveralls) when contact with chemically affected soils or groundwater is anticipated;
- outer nitrile gloves and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event);
- safety shoes/boots with protective overboots or knee-high PVC polyblend boots when direct contact with chemically affected soils is anticipated;
- ANSI-approved safety glasses
- ANSI-approved hard hat

If air monitoring indicates that the site-specific action levels defined in Section 10 are exceeded, workers in the affected area(s) will upgrade to NIOSH/MSHA-approved full-face APRs in lieu of half-face APRs and safety glasses.

If air monitoring indicates that the site-specific action levels defined in Section 10 are exceeded, activities must cease, and personnel must evacuate the Exclusion Zone (see Section 9). The Project Manager and Corporate Director of Health and Safety will be contacted immediately.

8.0 SAFETY PROCEDURES

Procedures must be followed to maintain site control so that persons who may be unaware of site conditions are not exposed to hazards. The work area will be barricaded by tape, warning signs, or other appropriate means. Pertinent equipment or machinery will be secured and stored safely.

Access inside the specified work area will be limited to authorized personnel. Only GCE employees and designated contractor or subcontractors personnel under GCE's control,

as well as designated employees of the client, will be admitted to the work site. Only those workers possessing evidence of the required current 40-hour OSHA health and safety training (or current 8-hour refresher) and physician's authorization to conduct hazardous waste activities will be permitted in the work area designated as the Exclusion Zone. The SSO will be responsible for requiring that workers wear proper personal protective clothing. Personnel entering the work area will sign the signature page of this HSP, indicating they have read and accepted the health and safety practices outlined in this plan.

Real-time air monitoring devices will be used to analyze for airborne contaminant concentrations every 30 minutes in the workers' breathing zones while workers are in the Exclusion Zone. If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. The equipment will be calibrated daily, and the results will be recorded on GCE's Air Monitoring form or project log book. The results of air monitoring will be recorded on a GCE Air Monitoring Form or project log book and will be retained in the project files following completion of field activities. A copy of the Air Monitoring Form is located in Appendix B.

A daily morning briefing to cover safety procedures and contingency plans in the event of an emergency is to be included with a discussion of the day's activities. These daily meetings will be recorded on GCE Daily Tailgate Safety Meeting Forms. A debriefing to cover the activities is to be held upon completion of the work. A copy of the Daily Tailgate Safety Meeting Form is included in Appendix B.

The SSO will conduct a safety inspection of the work site before each day's activities begin to verify compliance with the requirements of the HSP. Results of the first day's inspection will be documented on a GCE Site Safety Checklist. A copy of the checklist is included in Appendix B.

Minimum emergency equipment maintained on site will include a fully charged 20-pound ABC dry chemical fire extinguisher, an adequately stocked first aid kit, and an emergency eyewash station.

Personnel entering the designated Exclusion Zone should exit at the same location. There must be an alternate exit established for emergency situations. In all instances, worker safety will take precedence over decontamination procedures. If decontamination of personnel is necessary, exiting the Site will include the decontamination procedures described below.

9.0 WORK ZONES AND DECONTAMINATION PROCEDURES

In some instances it may be necessary to define established work zones: an Exclusion Zone, a Contamination Reduction Zone, and a Support Zone. Work zones may be established based on the extent of anticipated contamination, projected work activities, and the presence or absence of non-project personnel. The physical dimensions and

applicability of work zones will be determined for each area based on the nature of job activity and hazards present. Within these zones, prescribed operations will occur using appropriate PPE. Movement between zones will be controlled at checkpoints.

Considerable judgment is needed to determine a safe working area for each zone, balanced against practical work considerations. Physical and topographical barriers may constrain ideal locations. Field measurements combined with climatic conditions may, in part, determine the control zone distances. Even when work is performed in an area that does not require the use of chemical-resistant clothing, work zone procedures may still be necessary to limit the movement of personnel and retain adequate site control.

Despite protective procedures, personnel may come in contact with potentially hazardous compounds while performing work tasks. If so, decontamination needs to take place using an Alconox or TSP wash, followed by a rinse with clean water. Standard decontamination procedures for level C are as follows:

- equipment drop;
- boot cover and outer glove wash and rinse;
- boot cover and outer glove removal;
- suit wash and rinse;
- suit removal;
- safety boot wash and rinse;
- inner glove wash and rinse;
- respirator removal;
- inner glove removal;
- field wash of hands and face

Workers should employ only applicable steps in accordance with level of PPE worn and extent of contamination present. The SSO shall maintain adequate quantities of clean water to be used for personal decontamination (i.e., field wash of hands and face) whenever a suitable washing facility is not located in the immediate vicinity of the work area. Disposable items will be disposed of in an appropriate container. Wash and rinse water generated from decontamination activities will be handled and disposed of properly. Nondisposable items may need to be sanitized before reuse. Each Site worker is responsible for the maintenance, decontamination, and sanitizing of their own PPE.

Used equipment may be decontaminated as follows:

- An Alconox or TSP and water solution will be used to wash the equipment.
- The equipment will then be rinsed with clean water.

Each person must follow these procedures to reduce the potential for transferring chemically affected materials off site.

10.0 ACTION LEVELS

The following action levels were developed for exposure monitoring with real-time air monitoring instruments. The air monitoring data will determine required PPE levels at the Site during scheduled intrusive activities. The action levels are based on sustained readings indicated by a Thermo Environmental Instruments Inc. Model 580B portable Photo-Ionization Detector (PID) with a 10.6 e.V. lamp, calibrated for isobutylene standards. Air monitoring will be performed and recorded at up to 30-minute intervals. If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. If during this time, sustained measurements are observed, the following actions will be instituted, and the Project Manager and Director of Health and Safety will be notified. For purposes of this HSP, sustained readings are defined as the average airborne concentration maintained for a period of 5 minutes.

Activity	Action Level	Level of Respiratory Protection
Soil Drilling	6 to 50 ppm	Level C: Half-face air-purifying respirator fitted with organic vapor filter cartridges.
	51 to 100 ppm	Level C: Full-face air-purifying respirator fitted with organic vapor filter cartridges.
	> 100 ppm	Cease operations and evacuate work area. Contact Corporate Director of Health and Safety and Project Manager immediately.

11.0 CONTINGENCY PROCEDURES

In the event of an emergency, site personnel will signal distress with three blasts of a horn (a vehicle horn will be sufficient). Communication signals, such as hand signals, must be established where communication equipment is not feasible or in areas of loud noise.

It is the SSO's duty to evaluate the seriousness of the situation and to notify appropriate authorities. Section 12 of this plan contains emergency telephone numbers as well as

directions to the hospital. Nearby telephone access must be identified and available to communicate with local authorities. If a nearby telephone is not available, a cellular telephone will be maintained on site during work activities.

Personnel should dial 911 in the event of an emergency.

11.1 Injury/Illness

If an exposure or injury occurs, work will be temporarily halted until an assessment can be made of whether it is safe to continue work. The SSO, in consultation with the Corporate Director of Health and Safety, will make the decision regarding the safety of continuing work. The SSO will conduct an investigation to determine the cause of the incident and steps to be taken to prevent recurrence.

In the event of an injury, the extent and nature of the victim's injuries will be assessed and first aid will be rendered as appropriate. If necessary, the individual may be transported to the nearby medical center. The mode of transportation and the eventual destination will be based on the nature and extent of the injury. A hospital route map is presented in Appendix C. In the event of a life-threatening emergency, the injured person will be given immediate first aid and emergency medical services will be contacted by dialing 911. The individual rendering first aid will follow directions given by emergency medical personnel via telephone. A person certified in first aid/CPR techniques will be present during field activities.

11.2 Fire

In the event of fire, personnel should contact the local fire department immediately by dialing 911. When representatives of the fire department arrive, the SSO, or designated representative, will advise the commanding officer of the location, nature, and identification of hazardous materials on site. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so.

11.3 Underground Utilities

In the event that an underground conduit is damaged during drilling, mechanized equipment will immediately be shut off until the nature of the piping can be determined. Depending on the nature of the broken conduit (e.g., natural gas, water, or electricity), the appropriate local utility will be contacted.

11.4 Evacuation

The SSO will designate evacuation routes and refuge areas to be used in the event of an emergency. Site personnel will stay upwind from vapors or smoke and up-

gradient from spills. If workers are in an Exclusion or Contamination Reduction Zone at the start of an emergency, they should exit through the established decontamination areas whenever possible. If evacuation cannot be done through an established decontamination area, site personnel will go to the nearest safe location and remove contaminated clothing there or, if possible, leave it near the Exclusion Zone. Personnel will assemble at the predetermined refuge following evacuation and decontamination. The SSO, or designated representative, will count and identify Site personnel to verify that all have been evacuated safely.

12.0 EMERGENCY CONTACTS

911 Ambulance: 911 Police: 911 Fire Department: 911 Hospital: (800) 424-8802 National Response Center: (800) 876-4766 Poison Control Center: (301) 496-1131 TOXLINE: (800) 424-9300 CHEMTREC: (914) 674-4346, ext. 105 G. C. Environmental, Inc. Director of Health and Safety: (914) 674-4346 G. C. Environmental, Inc., Ardsley, NY White Plains Hospital Medical Center: 41 East Post Road (914)681-0600 White Plains, NY 10601 **DIRECTIONS TO HOSPITAL:**

Take Irving Place to the east for approximately 0.3 miles and turn right to S. Lexington for another 0.2 miles to the White Plains Hospital Medical Center. A hospital location map is presented in Appendix C.

13.0 G. C. ENVIRONMENTAL, INC. APPROVALS

This HSP has been prepared for the following project:

SITE CHARACTERIZAION 101 WESTMORELAND AVENUE, WHITE PLAINS, NEW YORK 10606

G. C. Environmental, Inc. Project Number: 05-003-00

This HSP has been reviewed and approved by the following G. C. Environmental, Inc. personnel:

5/11/07

Val Gatallin

Project Manager

Igor Goldstein

Site Safety Officer

Date

5/11/07

Date

Gregory Collins

Corporate Director of Health and Safety

Gran Colley ISE

Date

5/11/07

SIGNATURE PAGE

The following signatures indicate that this Health and Safety Plan has been read and accepted by GCE personnel as well as subcontractors and their personnel.

NAME	COMPANY	SIGNATURE	DATE

Important notice to subcontractor(s):

This Health and Safety Plan has been prepared solely for the use of GCE personnel. It is supplied to you for informational purposes only and may not be relied upon for protection of your employees. The Subcontractor is responsible for providing, at its cost, all personal protective clothing and equipment required for its employees to perform their work in a safe manner and in compliance with all applicable state and federal OSHA regulations. Subcontractor is responsible for ensuring that such equipment is in good condition and is properly inspected and maintained. Subcontractor must, at a minimum, use the equipment and follow the procedures described in this HSP. Failure to do so may result in immediate termination of Subcontractor's services. This does not relieve Subcontractor of the responsibility to provide equipment and institute procedures affording a greater degree of protection than those specified in this HSP should Subcontractor determine such measures are necessary to protect the health and welfare of its employees, second-tier subcontractors or others under its control or direction.

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APPENDIX A

CHEMICAL DESCRIPTIONS

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1. TETRACHLOROETHENE

General Description - Tetrachloroethene, also called perchloroethene, is a clear colorless volatile liquid having an ether-like odor. It is used as a dry cleaning solvent, a vapor degreasing solvent, drying agent for metals and for the manufacture of other chemicals. It is a non-combustible, insoluble in water and its vapors are heavier than air.

Health Hazards – VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause difficult breathing, or loss of consciousness. LIQUID: Irritating to skin and eyes. Harmful if swallowed.

Fire/Explosion Hazards – Not flammable. Poisonous gases are produced when heated. Toxic, irritating gases may be generated in fires.

Fire Fighting – Extinguish fire using agent suitable for type of surrounding fire (material itself does not burn or burns with difficulty).

First Aid – If this chemical comes in contact with eyes, immediately wash the eyes with large amount of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing is stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately.

2. TRICHLOROETHENE

General Description - Trichloroethene, is a clear colorless volatile liquid having a chloroform-like odor. It is used as a solvent, fumigant, in the manufacture of other chemicals, as an agricultural fumigant, and for many other uses. It is heavier than water and is slightly soluble in water. It is a non-combustible.

Health Hazards – VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause nausea, vomiting, difficult breathing, or loss of consciousness. LIQUID: Irritating to skin and eyes. If swallowed, will cause nausea, vomiting, difficult breathing, or loss of consciousness.

Fire/Explosion Hazards – Combustible. Poisonous gases may be produced in fire. Produces irritating and toxic products when heated to decomposition temperatures.

Fire Fighting – Extinguish fire using agent suitable for type of surrounding fire (material itself does not burn or burns with difficulty).

First Aid – If this chemical comes in contact with eyes, immediately wash the eyes with large amount of water, occasionally lifting the lower and upper lids. Get medical attention

immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing is stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately.

3. CIS-1,2-DICHLOROETHENE

General Description – Liquid; colorless; sweet pleasant odor. Sinks in water. Flammable, irritating vapor is produced.

Health Hazards – VAPOR: If inhaled, will cause dizziness, nausea, vomiting, or difficult breathing. LIQUID: Harmful if swallowed.

Fire/Explosion Hazards — Flammable. Poisonous gases may be produced in fire. Containers may explode in fire. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Phosgene and hydrogen chloride fumes may form in fires. Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.

Fire Fighting – Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.

First Aid – If this chemical comes in contact with eyes, immediately wash the eyes with large amount of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing is stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately.

4. VINYL CHLORIDE

General Description – Vinyl chloride is a colorless gas with a sweet odor. It is used to make plastics and adhesives, and to make other chemicals. It is shipped as a liquefied gas under its vapor pressure. Contact with the liquid can cause frostbite. It is easily ignited. Its vapors are heavier than air and a flame can flash back to the source of leak very easily. This leak may be either a liquid or vapor leak. It can asphyxiate by the displacement of air. Under fire conditions the cylinders or tank cars may violently rupture and rocket. Prolonged exposure of the cylinders or tank cars to heat or fire may cause the material to polymerize with possible container rupture.

This material is a cancer suspect agent on long term exposure to low concentrations. However, this effect has not been demonstrated for single exposures to high concentrations of the material.

Health Hazards – VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause dizziness, or difficult breathing.

Fire/Explosion Hazards – Flammable. Poisonous gases is produced in fire. Flashback along vapor trail may occur. May explode if ignited in an enclosed area. Forms highly toxic combustion products such as hydrogen chloride, phosgene, and carbon monoxide.

Fire Fighting – Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.

First Aid —If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

5. FREE PRODUCT

General Description – Free product discovered in the central portion of the Site, is represented by Mop Oil. Mop Oil is a brown Light Non-Aqueous Phase Liquid (LNAPL) with specific wintergreen fragrance. It is lighter than water and floats on its surface.

Health Hazards – ACUTE: Inhalation- Respiratory irritation, central nervous system depression. Skin – irritation. Eye – irritation. Ingestion – aspiration hazard, central nervous system depression, convulsion, loss of consciousness, pneumonitis. CHRONIC: Skin - dermatitis.

Fire/Explosion Hazards – Flammable. May form combustible mixtures with air when heated.

Fire Fighting – Water stream may spread fire. Use water spray only to cool containers exposed to fire. If spill or leak has not ignited, use water spray to disperse vapors.

First Aid – Eyes – immediately flush with water for 15 minutes, occasionally lifting upper/lower lids. Seek prompt medical attention. Ingestion – call a physical immediately. Only induce vomiting at the instruction of a physician. Skin – remove contaminated clothing. Wash skin with soap and water. Get prompt medical attention. Inhale – remove to fresh air. If breathing has stopped, perform artificial respiration.

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APPENDIX B

G.C. Environmental, Inc. Form

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AIR MONITORING FORM

page of

Date	GCE Project No.		
Project Name	Type of Activities		
Type of PID/FID	Seria	il No.	
Initial Calibra	tion ReadingEnd-	of-Use Calibration Chec	ck
Calibration Sta	andard/Concentration		
Mini-RAM Serial No.		Zeroed in	Z-Bag?□ Yes □ No
Time	Activity/Location	PID/FID (ppm)	Mini-RAM (mg/m³)
Name (print)	Ci au	ature	

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SITE SAFETY CHECKLIST

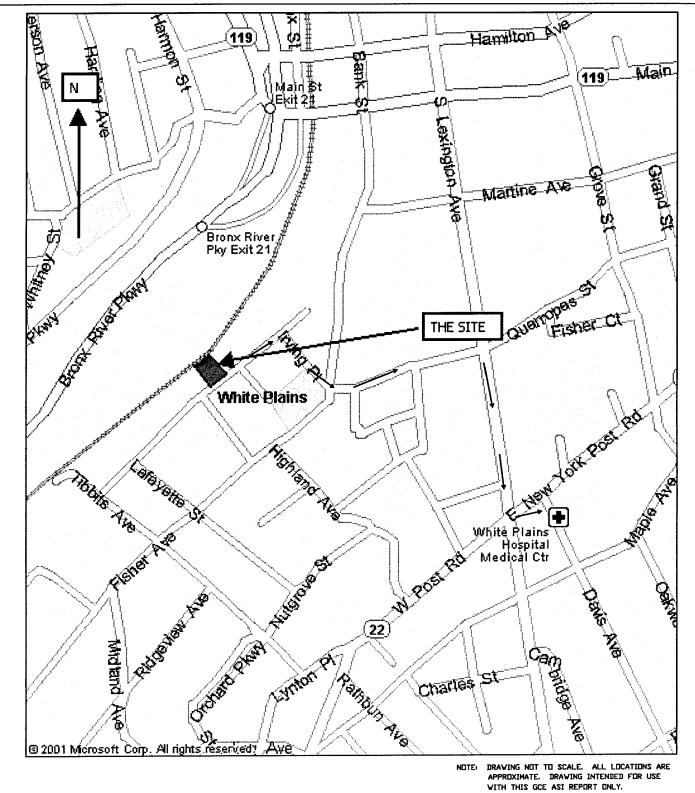
Project Name	GCE Project No.			
Project Activities				
		YES	NO	N/A
Written Health and Safety Plan	(HSP) is on site			
Addenda to the HSP are docume	ented on site			
Information in the HSP matches	conditions and activities at the site			
HSP has been read and signed b	by all site personnel, including visitors			
Daily tailgate safety meetings ha	ave been held and documented			
Site personnel have appropriate	training and medical clearance			
	d documented as described in the HSP			
Air monitoring equipment has b	een calibrated daily			
Site zones are set up and observ	ed where appropriate			
Access to the work area limited	to authorized personnel			
Decontamination procedures ar	e followed and match the requirements of the HSP			
	ding hand/face wash) are set up and used			
Personal protective equipment i				
Hearing protection used where				
Respirators are properly cleane				
Trenches and excavations are in state, and local safety requir	a compliance with federal,			
	2 feet from the edge of an excavation			
	ent is on site as described in the HSP			
Drinking water is readily availa				
Accessible phone is readily avai				
Proper drum and material hand				
Drums and waste containers are	e labeled appropriately			
	nd protected from water and vehicle traffic			
	s (GFCI) are used with electrical equipment			
Tools and equipment are in good				
Lighting is adequate				
Compressed gas cylinders are u	pright and secured			
Notes (All "no" answers must b safety observations here)	e addressed and corrected immediately. Note addit	ional he	ealth and	d
Conducted By:	Signature: D	ate:		

DAILY TAILGATE SAFETY MEETING FORM

Date	Time _	GCE Proje	ect No.	
	TY TOPICS DIS			
	Protective Clothin	ng/Equipment		
ATTE	ENDEES	Name (please print)		Signature

APPENDIX C

HOSPITAL ROUTE MAP





C. ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS

410 SAW MILL RIVER ROAD ARDSLEY, NEW YORK 10502

Tel: (914) 674-4346 Fax: (914) 674-4348

PRELIMINARY SITE **ASSESSMENT**

101 WESTMORELAND AVENUE WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 1

HOSPITAL **LOCATION** MAP



G. C. ENVIRONMENTAL, INC.

ENVIRONMENTAL CONSULTANTS

QUALIFICATION AND EXPERIENCE

FOR

ENVIRONMENTAL SITE ASSESSMENT

AND

SITE REMEDIATION

May 22, 2006

G. C. ENVIRONMENTAL, INC. 410 SAW MILL RIVER ROAD ARDSLEY, NY 10502 TEL: (914) 674-4346, FAX:(914) 674-4348

TABLE OF CONTENTS

SECTION 1	GENERAL COMPANY INFORMATION		
	1.1	COMPANY PROFILE	
	1.2	PROFILE OF SERVICES	
	1.3	INSURANCE CERTIFICATES	
	1.4	FINANCIAL REFERENCES	
•	1.5	CLIENT REFERENCES	
SECTION 2	ENVIRONMENTAL SITE ASSESSMENT		
	2.1	CAPABILITIES FOR PHASE I ENVIRONMENTAL SITE ASSESSMENT	
	2.2	CAPABILITIES FOR PHASE II INVESTIGATION	
SECTION 3	SITE REMEDIATION		
	3.1	CAPABILITIES FOR REMEDIAL INVESTIGATION AND FEASIBILITY STUDY	
	3.2	CAPABILITIES FOR REMEDIAL DESIGN AND IMPLEMENTATION	
SECTION 4	RES	RESUMES AND CERTIFICATES FOR KEY PERSONNEL	

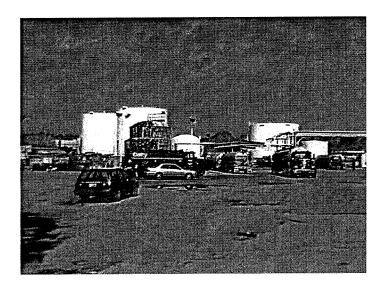
1.1 COMPANY PROFILE

Founded in 1989, G. C. Environmental, Inc. is a fast growing environmental consulting and engineering firm providing services to clients throughout the northeast.

G. C. Environmental provides comprehensive consulting and engineering services in the following areas: Phase I Environmental Site Assessments for residential, commercial and industrial properties, Phase II Investigations, Remedial Investigations, Feasibility Studies, Remedial Design, Petroleum Storage Tank (underground and aboveground) Management, Assessment and Design, Environmental Compliance and Pollution Prevention.

G. C. Environmental's staff are highly trained and experienced, with advanced degrees in science and engineering and the latest training required to meet today's fast evolving environment.

At G. C. Environmental, we continually grow and develop to meet the requirements of both, our clients and the stringent regulatory environment. We provide diligent, cost-effective solutions to meet our clients needs.



May 22, 2006

G. C. ENVIRONMENTAL, INC. 410 SAW MILL RIVER ROAD ARDSLEY, NY 10502

TEL: (914) 674-4346, FAX:(914) 674-4348

1.2 PROFILE OF SERVICES

ENVIRONMENTAL
SITE ASSESSMENT

Phase I Environmental Site Assessment

Phase II Investigation

Geoprobe Drilling

Geophysical Investigation

Asbestos Survey

Lead-based Paint Survey

Potable Water Testing

Radon Testing

Risk Assessment

NEPA Land Use Screening

SITE REMEDIATION

Remedial Investigation

Feasibility Study

Pilot Testing

Remedial Design

Remedial Implementation

Remedial Oversight

Operation and Maintenance

Performance Monitoring

Hazardous Waste Management

Disposal Evaluation

Dredging and Solidification Studies

PETROLEUM STORAGE

UST/AST Compliance

TANK MANAGEMENT

Tank Closure

Closure Assessment

Complete UST/AST System Design

Spill Prevention

Tank Testing

Tank Installation, Upgrade and Repair

1.3 INSURANCE CERTIFICATES

5.1 INSURANCE COVERAGE

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ACORD 25 (2001/08) © ACORD CORPORATION 1988	L	VDC 4	(0004/00)			© ACORD COF	RPORATION 1988				

1.4 FINANCIAL REFERENCES

Bank of America 96A Allen Boulevard East Farmingdale, NY 11735 Contact: Catherine Zagata

Tel: (631) 293-4551

1.5 CLIENT REFERENCES

Mary Clare Maxwell JPMorgan Chase Mail Code IL1-0956 - One Bank One Plaza Chicago, NY 60670 Tel: (312) 325-5082

Mr. Patrick Lynch, P.E. O'Dea Lynch Abbattista 50 Broadway Hawthorne, NY 10532 Tel: (914) 747-2800

Michael Bonhomme, Real Estate Manager Verizon Wireless 4 Centerock Road West Nyack, NY 10994 Tel: (914) 714-7236

Felix Sanchez Crown Atlantic 1200 MacArthur Boulevard, Ste. 200 Mahwah, NJ Tel: (201) 236-9228

Lou Evans, Esq. Nixon Peabody LLP 990 Stewart Avenue, Suite 350 Garden City, NY 11530 Tel: (516) 832-7500 Maureen Hranek T-Mobile 4 Sylvan Way - 2nd Floor Parsippany, NJ 07054 Tel: (973) 397-4830

Ms. Leslie Snyder, Esq. Snyder & Snyder 94 White Plains Road Tarrytown, NY 10591 Tel: (914) 333-0700

Mr. Alan Z. Richards, Esq. 100 Ring Road West Garden City, NY 11530 Tel: (516) 741-0515

Mitch Austin T-Mobile 4 Sylvan Way – 2nd Floor Parisppany, NJ 07054 Tel: (973) 397-4874

Jason Barnett Reckson Associates Realty Corp. 225 Broad Hollow Road, Ste. 212W Melville, NY 11747 Tel: (631) 622-6616

SECTION 2 ENVIRONMENTAL SITE ASSESSMENT

G. C. Environmental, Inc. provides professional environmental site assessment consulting services to both the public and private sectors. Over the last eight years, G. C. Environmental's staff has conducted various types of environmental site assessment "activities" at more than 1,000 sites. These site assessment activities have provided information that is used as a decision-making tool in real estate transactions, to evaluate release compliance issues associated with underground storage tanks (UST), in petroleum products/hazardous materials release investigations, and in subsurface contamination investigations at solid waste landfills. G. C. Environmental has assembled a team of highly qualified environmental professionals comprised of geologists, hydrogeologists, geochemists, environmental scientists, environmental engineers, chemists, risk assessment specialists, and industrial hygienists who specialize in the various facets of the environmental site assessments process.

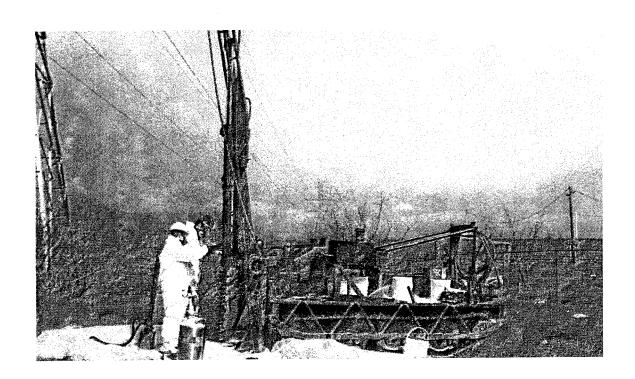
Specific types of investigations conducted by G. C. Environmental when evaluating contamination conditions at a site include:

2.1 CAPABILITIES FOR PHASE I ENVIRONMENTAL SITE ASSESSMENT

Phase I Environmental Site Assessments include initial site inspection activities, review of site and area historical operations, and review of regulatory files to identify potential problem areas associated with a site.

2.2 CAPABILITIES FOR PHASE II INVESTIGATION

Phase II Investigations comprise subsurface sampling programs in target areas identified during the Phase I investigation to confirm the presence of suspected contamination. Field investigation techniques used can include a combination of soil gas surveys, geophysical methods, portable drive soil and groundwater investigative techniques or conventional soil boring/monitoring well programs.



SECTION 3 SITE REMEDIATION

G. C. Environmental, Inc. provides comprehensive soil and groundwater remedial services to a wide variety of clients. G. C. Environmental, Inc. has successfully closed numerous sites within a tight time frame by streamlining and overcoming bureaucratic inefficiencies. Site closures were accomplished rapidly and cost-effectively with minimal interruption with continuous normal site operations. Site remediation activities can vary from plume delineation to complete site cleanup. While in many cases plume delineation and monitoring are sufficient for site closure, some sites require remedial investigation, pilot testing and remedial implementation. Whichever is the case, G. C. Environmental, Inc. always weighs the actual potential risk to public health and the environment against cleanup cost. Often, physical site controls prove to be a cost-effective, yet acceptable means of corrective action. Site remediation is often associated with petroleum products releases hazardous materials releases and subsurface contamination at solid waste landfills. Our site remediation team of highly qualified environmental professionals comprised of geologists, hydrogeologists, geochemists, environmental scientists, environmental engineers, electrical engineers, mechanical engineers, chemists, risk assessment specialists, industrial hygienists, and construction managers who specialize in the various facets of site remediation.

Site remediation activities can be divided into two major categories:

3.1 CAPABILITIES FOR REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

Remedial investigations focus on characterizing the source, release mechanism, nature and extent of affected areas and media (soils, groundwater, surface water, and air); evaluating fate and risk to potential receptors.

Feasibility studies involve the evaluation of treatment options for short- and long-term effectiveness, cost, implementability, and regulatory and community acceptance. Once clients understand their options, they can choose the solution that best fits their needs.

3.2 CAPABILITIES FOR REMEDIAL DESIGN AND IMPLEMENTATION

Once the remedial investigation and feasibility study are completed, a bench scale or pilot testing can be conducted to collect data required for design and sizing of the remediation system. The most commonly used systems include activated carbon treatment, air stripping, air spurging, soil vapor extraction and bioremediation. As with all phases of the corrective action, we design cost-effective systems which require minimal maintenance while maintaining maximum efficiency. Once the design is completed, we provide either turnkey implementation or project procurement and management.



QUALIFICATIONS OSHA 40-Hour Hazardous Waste Site Worker (OSHA)

OSHA 8-Hour Hazardous Waste Site Supervisor (OSHA)

4-Hour General Hazard Awareness Certification Program (OSHA; DOT)

4-Hour Basic Safety Training Certification Program (OSHA; DOT)

Excavation and Trenching Standard, and Soils Evaluation and Identification

(OSHA)

Lead Inspector (EPA; DOT)

EDUCATION

B.S., Real Estate and Finance, American University, Washington, D. C., 1988

PROFESSIONAL AFFILIATIONS

National Association of Power Engineers

Mr. Collins has twenty years of experience in environmental engineering and consulting. His experience includes management of environmental services including subsurface investigations, site assessments, soil and groundwater remedial investigation and design, and petroleum storage tank management, compliance, closure and design, fuel oil and natural gas boiler maintenance, repair and replacement. Mr. Collins begun his professional career as a member of fuel oil storage tank removal crew and as a back hoe operator. In 1989, after completing his studies, he founded his own company G. C. Environmental, Inc., which has since been providing high-quality, cost-effective and timely environmental management services to business, industries and municipalities. The services vary from fuel oil storage tank management, to waste management and transportation, to environmental consulting and engineering. Mr. Collins has successfully coordinated the efforts of the company's staff members to ensure that all project objectives and deadlines are met. He has managed and prepared proposals, protocols, specifications, and reports for numerous projects in the areas of Phase I and II Environmental Site Assessment (ESA); remedial investigation/feasibility study for soil and groundwater remediation; site assessment, management, closure, compliance and upgrading and new system design for petroleum storage tank sites. His experience also includes oversight of oil and hazardous material spill cleanups, and site remediation.

REPRESENTATIVE PROJECT EXPERIENCE

BMW, Inwood, NY Managed all phases of a \$180,000 project which consisted of Phase I and II ESAs, soil and groundwater remediation, petroleum contaminated waste transport and disposal, and new dry well installation.

Numerous MACY's properties in Suffolk and Nassau Counties, and Staten Island, NY Managed fuel oil storage tank closure, assessment and replacement, and petroleum contaminated soil and groundwater investigation and remediation.

Alhambra Condominium, New York, NY Managed replacement of three fuel oil aboveground storage tanks of 230,000 gallons of total capacity and associated with these tanks petroleum contaminated soil remediation.

Hempstead Bus Terminal, Town of Hempstead, NY Managed removal of a 10,000-gallon fuel oil underground storage tank.

Various residential properties, New York, and Nassau and Suffolk Counties, NY Managed removal, repair and installation of over three housand fuel oil storage tanks and associated petroleum contaminated soil and groundwater remediation.

Various commercial and industrial properties, New York, and Nassau and Suffolk Counties, NY Managed and provided report review for over thirty Phase I and II ESA and soil and groundwater remediation projects.

SEMINARS & COURSES

Train-The-Trainer Course in Instructional Techniques for Hazardous Waste Trainers, New Environment, Inc., 1995
Environmental Investigator Course, NYU, New York, 1993
Tank Installer Training Course, NYS DEC, 1993
How To Install Underground Fuel Storage Tanks and Piping Course, Petcon, Inc., 1993
Contractor's Guide to UST Closure Course, Petcon, Inc., 1993
Advanced Course in Business, UCLA, California, 1990
Ezy-Check Leak Detector Operation Training Program, Horner Creative Products, Inc., 1991
Dualoy 3000/L Fiberglass Pipe Training Program, Ameron Corp., 1990

QUALIFICATIONS Professional Geologist, State of Tennessee

State of New Jersey DEP BUST Subsurface Evaluator OSHA 40-Hour Hazardous Waste Site Worker (OSHA)

OSHA 8-Hour Hazardous Waste Site Worker Annual Refresher (OSHA)

OSHA 8-Hour Hazardous Waste Site Supervisor (OSHA)

EDUCATION M.S., Hydrogeology, City College of New York, New York, NY 1992

B.A., Geology, Hunter College, New York, NY 1989

Associate Degree, Civil Engineering, Ben Gurion University, Beer-Sheva,

Israel, 1984

Mr. Kedem has over seventeen years of experience in environmental, geotechnical and civil engineering and consulting. His experience includes management and technical performance of environmental and geotechnical consulting services including subsurface investigations, site assessments, remedial investigations and design, and petroleum storage tank management, compliance, closure and design. He has participated in, managed, and prepared proposals, protocols, specifications, and reports for hundreds of projects in the areas of Phase I and II Environmental Site Assessment (ESA); remedial investigation/feasibility study for soil and groundwater remediation; geophysical investigation; site assessment, management, closure, compliance and upgrading and new system design for petroleum storage tank sites. His experience also includes civil engineering design, project management, supervision and inspection of all phases of industrial, commercial and residential construction.

REPRESENTATIVE PROJECT EXPERIENCE

New York City Department of Design and Construction, New York, NY Managed a vehicle fueling tank system upgrade project for twenty-five sites with over forty underground storage tanks throughout New York City. The project included site investigation, compliance audits, replacement system design, closure assessment, subsurface investigation, and remediation.

Briar Hall Country Club, Briarcliff Manor, NY Managed and performed underground storage tank replacement, petroleum contaminated soil investigation and remediation and trichloroethane contaminated groundwater plum delineation within the local metamorphic fractured bedrock.

Former Alexander's Stores, New York, NY Managed and performed Phase I and II ESAs, underground storage tank closure, assessment, and remediation for numerous facilities within New York City.

UBS Asset Management, New York, NY Managed and provided report review for over thirty Phase I ESAs located throughout the country. The project, which was completed in thirty days, included comprehensive asbestos surveys, building condition surveys, and seismic surveys.

The Chase Manhattan Bank, New York, NY Conducted, managed, and provided report review for over two hundred Phase I ESAs for residential and commercial properties located in the New York City metropolitan area, New Jersey and Connecticut.

General Greene Shopping Center, Springfield, NJ Managed and conducted Phase I and II ESA, remedial investigation and periodic monitoring for TCE contaminated groundwater behind the on-site dry cleaning facility.

Mobile Communications Companies Managed and provided report review for over one hundred Phase I and II ESAs for commercial properties located throughout New York State and New Jersey.

SEMINARS & COURSES

Environmental Regulations in New York, Institute of Business Law
Compliance with the TC Rule and Implementing the Toxicity Characteristic Leaching procedure (TCLP),
USEPA
Amtrack Contractor Safety Course
Troxler Nuclear Gauge Course
Risk-Based Corrective Action process, ASTM

QUALIFICATIONS Professional Engineer, CT, RI, MA, NY, PA, NJ

Licensed Environmental Professional, CT Lead Planner Project Designer (PP001048A)

Health & Safety Supervisors Training for Hazardous Waste Activities

OSHA 40 Hour Health & Safety Training for Hazardous Waste

Operations

Member National Association of Health & Safety Professionals

Member American Society of Civil Engineers
Member Water Environment Federation

Member Hazardous Materials Control Resources Institute

Member National Groundwater Association Member Connecticut Groundwater Association

EDUCATION M.S. Environmental Engineering - University of New Haven

B.S. Civil Engineering - Norwich University

Mr. LaBella has a Master of Science Degree in Environmental Engineering concentrating on the fields of hazardous materials management and remediation. He is a Registered Professional Engineer and is certified as a Hazardous Materials Manager. He is familiar with Federal and State regulations, environmental sampling protocols and field testing, and health and safety equipment and practices.

Mr. LaBella's responsibilities include coordination, administration and overview of environmental projects, as well as the training and professional growth of the environmental staff. Other responsibilities include project management, report development and coordination of field and laboratory activities.

Mr. LaBella has performed and managed numerous Phase I and Phase II Environmental Site Assessments throughout the northeast. He has managed many large multi-site Phase I ESAs involving sites located throughout the United States. These ESAs have been performed under the requirements of various lending institutions, state programs, (CT Transfer Act, ConnDOT On- Call Contract, Chapter 21e of the Massachusetts Contingency Plan), as well as the ASTM Standard of Practice.

He has also been involved in detailed subsurface investigations including soil sampling and analysis, installation of groundwater monitoring wells and subsequent groundwater sampling, soil gas surveys, geophysical surveys, and surficial surveys. He has authored Remedial Action Plans (RAPs) and developed plans and specifications for clean up of hazardous waste sites as well as for the removal and closure of USTs.

Previously, Mr. LaBella worked for large environmental consulting firms in Connecticut and New York. His responsibilities included project management, remedial design, construction management and marketing. Highlights of various projects are listed below:

REPRESENTATIVE PROJECT EXPERIENCE

Project Coordinator for the On-Call Environmental Consulting services contract with ConnDOT.

Project Manager for the subsurface investigation and remediation of the White Plains Mall. Project included design of a sampling plan and RAP for numerous USTs discovered during construction of this mall.

Project Manager for Hazardous Waste Investigations, UST closure and development of remedial action plans for Fortune 500 companies.

Project Manager for various projects that have included soil and groundwater quality and impact assessment studies for private developers, lending institutions and municipalities.

Mr. LaBella has also reviewed environmental assessments and remedial action plans prepared by others for commercial, industrial and residential projects.

QUALIFICATIONS OSHA 40-Hour Haz WOPER Course (OSHA)

OSHA 8-Hour Haz WOPER Annual Refresher (OSHA) OSHA 8-Hour Hazardous Waste Site Supervisor (OSHA) Asbestos Project Monitor (EPA; AHERA; NYS-DOL) Asbestos Supervisor (EPA; AHERA; NYS-DOL) Asbestos Inspector (EPA; AHERA; NYS-DOL)

EDUCATION

B.S., Heat Transfer Engineering, Institute of Technology, Kiev, USSR, 1984

Mr. Goklstein has over twelve years of engineering and environmental consulting experience. His experience includes project management, technical performance and proposals preparation for Phase I and Phase II Environmental Site Assessments (ESAs), remedial investigations and design, and petroleum storage tank management, design, compliance and closure. He has participated in remedial investigation for soil and groundwater remediation; site assessment, management, closure, upgrading and new system design for petroleum storage tank sites. Mr. Goklstein has also participated in a field soil permeability and aquifer conductivity testing as part of a soil and ground water remedial investigation. His experience also includes performance of asbestos surveys, asbestos abatement project monitoring. Mr. Goklstein's experience also includes all phases of energy production at a thermo power plant.

REPRESENTATIVE PROJECT EXPERIENCE

New York City Department of Design and Construction, New York, NY Prepared design drawings for a multi-sidevehicle fueling tank system upgrade project throughout New York City. The project also included site investigation, compliance audits, subsurface investigation, remediation and free product recovery. He also oversaw all subcontractors' work on all phases of UST removal/installation, and drilling and monitoring well installation, interfaced with environmental laboratories and prepared reports.

Briar Hall Country Club, Briarcliff Manor, NY Supervised and performed underground storage tank replacement, contaminated soil remediation and contaminated groundwater plum delineation.

Kings Plaza Shopping Center, Brooklyn, NY Supervised underground storage tank system testing, prepared cost estimate for underground storage tank system closure, upgrade and replacement.

UBS Asset Management, New York, NY Supervised, provided report review and performed over fifteen Phase I ESAs for commercial properties located throughout the Eastern United States.

The Chase Manhattan Bank, New York, NY Supervised, provided report review and performed over twenty Phase I ESAs for residential and commercial properties located throughout the States of New York, New Jersey and Connecticut.

Mobile Communications Companies Supervised, provided report review and performed over ten Phase I and II ESAs for commercial properties located throughout New York State and New Jersey.

New York City Transit Authority, Brooklyn, NY Performed asbestos abatement project monitoring for fifteen properties.

Green Acres Shopping Center, Valley Stream, NY Performed asbestos survey, bid walk-through and asbestos abatement project monitoring for ten projects.

SEMINARS AND COURSES

Risk-Based Corrective Action process, ASTM New York City Transit Authority Contractor Safety Course Advanced Course in Environmental Engineering, NYANA



STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certifies That

G.C. ENVIRONMENTAL, INC. 410 SAW MILL RIVER ROAD ARDSLEY, NY 10502

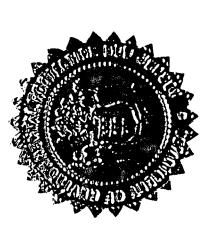


having duly met the requirements of the

Underground Storage Tank Certification Program N. J.S.A. 58:10A-24.1-8

is hereby approved to perform the following services:

SUBSURFACE



ASSISTANT COMMISSIONER, DEPARTMENT OF ENVIRONMENTAL PROTECTION

07/31/01 Expiration date

PERMANENT CERTIFICATION NUMBER

TO BE CONSPICUOUSLY DISPLAYED AT THE FACILITY

Real Estate Institute at The Midtown Center SCHOOL OF CONTINUING EDUCATION 10036 11 West 42nd Street NEW YORK UNIVERSITY ENVINV-002 212)790-1648 New York, New York No.

Gregory Collins

Investigator Has completed an Environmental

fay 13, 1993

Assessments Remediation Technologies and Environmental Regulations. Site Underground Environmental Inspection, include: Phase and PCB Radon, topics covered Lead, Assessment, Asbestos,

WARREN & PANZER ENGINEERS, P.C.

Robert Politzer

Robert Politzer Assistant Director of Training

This is to certify that

Gregory A. Gollins

has successfully completed

New Environment, Inc.'s

Train-The-Trainer Course in Instructional Techniques for Hazardous Waste Trainers

February 3,1995

Date

Brookfield, OH

Location

President, New Environment, Inc.

Pete Hunkus

Instructor



This is to certify that

Gregory A. Collins

has satisfactorily completed 40 hours of Health & Safety Training In accordance with 29CFR 1910.120

November 12, 19

Date

W. Babylon, N

Location

Student 1D Number

3697

President New Environment Inc

This is to certify that

Gregory A. Gollins

has satisfactorily completed NEI's GENERAL HAZARD AWARENESS

29CFR1910.120(q)] [29CFR1910.1200]

DOT HM-126F

4-HOUR CERTIFICATION PROGRAM

January 30, 1995

Date

Brookfield, OH

Location

4 CEU's

President, New Environment, Inc.

3697

This is to certify that

Gregory A. Gollins

has satisfactorily completed NEI's

BASIC SAFETY TRAINING
[29CFR1910.120(q)]]
[DOT HM-126F]

4-HOUR CERTIFICATION PROGRAM

January 30, 1995

B C Brookfield, OH

Location

4 CEU's

3697

President, New Environment, Inc.

This is to certify that

Gregory A. Collins

has satisfactorily completed NEI's
HAZARDOUS WASTE WORKER

40-HOUR CERTIFICATION PROGRAM

February 2, 1995

Date

Brookfield, OH

Location

3.2 CEU's

3697

President, New Environment, Inc.

This is to certify that

Gregory A. Gollins

has satisfactorily completed NEI's
HAZARDOUS WASTE-SUPERVISOR
[29CFR1910.120(e)(4)]
8-HOUR CERTIFICATION PROGRAM

February 3, 1995

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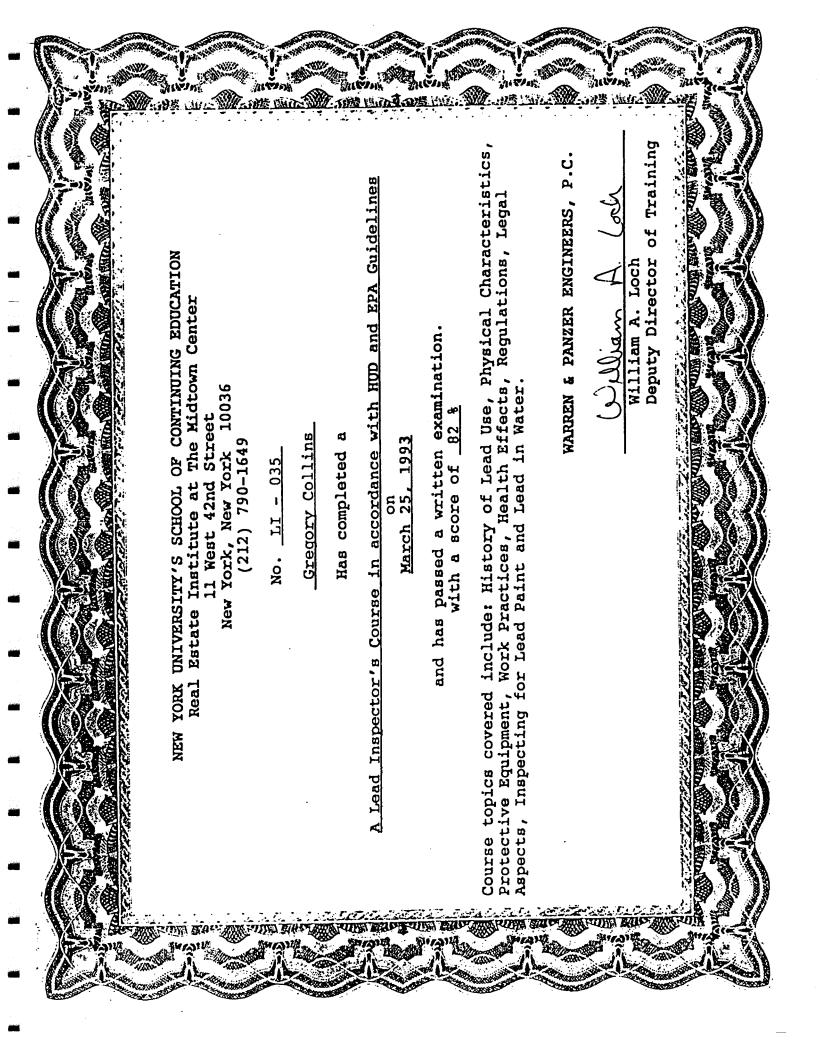
Brookfield, OH

Location

.8 CEU's

President, New Environment, Inc.

3697





Gregory Collins

of

A.N.S. Welding Corp.

HAS RECEIVED TRAINING IN

THE OSHA EXCAVATION AND TRENCHING STANDARD

AND

SOILS EVALUATION AND IDENTIFICATION

ON THE 20th DAY OF JUNE, 1990

Long Island, New York



`&&&&&&&&

Jeffrey J. Zoos Managing Divector General Building Contractors of NYS/AGC

Castellina

A.J. Castelbuono Executive Director New York State Chapter, AGC



GREG COLLINS

This

Oertificate of Apprecial

For Outstanding Service to This Association



April 14

Dert Myg New York #18

PRESIDENT



State of Tennessee Department of Commerce and Insurance

Be it Known that:

Nahum Kedem

Has salisfied all requirements set forth by Public Chapter 553 the Geologist Registration Act of 1988

Therefore is duly authorized and registered as a

Professional Geologist in the State of.

Tennessee. Registrant is subject to all applicable laws.

Carol Peeples Cash
Assistant Commissioner

TN3960
Registration No.



CERTIFICATE OF COMPLETION

This certifies that

NAHUM KEDEM

has successfully met the requirements of 29 CFR 1910.120 (e)(4)

OSHA Supervisor's Specialized Training

at LEVINE-FRICKE-RECON INC.

April 15, 1997

James F. Ross, Instruc

Joshne Jaeger(Sculls, P.E., C.I.H., Viče President

Certificate of Completion

This is to certify that

Nahum Redem

40-HOUR HRZARDOUS WASTE SITE WORKER training program as required by OSHR 29 CFR 1910.120 (e)(2) has successfully completed a

halles 4. The Alls I les A Ludwig

7.51-92

INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH 1143 ST. GEORGES AVENUE RAHWAY, NJ 07065

Department of Environmental Protection STATE OF NEW JERSEY

the Goodstanding of: Heroby Certifies

Name: NAHUM KEDEM License No. 0012075

SSN: 080-78-7880 Reg Na.

700400

 $\boldsymbol{\omega}$

SUBSURFACE

07/31/88 Expires:

Doc No. 96043848

CERTIFICATE OF COMPLETION

This certifies that

Nat Kedem

has successfully completed the

LEVINE•FRICKE•RECON INC.

Course on

Risk Based Corrective Action

(In Accordance with ASTM Standard E1739-95)

January 10, 1997

Eric Nichols, Instructor

Johns J. Scully, PE, CH, Vice President



Cook College

Continuing Professional Education

THIS CERTIFICATE IS AWARDED TO

Nahum Kedem

FOR THE COMPLETION OF

Technical and Regulatory Training in

UNDERGROUND STORAGE TANKS

March 12, 1996 0.65 CEUs

Edward V. Lipman, Jr.

Edward Vhismon

Director
Continuing Professional Education



Kenn F. Ghatina

Kevin F. Kratina, Chief
Bureau of Underground Storage Tanks
NJ Department of Environmental Protection

This course satisfies the requirements of P.L. 1991, C.123, for attendance at a "department-approved training course on the department's rules & regulations concerning underground storage tanks."

ARONLER ELECTRONIC LABORATORIES, INC

MILITARY STATES

(MIIIII

HEREBY CERTIFIES THAT

NAHUM KEDEM

οť

CONVERSE CONSULTANTS EAST

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC. TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

afety	5. Radioactivity measurement standardization	instruments Accident and incidents procedures. Procedures for nuclear gauge storage	and transportation. General safety precautions.	ge Operation 4. Field:application	Gauge calibration	/92 WILLIAM F. PRESIDENT
gical S	5.	6.	∞.	Opera 4:	5.	7/14/92 Date
Radiological Safety	and practices of radiation	ations basic to	danon	Gauge Operation 4. Field	5. Gai CERTIFICATE #: 054313	
	Principles and practice	Leak testing procedures Mathematics and calculations basic to the use and measurement of	radioactivity. Biological effects of radiation	Instrument theory	2. Operating procedures 3. Maintenance	HIL IN PALILLA INSTRUCTOR
	1.	3.5	4.	l.	Dw 2.	H IL P H IL

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THE UNIVERSITY OF THE STATE OF NEW YORK EDUCATION DEPARTMENT



BE IT KNOWN THAT

GUY FRANCIS LABELLA

HAVING GIVEN SATISFACTORY EVIDENCE OF THE COMPLETION OF PROFESSIONAL AND OTHER REQUIREMENTS PRESCRIBED BY LAW IS QUALIFIED TO PRACTICE AS A

PROFESSIONAL ENGINEER

IN THE STATE OF NEW YORK

IN WITNESS WHEREOF THE EDUCATION DEPARTMENT GRANTS THIS LICENSE UNDER ITS SEAL AT ALBANY, NEW YORK THIS TWENTY-FIFTH DAY OF JANUARY, 1989.

LICENSE NUMBER 065279



PRESIDENT OF THE UNIVERSITY
AND COMMISSIONER OF EDUCATION

Mylas C Ataloxuel

EXECUTIVE SECRETARY
STATE BOARD FOR
ENGINEERING AND LAND SURVEYING

CERTIFICATE OF COMPLETION

This certifies that

Igor Golshteyn

has successfully met the requirements of

29 CFR 1910.120 (e)(4)

OSHA Supervisor's Specialized Training

at LEVINE-FRICKE-RECON INC.

November 13, 1996.

nes F. Ross, Instruetor

Filen 4. 1000

Richard F. Toro, CIH, Executive Vice President

I eslie Reid-Green

CERTIFICATE OF COMPLETION

This certifies that

Igor Golshteyn

has successfully completed the

LEVINE•FRICKE•RECON INC.

Course on

Risk Based Corrective Action

(In Accordance with ASTM Standard E1739-95)

January 10, 1997

Eric Nichols, Instructor

Joanne J. Scully PE, CIH, Vice President



New Jersey / New York Hazardous Materials Worker Training Center

(Partially supported by the National Institute of Environmental Health Sciences)

This is to certify that

Igor Golshteyn

Certificate #: UMD 101445

has successfully completed the course entitled

Health and Safety for Hazardous Waste Site Investigation Personnel

40 HOUTS
(4.0 CEU's for 40 contact hours)

conducted by the

Division of Consumer Health Education Department of Environmental and Community Medicine

University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School



February 7-11, 1994

Date

Lean X Kenter Kenter Director

Training Renewal Date: February 11, 1995

Ohn M. Malost.

Course Director

ASBESTOS TRAINING INSTITUTE INC.

This is to certify that

IGOR GOLSHTEYN 070-80-3796

has successfully completed the course entitled

INVESTIGATOR ASBESTOS INSPECTOR ASBESTOS

and passed the examination.

Approved by

NEW YORK CITY DEPT. OF ENVIRONMENTAL PROTECTION NEW YORK STATE DEPT. OF HEALTH and, for purposes of accreditation, EPA-AHERA under 40 CFR 763

Course Coordinator

7/21/93-7/23/93

Date of Course Completion

NYC93234INV/INS-3

Certificate Number

EPA 7/23/94; NYC 7/23/95; NYS BIRTH MONTH

Course Expiration Dates



ASBESTOS TRAINING INSTITUTE, INC. 47 W. 13th Street New York, NY 10011 Tel: 212-206-7019

ASBESTOS TRAINING INSTITUTE INC.

This is to certify that

IGOR GOLSHTEYN 070-80-3796

has successfully completed the course entitled

AIR SAMPLING TECHNICIAN

and passed the examination.

Approved by
NEW YORK STATE DEPT. OF HEALTH

honocaloca Course Coordinator

5/4/93-5/5/93

Date of Course Completion

NYC93148AST-2

Certificate Number

BIRTH MONTH

Course Expiration Dates



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IGOR GOLSHTEYN 070-80-3796

has successfully completed the course entitled

SUPERVISOR ASBESTOS HANDLER CONTRACTOR/SUPERVISOR ASBESTOS

and passed the examination.

Approved by

NEW YORK CITY DEPT. OF ENVIRONMENTAL PROTECTION NEW YORK STATE DEPT. OF HEALTH and, for purposes of accreditation, EPA-AHERA under 40 CFR 763

Course Coordinator

5/10/93-5/14/93

NYC93157S-3

Date of Course Completion

Certificate Number

EPA 5/14/94; NYC 5/14/95; NYS BIRTH MONTH

Course Expiration Dates



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Tel: 212-206-7019

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ASBESTOS HANDLER ASBESTOS WORKER

and passed the examination.

Approved by

NEW YORK CITY DEPT. OF ENVIRONMENTAL PROTECTION

NEW YORK STATE DEPT. OF HEALTH

and, for purposes of accreditation, EPA-AHERA under 40 CFR 763

Course Coordinator

5/10/93-5/13/93

NYC93156H-3

Date of Course Completion

Certificate Number

EPA 5/13/94; NYC 5/13/95; NYS BIRTH MONTH

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Tel: 212-206-7019

RICHARD F. DAINES, M.D.



Expires 12:01 AM April 01, 2008 Issued April 01, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. THOMAS TREUTLEIN ECOTEST LABORATORIES INC 377 SHEFFIELD AVENUE NORTH BABYLON, NY 11703 NY Lab Id No: 10320 EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

D. W. Methylcarbamate Pesticides		Drinking Water Chlorinated Acids	
3-Hydroxy Carbofuran	EPA 531.1	2,4,5-TP (Silvex)	EPA 515.1
Aldicarb	EPA 531.1	2,4-D	EPA 515.1
Aldicarb Sulfone	EPA 531.1	Dalapon	EPA 515.1
Aldicarb Sulfoxide	EPA 531.1	Dicamba	EPA 515.1
Carbaryl	EPA 531.1	Dinoseb	EPA 515.1
Carbofuran	EPA 531.1	Pentachlorophenol	EPA 515.1
Methomyl	EPA 531.1	Picloram	EPA 515.1
Oxamyl	EPA 531.1	Drinking Water Metals I	
Disinfection By-products		Arsenic, Total	EPA 200.7
Bromochloroacetic acid	EPA 552.2		EPA 200.9
Dibromoacetic acid	EPA 552.2	Barium, Total	EPA 200.7
Dichloroacetic acid	EPA 552.2	Cadmium, Total	EPA 200.7
Monobromoacetic acid	EPA 552.2		EPA 200.9
Monochloroacetic acid	EPA 552.2	Chromium, Total	EPA 200.7
Trichloroacetic acid	EPA 552.2		SM 18-19 3113B
		Copper, Total	EPA 200.7
Drinking Water Bacteriology			SM 18-20 3111B
Coliform, Total / E. coli (Qualitative)	SM 18-20 9221B	Iron, Total	EPA 200.7
	SM 18-20 9221D	·	SM 18-20 3111B
	SM 18-20 9223 (Colilert)	Lead, Total	EPA 200.9
Standard Plate Count	SimPlate	Manganese, Total	EPA 200.7
	SM 18 9215B		SM 18-20 3111B

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Drinking Water Metals I		Drinking Water Metals III	
Mercury, Total	EPA 245.1	Sodium, Total	SM 18-20 3111B
Selenium, Total	EPA 200.9	Drinking Water Miscellaneous	
Silver, Total Zinc, Total	EPA 200.7 SM 18-19 3113B EPA 200.7	Benzo(a)pyrene Bis(2-ethylhexyl) phthalate	EPA 525.2 EPA 525.2
ZIIIG, 10tas	SM 18-20 3111B	Butachlor Di (2-ethylhexyl) adipa te	EPA 507 EPA 525.2
Drinking Water Metals II		Glyphosate	EPA 547
Aluminum, Total	EPA 200.7	Hexachlorobenzene	EPA 508
Antimony, Total	EPA 200.9	Hexachlorocyclopentadiene	EPA 525.2
Beryllium, Total	EPA 200.7	Methyl tert-butyl ether	EPA 502.2/ SEE ITEM 198.5
Molybdenum, Total	EPA 200.7		EPA 524.2
Nickel, Total	EPA 200.7	Odor	EPA 140.1
Thallium, Total	EPA 200.9	Organic Carbon, Total	EPA 415.1
Vanadium, Total	EPA 200.7	Propachior	EPA 508
Drinking Water Metals III		Drinking Water Non-Metals	
Boron, Total	EPA 200.7	Alkalinity	SM 18-20 2320B
Calcium, Total	EPA 200.7	Calcium Hardness	EPA 200.7
Magnesium, Total	EPA 200.7	Chloride	SM 18-20 4500-CI B
	SM 18-20 3111B	Color	SM 18-20 2120B
Potassium, Total	EPA 200.7	Corrosivity	SM 18-19 2330
•	SM 18-20 3111B	Cyanide, Free	EPA 335.4
Sodium, Total	EPA 200.7	Cyanide, Total	EPA 335.4

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NY Lab Id No: 10320 EPA Lab Code: NY00038

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Drinking Water Non-Metals		Drinking Water Organohalide Pesticides	
Fluoride, Total	SM 18-20 4500-F C	Simazine	EPA 507
Hydrogen Ion (pH)	EPA 150.1	Toxaphene	EPA 508
Nitrate (as N)	EPA 353.2	Drinking Water Trihalomethanes	
Nitrite (as N)	SM 18-20 4500-NO2 B	Bromodichloromethane	EPA 524.2
Orthophosphate (as P)	SM 18-20 4500-P E	Bromoform	EPA 524.2
Silica, Dissolved	EPA 200.7	Chloroform	EPA 524.2
Solids, Total Dissolved	SM 18-20 2540C	Dibromochloromethane	EPA 524.2
Specific Conductance	SM 18-20 2510B		•
Sulfate (as SO4)	EPA 375.4	Microextractibles	
Drinking Water Organohalide Pe		1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	EPA 504.1 EPA 504.1
Alach io r	EPA 507		
Aldrin	EPA 508	Polychiorinated Biphenyis	
Atrazine	EPA 507	PCB Screen	EPA 508
Chlordane Total	EPA 508	Volatile Aromatics	
Dieldrin	EPA 508	1.2.3-Trichlorobenzene	EPA 502.2
Endrin	EPA 508	· ·	EPA 524.2
Heptachlor	EPA 508	1,2,4-Trichlorobenzene	EPA 502.2
Heptachlor epoxide	EPA 508	1,61	EPA 524.2
Lindane	EPÅ 508	1,2,4-Trimethylbenzene	EPA 502.2
Methoxychlor	EPA 508	timi, , , , , , , , , , , , , , , , , , ,	EPA 524.2
Metolachlor	EPA 507	1 2-Dichlorobenzene	EPA 502.2

Serial No.: 32256

Property of the New York State Department of Health, Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

EPA 507



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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER RICHARD F. DAINES, M.D.



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Volatile Aromatics		Volatile Aromatics	
1.2-Dichlorobenzene	EPA 524.2	n-Butylbenzene	EPA 502.2
1,3,5-Trimethylbenzene	EPA 502.2		EPA 524.2
1,0,0-1 tillietily ibeliance	EPA 524.2	n-Propyibenzene	EPA 502.2
1.3-Dichlorobenzene	EPA 502.2	·	EPA 524.2
1,3-Diditiolonelizere	EPA 524.2	p-Isopropyltoluene (P-Cymene)	EPA 502.2
1.4-Dichlorobenzene	EPA 502.2	, , , , ,	EPA 524.2
1,4-Dichiotoperizere	EPA 524.2	sec-Butylbenzene	EPA 502.2
o old satisface	EPA 502.2	•	EPA 524.2
2-Chlorotoluene	EPA 524.2	Styrene	EPA 502.2
	EPA 502.2		EPA 524.2
4-Chiorotoluene	EPA 524.2	tert-Butylbenzene	EPA 502.2
	EPA 502.2		EPA 524.2
Benzene	EPA 524.2	Toluene	EPA 502.2
	EPA 502.2		EPA 524.2
Bromobenzene	EPA 524.2	Total Xylenes	EPA 502.2
	EPA 502.2	, out of the second	EPA 524.2
Chlorobenzene	EPA 502.2 EPA 524.2		
	EPA 502.2	Volatile Halocarbons	
Ethyl benzene	EPA 502.2 EPA 524.2	1,1,1,2-Tetrachloroethane	EPA 502.2
	EPA 502.2		EPA 524.2
Hexachiorobutadie ne	EPA 502.2 EPA 524.2	1,1,1-Trichloroethane	EPA 502.2
			EPA 524.2
lsopropylbenzene	EPA 502.2	1,1,2,2-Tetrachioroethane	EPA 502.2
	EPA 524.2		

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Volatile Halocarbons		Volatile Halocarbons	
1,1,2,2-Tetrachloroethane	EPA 524.2	Carbon tetrachloride	EPA 502.2
1,1,2-Trichloroethane	EPA 502.2		EPA 524.2
,,,,	EPA 524.2	Chloroethane	EPA 502.2
1,1-Dichloroethane	EPA 502.2		EPA 524.2
.,.	EPA 524.2	Chloromethane	EPA 502.2
1,1-Dichloroethene	EPA 502.2		EPA 524.2
,,,	EPA 524.2	cis-1,2-Dichloroethene	EPA 502.2
1,1-Dichloropropene	EPA 502.2		EPA 524.2
,,,	EPA 524.2	cis-1,3-Dichloropropene	EPA 502.2
1.2.3-Trichloropropane	EPA 502.2		EPA 524.2
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	EPA 524.2	Dibromomethane	EPA 502.2
1,2-Dichloroethane	EPA 502.2		EPA 524.2
	EPA 524.2	Dichlorodifluoromethane	EPA 502.2
1,2-Dichloropropane	EPA 502.2		EPA 524.2
.,	EPA 524.2	Methylene chloride	EPA 502.2
1.3-Dichloropropane	EPA 502.2		EPA 524.2
• •	EPA 524.2	Tetrachloroethene	EPA 502.2
2,2-Dichloropropane	EPA 502.2		EPA 524.2
	EPA 524.2	trans-1,2-Dichloroethene	EPA 502.2
Bromochloromethane	EPA 502.2		EPA 524.2
	EPA 524.2	trans-1,3-Dichloropropene	EPA 502.2
Bromomethane	EPA 502.2		EPA 524.2
	EPA 524.2	Trichloroethene	EPA 502.2

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All approved analytes are listed below:

Volatile Halocarbons

Trichloroethene EPA 524.2
Trichlorofluoromethane EPA 502.2
EPA 524.2
Vinyl chloride EPA 502.2
EPA 524.2

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All approved analytes are listed below:

	Amines	
EPA 624	Pyridine Pyridine	EPA 8260B
EPA 8260B		EPA 8270C
EPA 624	Bacteriology	
EPA 8260B	• • •	SM 18-20 9221E
EPA 8260B	· ·	SM 18-20 9221B
EPA 8260B	'	SimPlate
EPA 8260B		SM 18 9215B
	Benzidines	
EPA 8270C	3.3' -Dichlorobenzidine	EPA 625
EPA 8270C	3,3'-Dimethylbenzidene	EPA 8270C
EPA 8270C		EPA 625
EPA 8270C		
EPA 8270C	Carbamate Pesticides	
EPA 8270C	Aldicarb	EPA 8318
EPA 8270C	Aldicarb Sulfone	EPA 8318
EPA 8270C	Carbofuran	EPA 8318
EPA 8270C	Chlorinated Hydrocarbon Pestic	ides
EPA 8270C	•	EPA*608
EPA 8270C	4,4-000	EPA 8081A
EPA 8270C		EPA 608
EPA 8270C	4,4 -UUC	EPA 8081A
EPA 8260B		ELV 000 (V
	EPA 8260B EPA 624 EPA 8260B EPA 8260B EPA 8260B EPA 8260B EPA 8270C	EPA 624 EPA 8260B EPA 624 EPA 8260B EPA 8270C Carbamate Pesticides EPA 8270C EPA 8270C EPA 8270C Carbofuran EPA 8270C EPA 8270

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Chlorinated Hydrocarbon Pesticides		Chlorinated Hydrocarbon Pesticides	
4,4'-DDT	EPA 608 EPA 8081A	Endrin aldehyde	EPA 608 EPA 8081A
Aldrin	EPA 608 EPA 8081A	Endrin Keton e gamma-Chlordan e	EPA 8081A EPA 8081A
alpha-BHC	EPA 608 EPA 8081 A	Heptachlor	EPA 608 EPA 8081A
alpha-Chlordane beta-BHC	EPA 8081A EPA 608	Heptachlor epoxide	EPA 608 EPA 8081A
Chlordane Total	EPA 8081A EPA 608 EPA 8081A	Lindane Methoxychlor	EPA 608 EPA 8081A EPA 608
delta-BHC	EPA 608 EPA 8081A	Mirex	EPA 8081A SM 18-20 6630B
Dieldrin	EPA 608 EPA 8081A	Toxaphe ne	EPA 608 EPA 8081A
Endosulfan I	EPA 608 EPA 8081A	Chlorinated Hydrocarbons 1,2,4,5-Tetrachlorobenzene	EPA 8270C
Endosulfan II	EPA 608 EPA 8081A	1,2,4-Trichlorobenzene	EPA 625 EPA 8270C
Endosulfan sulfate	EPA 608 EPA 8081A	1-Chloronaphthalene 2-Chloronaphthalene	EPA 8270C EPA 625
Endrin	EPA 608 EPA 8081A	2 0110101101010	EPA 8270C

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Chlorinated Hydrocarbons		Chlorophenoxy Acid Pesticides	
Hexachlorobenze ne	EPA 625	Dinoseb	EPA 8151A
• • • • • • • • • • • • • • • • • • • •	EPA 8270C	Demand	
Hexachlorobutadiene Hexachlorocyclopentadiene	EPA 625 EPA 8270C EPA 625 EPA 8270C	Biochemical Oxygen Demand Carbonaceous BOD Chemical Oxygen Demand	EPA 405.1 SM 18-20 5210B EPA 410.4
Hexachloroethane	EPA 625	Fuel Oxygenates	
• • • • • • • • • • • • • • • • • • • •	EPA 8270C EPA 8270C	Ethanol	EPA 8015 B EPA 8260B
Hexachloroprope ne Pentachlorobenze ne	EPA 8270C	Methyl tert-butyl ether	EPA 8021B EPA 8260B
Chlorophenoxy Acid Pesticides 2,4,5-T	EPA 1978, p.115	t-Butyl alcohol	EPA 8015 B EPA 8260B
2,4,5-TP (Silvex)	EPA 8151A EPA 1978, p.115	Haloethers	EPA 625
	EPA 8151A SM 18-20 6640B EPA 1978, p.115	4-Bromophenylphenyl ether 4-Chlorophenylphenyl ether	EPA 8270C EPA 625
2,4-D	EPA 8151A SM 18-20 6640B		EPA 8270C EPA 625
Dalapon	EPA 8151A	Bis (2-chlorolsopropyl) ether	EPA 8270C EPA 625
Dicamba	EPA 1978, p.115 EPA 8151 A	Bis(2-chloroethoxy)methane	EPA 8270C

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	Haloethers		Nitroaromatics and Isophorone	
i	Bis(2-chloroethyl)ether	EPA 625	tsophoro ne	EPA 625
	• • •	EPA 8270C		EPA 8270C
			Nitrobenzene	EPA 625
:	Microextractables			EPA 8270C
i	1,2-Dibromo-3-chloropropane	EPA 8011	N14	
	1,2-Dibromoethane	EPA 8011	Nitrosoamin es	
	Mineral		N-Nitrosodiethylamine	EPA 8270C
			N-Nitrosodimethylamine	EPA 625
	Acidity	EPA 305.1		EPA 8270C
	Alkalinity	SM 18-20 2320B	N-Nitrosodi-n-butylamine	EPA 8270C
	Calcium Hardness	EPA 200.7	N-Nitrosodi-n-propylamine	EPA 625
	Chloride	SM 18-20 4500-CI B	• • • •	EPA 8270C
	Fluoride, Total	SM 18-20 4500-F C	N-Nitrosodiphenylamine	EPA 625
	Hardness, Total	EPA 200.7		EPA 8270C
į	Sulfate (as SO4)	EPA 375.4	N-nitrosopiperidine	EPA 8270C
	Nitroaromatics and Isophorone		N-Nitrosopyrrolldine	EPA 8270C
	1,3,5-Trinitrobenzene	EPA 8270C	Nutrient	
	1,3-Dinitrobenzene	EPA 8270C	Ammonia (as N)	EPA 350.2
	1,4-Naphthoquinone	EPA 8270C	(2077)	EPA 350.3
	2,4-Dinitrotoluene	EPA 625	Kjeldahl Nitrogen, Total	EPA 351.3
		EPA 8270C	Nitrate (as N)	EPA 353.2
1	2,6-Dinitrotoluene	EPA 625	, , ,	EPA 354.1
	_,	EPA 8270C	Nitrite (as N)	
			Orthophosphate (as P)	EPA 365.3

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Nutrient		Phthalate Esters	
Phosphorus, Total	EPA 365.2	Dimethyl phthalate	EPA 8270C
•	EPA 365.3	Di-n-butyl phthalate	EPA 625
an all a surface and the second of the second			EPA 8270C
Organophosphate Pesticides		Di-n-octyl phthalate	EPA 625
Azinphos methyl	EPA 8270C	•	EPA 8270C
Demeton-O	EPA 8270C		
Demeton-S	EPA 8270C	Polychlorinated Biphenyls	
Diazinon	EPA 8270C	PCB-101 6	EPA 608
Dimethoa te	EPA 8270C		EPA 8082
Disulfoton	EPA 8270C		EPA 8270C
Famphur	EPA 8270C	PCB-1221	EPA 608
Malathion	EPA 8270C		EPA 8082
Parathion ethyl	EPA 8270C		EPA 8270C
Parathion methyl	EPA 8270C	PCB-1232	EPA 608
Phorate	EPA 8270C		EPA 8082
Phthalate Esters			EPA 8270C
• • • • • • • • • • • • • • • • • • • •		PCB-1242	EPA 608
Benzyl butyl phthalate	EPA 625		EPA 8082
	EPA 8270C		EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 625	PCB-1248	EPA 608
	EPA 8270C		EPA 8082
Diethyl phthalate	EPA 625		EPA 8270C
	EPA 82 70C	PCB-1254	EPA 608
Dimethyl phthalate	EPA 625	, 00 ,20	

Serial No.: 32257



RICHARD F. DAINES, M.D.



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MR. THOMAS TREUTLEIN ECOTEST LABORATORIES INC 377 SHEFFIELD AVENUE NORTH BABYLON, NY 11703 NY Lab Id No: 10320 EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Polychlorinated Biphenyis		Polynuclear Aromatics	
PCB-1254	EPA 8082	Benzo(k)fluoranthene	EPA 625
	EPA 8270C		EPA 8270C
PCB-1260	EPA 608	Chrysene	EPA 625
	EPA 8082		EPA 8270C
	EPA 8270C	Dibenzo(a,h)anthracene	EPA 625
			EPA 8270C
Polynuclear Aromatics		Fluoranthene	EPA 625
3-Methylcholanthrene	EPA 8270C		EPA 8270C
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C	Fluorene	EPA 625
Acenaphthene	EPA 625		EPA 8270C
	EPA 8270C	Indeno(1,2,3-cd)pyrene	EPA 625
Acenaphthylene	EPA 625		EPA 8270C
	EPA 8270C	Naphthalen e	EPA 625
Anthrace ne	EPA 625	Tropinia.on	EPA 8270C
	EPA 8270C	Phenanthrene	EPA 625
Benzo(a)anthracene	EPA 625	· constitutions	EPA 8270C
	EPA 8270C	Pyrene	EPA 625
Benzo(a)pyrene	EPA 625	7 yielle	EPA 8270C
	EPA 8270C		
Benzo(b)fluoranthene	EPA 625	Priority Pollutant Phenois	
	EPA 8270C	2,3,4,6 Tetrachlorophenol	EPA 8270C
Benzo(ghi)perylene	EPA 625	2,4,5-Trichlorophenol	EPA 625
	EPA 8270C		EPA 8270C

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Priority Pollutant Phenols		Priority Pollutant Phenois	
2,4,6-Trichlorophenol	EPA 625	Pentachlorophenoi	EPA 625
	EPA 8270C		EPA 8270C
2,4-Dichlorophenol	EPA 625	Phenol	EPA 625
,	EPA 8270C		EPA 8270C
2,4-Dimethylphenol	EPA 625	Purgeable Aromatics	
	EPA 8270C		ED4 604
2,4-Dinitrophenol	EPA 625	1,2-Dichlorobenzene	EPA 601
· ·	EPA 8270C		EPA 602
2,6-Dichlorophenol	EPA 8270C		EPA 624
2-Chlorophenol	,	EPA 625	
	EPA 8270C		EPA 8021B
2-Methyl-4,6-dinitrophenol			EPA 8260 B
2.110.113. 1,0 0.111.0.	EPA 8270C		EPA 8270C
2-Methylphenol	EPA 8270C	1,3-Dichiorobenzene	EPA 601
2-Nitrophenol	EPA 625		EPA 602
2 Interpresent	EPA 8270C		EPA 624
3-Methylphenol	EPA 8270C		EPA 625
4-Chloro-3-methylphenol	EPA 625		EPA 8021B
, omere e meng present	EPA 8270C		EPA 8260B
4-Methylphenol	EPA 8270C	1,4-Dichlorobenzene	EPA 8270C
4-Nitrophenol	EPA 625		EPA 601
or imperiore.	EPA 8270C		EPA 602
Cresols. Total	EPA 8270C		EPA 624

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	Purgeable Aromatics	
EPA 625	Total Xylenes	EPA 602
EPA 8021B		EPA 624
EPA 8260B		EPA 8021B
EPA 8270C		EPA 8260 B
EPA 602	Purnoable Halocarhons	
EPA 624	•	EPA 8021B
EPA 8021B	1,1,1,2-1 etrachioroethane	EPA 8260B
EPA 8260B	4.4. Triblian attend	EPA 601
EPA 602	1,1,1-1 richioroethane	EPA 624
EPA 624		EPA 8021B
EPA 8021B		EPA 8260B
EPA 8260B	4.4.0.0 Tuturahlamathana	EPA 601
SM 20 6200C	1,1,2,2-1etrachioroethane	EPA 624
EPA 602		EPA 8021B
EPA 624		EPA 8260B
EPA 8021B	4 4 2 Tricktoroothana	EPA 601
EPA 8260B	1,1,2-trichloloethane	EPA 624
EPA 8021B		EPA 8021B
EPA 8260B		EPA 8260B
EPA 602	1.1 Dichtoroethane	EPA 601
EPA 624	(, I-Diction octains	EPA 624
EPA 8021 B		EPA 8021B
EPA 8260B		
	EPA 8021B EPA 8260B EPA 8270C EPA 602 EPA 624 EPA 8021B EPA 8260B EPA 602 EPA 624 EPA 8021B EPA 8260B SM 20 6200C EPA 602 EPA 602 EPA 602 EPA 602 EPA 602 EPA 8021B EPA 8001B EPA 8001B EPA 8021B	EPA 625 EPA 8021B EPA 8260B EPA 8270C EPA 602 EPA 624 EPA 8021B EPA 8260B EPA 8260B EPA 602 EPA 8021B EPA 8021B EPA 8060B

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All approved analytes are listed below:

Purgeable Halocarbons		Purgeable Halocarbons	•
1,1-Dichloroethane	EPA 8260B	3-Chloropropene (Allyl chloride)	EPA 8260B
1,1-Dichloroethene	EPA 601	Bromodichloromethane	EPA 601
,	EPA 624		EPA 624
	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
1,1-Dichloropropene	EPA 8021B	Bromoform	EPA 601
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	EPA 8260B		EPA 624
1,2,3-Trichloropropane	EPA 8021B		EPA 8021B
,_,	EPA 8260B		EPA 8260B
1.2-Dichloroethane	EPA 601	Bromomethane	EPA 601
,	EPA 624		EPA 624
	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
1,2-Dichloropropane	EPA 601	Carbon tetrachloride	EPA 601
	EPA 624		EPA 624
	EPA 8021B		EPA 8260B
	EPA 8260B	Chloroethane	EPA 601
1,3-Dichloropropane	EPA 8260B		EPA 624
2,2-Dichloropropane	EPA 8260B		EPA 8021B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B		EPA 8260B
2-Chloroethylvinyl ether	EPA 601	Chloroform	EPA 601
	EPA 8021B		EPA 624
	EPA 8260B		EPA 8021B

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All approved analytes are listed below:

Durgashla Halocathone

Purgeable Halocarbons		Purgeable Halocarbons	
Chloroform	EPA 8260B	Tetrachloroethene	EPA 624
Chloromethane	EPA 601		EPA 8021B
	EPA 624		EPA 8260B
	EPA 8021B	trans-1,2-Dichloroethene	EPA 601
	EPA 8260B		EPA 624
cis-1,3-Dichloropropene	EPA 601		EPA 8021B
	EPA 624		EPA 8260B
	EPA 8021B	trans-1,3-Dichloropropene	EPA 601
	EPA 8260B		EPA 624
cis-1,4-Dichloro-2-butene	EPA 8260B		EPA 8021B
Dibromochloromethane	EPA 601		EPA 8260B
	EPA 624	trans-1,4-Dichloro-2-butene	EPA 8260B
	EPA 8021B	Trichloroethene	EPA 601
	EPA 8260B		EPA 624
Dibromometha ne	EPA 8260B		EPA 8021B
Dichlorodifluoromethane	EPA 601		EPA 8260B
	EPA 8021B	Trichlorofluoromethane	EPA 601
	EPA 8260B		EPA 624
Methylene chloride	EPA 601		EPA 8021B
	EPA 624		EPA 8260B
	EPA 8021B	Vinyl chloride	EPA 601
	EPA 8260B		EPA 624
Tetrachioroethene	EPA 601		EPA 8021B

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Paramarkia Halasadhana



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All approved analytes are listed below:

Semi-Volatile Organics

. as Board of transport month			
Vinyl chloride	EPA 8260B	Benzoic Acid	EPA 8270C
Purgeable Organics		Benzyl alcohol	EPA 8270C
1,4-Dioxane 2-Butanone (Methylethyl ketone) 2-Hexanone 4-Methyl-2-Pentanone Acetone Acetonitrile Carbon Disulfide Isobutyl alcohol Methyl iodide	EPA 8260B	Dibenzofuran Ethyl methanesulfonate Isosafrole Methyl methanesulfonate O,O,O-Triethyl phosphorothioate p-Dimethylaminoazobenzene Phenacetin Safrole Wastewater Metals I	EPA 8270C
o-Toluidine	EPA 8260B	Barium, Total	EPA 200.7
Vinyl acetate	EPA 8260B		EPA 6010B
Residu e		Cadmium, Total	EPA 200.7 EPA 200.9
Solids, Total	EPA 160.3		EPA 6010B
Solids, Total Dissolved	EPA 160.1		EPA 7131A
Solids, Total Suspended	EPA 160.2	Calcium, Total	EPA 200.7
Semi-Volatile Organics			EPA 6010B
2-Methylnaphthalene	EPA 8270C	Chromium, Total	EPA 200.7
4-Amino biphenyl	EPA 8270C		EPA 200.9
Acetophenone	EPA 8270C		EPA 218.1

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Purgeable Halocarbons



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Wastewater Metals I		Wastewater Metals I	
Chromium, Total	EPA 6010B	Nickel, Total	EPA 7520
•	EPA 7190	Potassium, Total	EPA 200.7
Copper, Total	EPA 200.7		EPA 258.1
	EPA 220.1		EPA 6010B
	EPA 6010B	Silver, Total	EPA 200.7
Iron, Total	EPA 200.7		EPA 6010B
	EPA 236.1		EPA 7760A
	EPA 6010B		SM 18-19 3113B
Lead, Total	EPA 200.7	Sodium, Total	EPA 200.7
	EPA 239.1		EPA 60108
	EPA 239.2		SM 18-20 3111B
	EPA 6010B	Strontium, Total	EPA 6010B
•	EPA 7420	Wastewater Metals II	
	EPA 7421		EPA 200.7
Magnesium, Total	EPA 200.7	Aluminum, Total	EPA 6010B
	EPA 242.1	Authoring Total	EPA 200.7
	EPA 6010B	Antimony, Total	EPA 200.9
Manganese, Total	EPA 200.7		EPA 6010B
	EPA 6010B		EPA 7041
	SM 18-20 3111B	Arsenic, Total	EPA 200.7
Nickel, Total	EPA 200.7	Arsenic, Total	EPA 200.9
	EPA 249.1		EPA 6010B
	EPA 6010B		LLV 00 10D

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All approved analytes are listed below:

	Wastewater Metals III	
EPA 200.7	Molybdenum, Total	EPA 6010B
EPA 200.9	Palladium, Total	EPA 253.2
EPA 6010B		EPA 255.2
EPA 7196A	Thallium, Total	EPA 200.7
SM 18-19 3500-Cr D		EPA 200.9
EPA 245.2	Tin, Total	EPA 200.7
EPA 7470A		EPA 6010B
EPA 200.7	Titanium, Total	EPA 200.7
EPA 200.9		EPA 6010B
EPA 270.2	Wastaustar Miscallananus	
EPA 6010B		EPA 200.7
EPA 7740	Boron, lotal	
EPA 200.7		EPA 6010B EPA 320.1
EPA 6010B	Bromitte	
EPA 200.7		SM 18-20 2120B
EPA 6010B	Cyanide, I otal	EPA 335.3 EPA 9012A
SM 18-20 3111B	the decrease to a find the	EPA 9012A EPA 150.1
	Hydrogen ion (pri)	EPA 9040B
	ANA A T. 18	
	Oil & Grease Total Recoverable	EPA 1664A
EPA 6010B		EPA 413.1
EPA 231.1	Organic Carbon, Total	EPA 415.1
EPA 200.7	Phen ols	EPA 420.1
	EPA 200.9 EPA 6010B EPA 7196A SM 18-19 3500-Cr D EPA 245.2 EPA 7470A EPA 200.7 EPA 200.9 EPA 270.2 EPA 6010B EPA 7740 EPA 200.7 EPA 6010B EPA 200.7 EPA 6010B EPA 200.7 EPA 6010B EPA 200.7 EPA 6010B SM 18-20 3111B	EPA 200.7 EPA 200.9 EPA 6010B EPA 7196A SM 18-19 3500-Cr D EPA 245.2 EPA 7470A EPA 200.7 EPA 200.9 EPA 270.2 EPA 6010B EPA 7740 EPA 200.7 EPA 6010B SM 18-20 3111B Hydrogen Ion (pH) EPA 200.7 EPA 6010B EPA 200.7 Cyanic Carbon, Total

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All approved analytes are listed below:

Wastewater Miscellaneous

Silica, Dissolved EPA 200.7

EPA 6010B

Specific Conductance EPA 120.1

SM 18-20 2510B

Sulfide (as S)

EPA 376.2

Surfactant (MBAS)

EPA 425.1

Temperature

EPA 170.1

Total Recoverable Petroleum Hydrocarb EPA 418.1

Sample Preparation Methods

EPA 200.2 EPA 3510C EPA 9030B EPA 5030B EPA 3010A EPA 3020A EPA 3005A

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All approved subcategories and/or analytes are listed below:

Bacteriology

E. coli (Enumeration)

Colilert

SM 18-20 9221B

Wastewater Metals I

Strontium, Total

EPA 200.7

Wastewater Miscellaneous

Total Recoverable Petroleum Hydrocarb EPA 1664A

Sample Preparation Methods

EPA 200.2 EPA 3510C EPA 9030B EPA 5030B EPA 3010A EPA 3020A **EPA 3005A**

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	Acrylates		Benzidines	
ì	Acrolein (Propenal)	EPA 8260B	3,3'-Dimethylbenzidene	EPA 8270C
	Acrylonitrile	EPA 8260B	Benz idine	EPA 8270C
	Ethyl methacrylate	EPA 826 0B	Carbamate Pesticides	
ĺ	Methyl acrylonitrile	EPA 8260B	Aldicarb	EPA 8318
•	Methyl methacrylate	EPA 8260B	Aldicarb Sulfone	EPA 8318
	Amines		Carbofuran	EPA 8318
j	1,2-Diphenylhydrazine	EPA 8270C	Characteristic Testing	
	1,4-Phenylenediamine	EPA 8270C	•	EPA 1110
	1-Naphthylamine	EPA 8270C	Corrosivity Ignitability	EPA 1010
	2-Naphthylamine	EPA 8270C	Reactivity	SW-846 Ch7, Sec. 7.3
•	2-Nitroaniline	EPA 8270C	Reactivity	044-040 OH7, 000. 7.0
	3-Nitroaniline	EPA 8270C	Chlorinated Hydrocarbon Pestic	ides
	4-Chloroaniline	EPA 82 70C	4,4'-DDD	EPA 8081A
ı	4-Nitroaniline	EPA 8270C	4,4'-DDE	EPA 8081A
	5-Nitro-o-toluidine	EPA 8270C	4,4'-DDT	EPA 8081A
	Anili ne	EPA 8270C	Aldrin	EPA 8081A
İ	Carbazole	EPA 8270C	alpha-BHC	EPA 8081A
	Diphenylami ne	EPA 8270C	alpha-Chiordane	EPA 8081A
	Methapyriline	EPA 82 70 C	beta-BHC	EPA 8081A
•	Pronam ide	EPA 8270C	Chlordane Total	EPA 8081A
•	Benzidines		Chlorobenzilate	EPA 8270C
	3,3' -Dichlorobenzidine	EPA 8270C	delta-BHC	EPA 8081A

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Chlorinated Hydrocarbon Pestick	des	Chlorinated Hydrocarbons	
Diallate	EPA 8270C	Hexachloroethane	EPA 8270C
Dieldrin	EPA 8081A	Hexachlorophene	EPA 8270C
Endosulfan I	EPA 8081A	Hexachloropropene	EPA 8270C
Endosulfan II	EPA 8081A	Pentachlorobenzene	EPA 8270C
Endosulfan sulfate	EPA 8081A	Chlorophenoxy Acid Pesticides	
Endrin	EPA 8081A	· ·	EPA 8151A
Endrin aldehyde	EPA 8081A	2,4,5-T	EPA 8151A
Endrin Ketone	EPA 8081A	2,4,5-TP (Silvex)	EPA 8151A
gamma-Chlordane	EPA 8081A	2,4-D	
Heptachlor	EPA 8081A	Dalapon	EPA 8151A
Heptachlor epoxide	EPA 8081A	Dicamba	EPA 8151A
Linda ne	EPA 8081A	Dinoseb	EPA 8151A
Methoxychlor	EPA 8081A	MCPP	EPA 8151A
Pentachloronitrobenzene	EPA 8270C	Haloethers	
Toxaphene	EPA 8081A	4-Bromophenylphenyl ether	EPA 8270C
		4-Chlorophenylphenyl ether	EPA 8270C
Chlorinated Hydrocarbons		Bis (2-chloroisopropyl) ether	EPA 8270C
1,2,4,5-Tetrachlorobenzene	EPA 8270C	Bis(2-chloroethoxy)methane	EPA 8270C
1,2,4-Trichlorobenzene	EPA 8270C	Bis(2-chloroethyl)ether	EPA 8270C
2-Chloronaphthalene	EPA 8270C	Dista dinordanji yantar	
Hexachlorobenzene	EPA 8270C	Meta ls I	
Hexachlorobutadiene	EPA 8270C	Barium, Total	EPA 6010B
Hexachlorocyclopentadiene	EPA 8270C	Cadmium, Total	EPA 6010B

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Metals I		Metals II	
Calcium, Total	EPA 6010B	Chromium VI	EPA 7196A
Chromium, Total	EPA 6010B	Lithium, Total	EPA 6010B
Copper, Total	EPA 6010B	Mercury, Total	EPA 7471A
	EPA 7210	Selenium, Total	EPA 6010B
Iron, Total	EPA 6010B		EPA 7740
	EPA 7380	Vanadium, Total	EPA 6010B
Lead, Total	EPA 6010B	Zinc, Total	EPA 6010B
Magnesium, Total	EPA 6010B		EPA 7950
Manganese, Total	EPA 6010B	Metals III	
-	EPA 7460		EPA 6010B
Nickel, Total	EPA 6010B	Cobalt, Total	EPA 6010B
Potassium, Total	EPA 6010B	Molybdenum, Total	EPA 6010B
·	EPA 7610	Silica, Dissolved	EPA 6010B
Silver, Total	EPA 6010B	Thallium, Total	EPA 7841
•	EPA 7760A	mann man . a a	EPA 6010B
Sodium, Total	EPA 6010B	Tin, Total	EPA 6010B
	EPA 7770	Titanium, Total	EFA 0010B
na Anla W		Minerals	
Metals II		Chloride	EPA 9253
Aluminum, Total	EPA 6010B	Fluoride, Total	EPA 9214
Antimony, Total	EPA 6010B	Sulfate (as SO4)	EPA 9038
Arsenic, Total	EPA 6010B	•	
Beryllium, Total	EPA 6010B		

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. THOMAS TREUTLEIN ECOTEST LABORATORIES INC 377 SHEFFIELD AVENUE NORTH BABYLON, NY 11703 NY Lab Id No: 10320 EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved analytes are listed below:

Miscellaneous		Nítrosoamìnes	
Cyanide, Total	EPA 9012A	N-Nitrosodi-n-propylamine	EPA 8270C
Hydrogen Ion (pH)	EPA 9040B	N-Nitrosodiphenylamine	EPA 8270C
	EPA 9045C	N-nitrosomorpholine	EPA 8270C
Lead in Dust Wipes	EPA 6010B	N-nitrosopiperidine	EPA 8270C
Lead in Paint	SM 18-20 3111B	N-Nitrosopyrrolidine	EPA 8270C
	SM 18-20 3120B	Organophosphate Pesticides	
Oil & Grease Total Recoverable	EPA 9070	Azinphos methyl	EPA 8270C
	EPA 9071	Coumaphos	EPA 8270C
Phenols	EPA 9065	Demeton-O	EPA 8270C
Specific Conductance	EPA 9050	Demeton-S	EPA 8270C
Nitroaromatics and Isophorone		Diazinon	EPA 8270C
1,4-Naphthoquinone	EPA 8270C	Dichlorvos	EPA 8270C
2,4-Dinitrotoluene	EPA 8270C	Dimethoate	EPA 8270C
2,6-Dinitratalue ne	EPA 8270C	Disulfoton	EPA 8270C
4-Dimethylaminoazobenzene	EPA 8270C	EPN	EPA 8270C
Isophorone	EPA 8270C	Famphur	EPA 8270C
Nitrobenzene	EPA 8270C	Fensulfothion	EPA 8270C
Pyrid ine	EPA 8270C	Fenthion Fenthion	EPA 8270C
•		Malathion	EPA 8270C
Nitrosoamin es		Mevinphos	EPA 8270C
N-Nitrosodiethylami ne	EPA 8270C	NALED	EPA 8270C
N-Nitrosodimethylamine	EPA 827 0 C	Parathion ethyl	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C		

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Organophosphate Pesticides		Polychlorinated Biphenyls	
Parathion methyl	EPA 8270C	PCB-1254	EPA 8270C
Phorate	EPA 8270C	PCB-1260	EPA 8082
Sulfotepp	EPA 8270C		EPA 8270C
Thionazin	EPA 8270C	Polynuclear Aromatic Hydrocarbons	
Phthalate Esters		3-Methylcholanthrene	EPA 8270C
Benzyl butyl phthalate	EPA 8270C	7,12-Dimethylbenzyl (a) anthracene	EPA 8270C
Diethyl phthalate	EPA 8270C	Acenaphthene	EPA 8270C
Dimethyl phthalate	EPA 8270C	Acenaphthylene	EPA 8270C
Di-n-butyl phthalate	EPA 8270C	Anthracene	EPA 8270C
Di-n-octyl phthalate	EPA 8270C	Benzo(a)anthracene	EPA 8270C
Polychlorinated Biphenyls		Benzo(a)pyrene Benzo(b)fluoranthene	EPA 8270C EPA 8270C
PCB-1016	EPA 8082 EPA 8270C	Benzo(ghi)perylene Benzo(k)fluoranthene	EPA 8270C EPA 8270C
PCB-1221	EPA 8082	Chrysene	EPA 8270C
	EPA 8270C	Dibenzo(a,h)anthracene	EPA 8270C
PCB-1232	EPA 8082	Fluoranthene	EPA 8270C
	EPA 8270C	Fluorene	EPA 8270C
PCB-1242	EPA 8082	Indeno(1,2,3-cd)pyrene	EPA 8270C
	EPA 8270C	Naphthalen e	EPA 8270C
PCB-1248	EPA 8082	Phenanthre ne	EPA 8270C
	EPA 8270C	Pyrene	EPA 8270C
PCB-1254	EPA 8082	***	

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Priority Pollutant Phenols		Purgeable Aromatics	
2,3,4,6 Tetrachlorophenol	EPA 8270C	1,3-Dichlorobenzene	EPA 8021B
2,4,5-Trichlorophenol	EPA 8270C		EPA 8260B
2,4,6-Trichlorophenol	EPA 8270C	1,4-Dichlorobenzene	EPA 8021B
2,4-Dichlorophenol	EPA 8270C		EPA 8260B
2,4-Dimethylphenol	EPA 8270C	2-Chlorotoluene	EPA 8260B
2,4-Dinitrophenol	EPA 8270C	4-Chlorotoluene	EPA 8260B
2,6-Dichlorophenol	EPA 8270C	Benzen e	EPA 8021B
2-Chlorophenol	EPA 8270C		EPA 8260B
2-Methyl-4,6-dinitrophenol	EPA 8270C	Bromobenzene	EPA 8260B
2-Methylphenol	EPA 8270C	Chlorobenzene	EPA 8021B
2-Nitrophenol	EPA 8270C		EPA 8260B
3-Methylph enol	EPA 8270C	Ethyl benzene	EPA 8021B
4-Chloro-3-methylphenol	EPA 8270C		EPA 8260B
4-Methylphenol	EPA 8270C	Isopropylbenze ne	EPA 8260B
4-Nitrophenol	EPA 8270C	n-Butylbenzene	EPA 8260B
Pentachlorophenol	EPA 8270C	n-Propylbenzene	EPA 8260B
Phenol	EPA 8270C	p-Isopropyltoluene (P-Cymene)	EPA 8260B
B. II Assessables		sec-Butylbenzene	EPA 8260B
Purgeable Aromatics		Styrene	EPA 8260B
1,2,4-Trimethylbenzene	EPA 8260B	tert-Butylbenzene	EPA 8260B
1,2-Dichlorobenzene	EPA 8021B	Toluene	EPA 8021B
	EPA 8260B	10100110	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8260B	Total Xylen es	EPA 8021B

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Duranable Halocarbone

Purgeable Aromatics		Purgeable Halocarbons	
Total Xylenes	EPA 8260B	2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
Durantia lialagerhana		2-Chloroethylvinyl ether	EPA 8021B
Purgeable Halocarbons			EPA 8260B
1,1,1,2-Tetrachloroethane	EPA 8260B	3-Chloropropene (Allyl chloride)	EPA 8260B
1,1,1-Trichloroethane	EPA 8021B	Bromochloromethane	EPA 8260B
	EPA 8260B	Bromodichloromethane	EPA 8021B
1,1,2,2-Tetrachioroethane	EPA 8021B		EPA 8260B
	EPA 8260B	Bromoform	EPA 8021B
1,1,2-Trichloroethane	EPA 8021B	,	EPA 8260B
	EPA 826 0B	Bromomethane	EPA 8021B
1,1-Dichloroethane	EPA 8021B	2.0	EPA 8260B
	EPA 8260B	Carbon tetrachloride	EPA 8021B
1,1-Dichloroethene	EPA 8021B		EPA 8260B
	EPA 8260B	Chloroethane	EPA 8021B
1,1-Dichloropropene	EPA 8260B	Oisoroellare	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B	Chloroform	EPA 8021B
1,2-Dibromo-3-chloropropane	EPA 8260B		EPA 8260B
1,2-Dichloroethane	EPA 8021B	Chloromethane	EPA 8021B
	EPA 8260B		EPA 8260B
1,2-Dichloropropane	EPA 8021B	cis-1,2-Dichloroethene	EPA 8260B
	EPA 8260B	cis-1,3-Dichloropropene	EPA 8021B
1,3-Dichloropropane	EPA 8260B	cis-1,0-Dichioroproperie	EPA 8260B
2,2-Dichloropropane	EPA 8260B	cis-1,4-Dichloro-2-butene	EPA 8260B

Serial No.: 32259

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Purgeable Halocarbons		Purgeable Organics	
Dibromochloromethane	EPA 8021B	2-Hexanone	EPA 8260B
	EPA 8260B	Acetone	EPA 8260B
Dibromomethane	EPA 8260B	Acetonitrile	EPA 8260B
Dichlorodifluoromethane	EPA 8021B	Carbon Disulfide	EPA 8260B
	EPA 8260B	Ethyl Acetate	EPA 8260B
Methylene chloride	EPA 8021B	Ethylene Glycol	EPA 8015 B
	EPA 8260B	isobutyl alcohol	EPA 8260B
Tetrachloroethene	EPA 8021B	Methyl tert-butyl ether	EPA 826 0B
	EPA 8260B	o-Toluidine	EPA 8270C
trans-1,2-Dichloroethene	EPA 8260B	Propionitrile	EPA 8260B
trans-1,3-Dichloropropene	EPA 8021B	Vinyl acetate	EPA 8260B
	EPA 8260B	Semi-Volatile Organics	
trans-1,4-Dichloro-2-butene	EPA 8260B		~~
Trichioroethe ne	EPA 8021B	2-Methylnaphthalene	EPA 8270C
	EPA 8260B	4-Amino biphenyl	EPA 8270C
Trichlorofluoromethane	EPA 8021B	Acetophenone	EPA 8270C
	EPA 8260B	Benzolc Acid	EPA 8270C
Vinyl chloride	EPA 8021B	Benzyl alcohol	EPA 8270C
	EPA 8260B	Dibenzofuran	EPA 8270C
		Ethyl methanesulfonate	EPA 8270C
Purgeable Organics		Isosafro le	EPA 8270C
1,4-Dioxa ne	EPA 8260B	Methyl methanesulfonate	EPA 8270C
2-Butanone (Methylethyl ketone)	EPA 8260B	O,O,O-Triethyl phosphorothioate	EPA 8270C

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Semi-Volatile Organics

Phenacetin Safrole

EPA 8270C EPA 8270C

EPA 3585

EPA 3545 EPA 5035 **EPA 3020A EPA 5030B** Sample Esaparation Methods EPA 3050B EPA 3550B EPA 3580 EPA 9030B **EPA 3010A** EPA 1310 EPA 1311 **EPA 3550B** EPA 3580 EPA 3005A **EPA 3050B EPA 5035** FPA 3020A EPA 3545 FPA 5030R

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Metals I

EPA 7420 Lead, Total

Metals II

EPA 7041 Antimony, Total **EPA 7060A** Arsenic, Total

Phthalate Esters

EPA 8270C Bis(2-ethylhexyl) phthalate

Purgeable Organics

EPA 8260B 4-Methyl-2-Pentanone

Sample Preparation Methods

EPA 3010A EPA 1311 EPA 9030B EPA 1310 EPA 3550B EPA 3580 EPA 30508 EPA 3005A FPA 3020A EPA 3545 EPA 5035 FPA 5030R

Serial No.: 32260

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on sciences and participation in the Program. Consumers are urged to call (518) 485-5570 to

verify laboratory's accreditation status. EPA 5030B EPA 3020A EPA 3545

EPA 3580 **EPA 3550B** ₹3050B Page 1 of 1

EPA 5035

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Chlorinated Hydrocarbon Pesticides		Metals II	
4,4'-DDT	NIOSH 2, VOL. 3 S274	Beryllium, Total	40 CFR 61 1984 Method 104
Aldrin	NIOSH 4, VOL. 1 5502		NIOSH 7300
Chlordane Total	NYS DOH APC-34	Mercury, Total	EPA 245.2
Dieldrin	NIOSH 2, VOL. 3 S283	Metals III	
	NYS DOH APC-34		NIOCH 7200
End rin	NIOSH 2, VOL. 6 S284	Chromium, Total	NIOSH 7300
Heptachlor	NIOSH 2, VOL. 5 S287	Mineral	
Lindane	NIOSH 4, VOL. 1 5502	Fluoride, Total	EPA 340.2
Toxaphene	NIOSH 2, VOL. 2 S67	Nitrate (as N)	EPA 353.2
Chlorinated Hydrocarbons		Sulfate (as SO4)	EPA 375.4
1,2,4-Trichlorobenzene	EPA TO-15	Polychlorinated Biphenyls	
	NIOSH 2, VOL. 2 S133	PCB-1016	EPA, 1980
	NIOSH 5517		NIOSH 5503
Hexachlorobutadiene	EPA TO-15		NYS DOH 311-1
	NIOSH 2, VOL. 5 307	PCB-1221	EPA, 1980
	NIOSH 2543		NIOSH 5 503
Hexachloroethane	EPA TO-15		NYS DOH 311-1
	NIOSH 1003	PCB-1232	EPA, 1980
	NIOSH 2, VOL. 2 S101		NIOSH 5503
Metals I			NYS DOH 311-1
	EDA 220 4	PCB-1242	EPA, 1980
Lead, Total	EPA 239.1		NIOSH 5503

Serial No.: 32261



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	Polychlorinated Biphenyis		Purgeable Aromatics	
İ	PCB-1242	NYS DOH 311-1	1,2,4-Trimethylbenzene	EPA TO-14A
	PCB-1248	EPA, 1980		EPA TO-15
		NIOSH 5503	1,2-Dichlorobenzene	EPA TO-14A
	-	NYS DOH 311-1		EPA TO-15
ı	PCB-1254	EPA, 1980		NIOSH 1003
		NIOSH 5503		NIOSH 2, VOL.3 S135
		NYS DOH 311-1	1,3,5-Trimethylbenzene	EPA TO-14A
1	PCB-1260	EPA, 1980		EPA TO-15
		NIOSH 5503	1,3-Dichlorobenzene	EPA TO-14A
		NYS DOH 311-1	1,4-Dichlorobenzene	EPA TO-14A
ŀ				EPA TO-15
	Polynuclear Aromatics			NIOSH 1003
	Benzo(a)pyrene	EPA TO-14A		NIOSH 2, VOL. 3 S281
		NIOSH 5515	Benze ne	EPA TO-14A
l	Naphthalen e	EPA TO-14A		EPA TO-15
		EPA TO-15		NIOSH 1501
		NIOSH 1501		NIOSH 2, VOL. 1 127
1	Priority Pollutant Phenois		Chlorobenzene	EPA TO-14A
	2-Chlorophenol	EPA 625		EPA TO-15
	Pentachlorophenol	EPA 625		NIOSH 1003
1	Phenol	EPA 625		NIOSH 2, VOL. 2 S133
	Horror		Ethyl benzene	EPA TO-14A
				EPA TO-15

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All approved analytes are listed below:

Purgeable Halocarbons

Lat Aganie Vi ottigeres		, m. Rompio i imicomi porto	
Ethyl benzene	NIOSH 1501	1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-15
	NIOSH 2, VOL 2 S29	1,1-Dichloroethane	EPA TO-14A
Styrene	EPA TO-14A		EPA TO-15
	EPA TO-15		NIOSH 1003
Toluene	EPA TO-14A		NIOSH 2, VOL. 2 S123
	EPA TO-15	1,1-Dichloroethene	EPA TO-14A
	NIOSH 1501		EPA TO-15
	NIOSH 2, VOL. 1 127		NIOSH 1003
Total Xylenes	EPA TO-14A	•	NIOSH 2, VOL. 2 S110
·	EPA TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	EPA TO-14A
	NIOSH 1501		EPA TO-15
	NIOSH 2, VOL., 1 127	1,2-Dichloroethane	EPA TO-14A
			EPA TO-15
Purgeable Halocarbons			NIOSH 1003
1,1,1-Trichloroethane	EPA TO-14A		NIOSH 2, VOL. 2 S123
	EPA TO-15	1,2-Dichloropropa ne	EPA TO-14A
1,1,2,2-Tetrachloroethane	EPA TO-14A		EPA TO-15
	EPA TO-15		NIOSH 1003
	NIOSH 1019		NIOSH 2, VOL. 6 321
	NIOSH 2, VOL. 2 S124	Bromodichloromethane	EPA TO-14A
1,1,2-Trichloroethane	EPA TO-14A		EPA TO-15
	EPA TO-15	Bromoform	EPA TO-15
1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-14A	Bromomethane	EPA TO-14A

Serial No.: 32261

Purgeable Aromatics



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All approved analytes are listed below:

Purgeable Halocarbons		Purgeable Halocarbons	
Bromomethane	EPA TO-15	Tetrachioroethene	NIOSH 1003
Carbon tetrachloride	EPA TO-14A		NIOSH 2, VOL. 1 127
	EPA TO-15	trans-1,2-Dichloroethene	EPA TO-14A
	NIOSH 1003		EPA TO-15
	NIOSH 2, VOL. 1 127	trans-1,3-Dichloropropene	EPA TO-14A
Chloroetha ne	EPA TO-14A		EPA TO-15
	EPA TO-15	Trichloroeth ene	EPA TO-14A
Chloroform	EPA TO-14A		EPA TO-15
	EPA TO-15	Trichlorofluoromethane	EPA TO-14A
	NIOSH 1003		EPA TO-15
	NIOSH 2, VOL. 1 127	Vinyl bromide	EPA TO-15
Chloromethane	EPA TO-14A	Vinyl chloride	40 CFR, PART 61 1984 APP. B METH 1
	EPA TO-15		ÉPA TO-14A
cis-1,2-Dichloroethene	EPA TO-14A		EPA TO-15
	EPA TO-15		NIOSH 1007
Dichlorodifluoromethane	EPA TO-14A	Volatile Chiorinated Organics	
	EPA TO-15	Benzyl chloride	EPA TO-14A
Methylene chloride	EPA TO-14A	benzyi chionae	EPA TO-15
	EPA TO-15	Epichloroh ydrin	EPA TO-15
	NIOSH 1003	Epichiolonydrin	E A 10-10
	NIOSH 2, VOL. 1 127	Volatile Organics	
Tetrachloroethene	EPA TO-14Å	1,3-Butadiene	EPA TO-14A
	EPA TO-15		EPA TO-15

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All approved analytes are listed below:

Volatile Organics

2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15
Hexane	EPA TO-15
Methyl iodide	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
Vinyl acetate	EPA TO-15

Serial No.: 32261



Antonia C. Novello, M.D., M.P.H., Dr.P.H.



Expires 12:01 AM April 01, 2007 Issued April 01, 2006 Revised October 31, 2006

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Acrylates		Amines	
Acrolein (Propenal)	EPA 624	Pyridine	EPA 8270C
	EPA 8260B	Bacteriology	
Acrylonitrile	EPA 624	Coliform, fecal	SM 18-20 9221E
	EPA 8260B	Coliform, Total	SM 18-20 9221B
Ethyl methacrylate	EPA 8260B	Standard Plate Count	SM 18 9215B
Methyl acrylonitrile	EPA 8260B		
Methyl methacrylate	EPA 8260B	Benzidines	
Amines		3,3' -Dichlorobenzidine	EPA 625
	EPA 8270C	3,3'-Dimethylbenzidene	EPA 8270C
1,4-Phenylenediamine		Benzidine	EPA 625
1-Naphthylamine	EPA 8270C	Carbamate Pesticides	
2-Naphthylamine	EPA 8270C	Aldicarb	EPA 8318
2-Nitroaniline	EPA 8270C		
3-Nitroaniline	EPA 8270C	Aldicarb Sulfone	EPA 8318
4-Chloroaniline	EPA 8270C	Carbofuran	EPA 8318
4-Nitroaniline	EPA 8270C	Chlorinated Hydrocarbon Pestic	ides
5-Nitro-o-toluidine	EPA 8270C	4,4'-DDD	EPA 608
Aniline	EPA 8270C		EPA 8081A
Carbazole	EPA 8270C	4,4'-DDE	EPA 608
Diphenylamine	EPA 8270C		EPA 8081A
Methapyriline	EPA 8270C	4,4'-DDT	EPA 608
Pronamide	EPA 8270C		EPA 8081A
Propionitrile	EPA 8260B	Aldrin	EPA 608
Pyridine	EPA 8260B		

Serial No.: 31091



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MR. THOMAS TREUTLEIN ECOTEST LABORATORIES INC 377 SHEFFIELD AVENUE NORTH BABYLON, NY 11703 NY Lab Id No: 10320 EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

lcides	Chlorinated Hydrocarbon Pestici	des
EPA 8081A	gamma-Chlordane	EPA 8081A
EPA 608	Heptachior	EPA 608
EPA 8081A		EPA 8081A
EPA 8081A	Heptachlor epoxide	EPA 608
EPA 608		EPA 8081A
EPA 8081A	Lindane	EPA 608
EPA 608		EPA 8081A
EPA 8081A	Methoxychlor	EPA 608
EPA 608		EPA 8081A
EPA 8081A	Mirex	SM 18-20 6630B
EPA 608	Toxaphene	EPA 608
EPA 8081A		EPA 8081A
EPA 608	Chlorinated Hydrocarhons	
EPA 8081A	•	EPA 8270C
EPA 608	, , , , , , , , , , , , , , , , , , , ,	EPA 625
EPA 8081A	1,2,4-Themorocomzone	EPA 8270C
EPA 608	1-Chioronaphthaiene	EPA 8270C
EPA 8081A	•	EPA 625
EPA 608	2-omoronapharations	EPA 8270C
EPA 8081A	Hexachlorobenzene	EPA 625
EPA 608	, including of the control of the co	EPA 8270C
EPA 8081A	Hexachlorobutadiene	EPA 625
EPA 8081A		EPA 8270C
	EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608 EPA 8081A EPA 608	EPA 8081A gamma-Chlordane EPA 608 Heptachlor EPA 8081A Heptachlor epoxide EPA 608 EPA 8081A EPA 608 Lindane EPA 608 EPA 8081A EPA 608 Methoxychlor EPA 608 Toxaphene EPA 8081A Mirex EPA 608 Toxaphene EPA 8081A 1,2,4,5-Tetrachlorobenzene EPA 8081A 1,2,4-Trichlorobenzene EPA 8081A 1-Chloronaphthalene EPA 8081A 2-Chloronaphthalene EPA 8081A Hexachlorobenzene EPA 8081A Hexachlorobenzene

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	Chlorinated Hydrocarbons		Demand	
	Hexachlorocyclopentadiene	EPA 625	Chemical Oxygen Demand	EPA 410.4
		EPA 8270C	Fuel Oxygenates	
	Hexachloroethane	EPA 625	Ethanol	EPA 8015 B
i i		EPA 8270C		EPA 8260B
	Hexachloropropene	EPA 8270C	Methyl tert-butyl ether	EPA 8021B
	Pentachlorobenzene	EPA 8270C	meany terr sugressions.	EPA 8260B
	Chlorophenoxy Acid Pesticides		t-Butyl alcohol	EPA 8015 B
	2,4,5-₹	EPA 1978, p.115		EPA 8260B
		EPA 8151A	Haloethers	
	2,4,5-TP (Silvex)	EPA 1978, p.115	4-Bromophenylphenyl ether	EPA 625
		EPA 8151A	4-Biotriophenyiphenyi etilel	EPA 8270C
		SM 18-20 6640B	4-Chlorophenylphenyl ether	EPA 625
	2,4-D	EPA 1978, p.115	4 Chickophony, phony i date.	EPA 8270C
		EPA 8151A	Bis (2-chloroisopropyl) ether	EPA 625
		SM 18-20 6640B	Dio (2 dinaratori opinopi), dinar	EPA 8270C
	Dalapon	EPA 8151A	Bis(2-chloroethoxy)methane	EPA 625
	Dicamba	EPA 1978, p.115	200(2 000000000000000000000000000000000	EPA 8270C
		EPA 8151A	Bis(2-chloroethyl)ether	EPA 625
	Dinoseb	EPA 8151A		EPA 8270C
	Demand		Microextractables	
1.1 188	Biochemical Oxygen Demand	EPA 405.1	1,2-Dibromo-3-chloropropane	EPA 8011
	Carbonaceous BOD	SM 18-20 5210B	1,2-Dibromoethane	EPA 8011

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	Mineral		Nitrosoamines	
ų.	Acidity	EPA 305.1	N-Nitrosodimethylamine	EPA 8270C
	Alkalinity	SM 18-20 2320B	N-Nitrosodi-n-butylamine	EPA 8270C
	Calcium Hardness	EPA 200.7	N-Nitrosodi-n-propylamine	EPA 625
i	Chloride	SM 18-20 4500-CI B		EPA 8270C
	Fluoride, Total	SM 18-20 4500-F C	N-Nitrosodiphenylamine	EPA 625
	Hardness, Total	EPA 200.7		EPA 8270C
	Sulfate (as SO4)	EPA 375.4	N-nitrosopiperidine	EPA 8270C
	Nitroaromatics and Isophorone		N-Nitrosopyrrolidine	EPA 8270C
	1,3,5-Trinitrobenzene	EPA 8270C	Nutrient	
	1,3-Dinitrobenzene	EPA 8270C	Ammonia (as N)	EPA 350.2
	1,4-Naphthoquinone	EPA 8270C		EPA 350.3
	2,4-Dinitrotoluene	EPA 625	Kjeldahl Nitrogen, Total	EPA 351.3
		EPA 8270C	Nitrate (as N)	EPA 353.2
	2,6-Dinitrotoluene	EPA 625	Nitrite (as N)	EPA 354.1
		EPA 8270C	Orthophosphate (as P)	EPA 365.3
ď	Isophorone	EPA 625	Phosphorus, Total	EPA 365.2
		EPA 8270C		EPA 365.3
	Nitrobenzene	EPA 625	Organophosphate Pesticides	
		EPA 8270C	Azinphos methyl	EPA 8270C
	Nitrosoamines		Demeton-O	EPA 8270C
	N-Nitrosodiethylamine	EPA 8270C	Demeton-S	EPA 8270C
İ	N-Nitrosodimethylamine	EPA 625	Diazinon	EPA 8270C

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	Organophosphate Pesticides		Polychlorinated Biphenyls	
_	Dimethoate	EPA 8270C	PCB-1016	EPA 8082
•	Disulfoton	EPA 8270C		EPA 8270C
	Famphur	EPA 8270C	PCB-1221	EPA 608
ن	Malathion	EPA 8270C		EPA 8082
-	Parathion ethyl	EPA 8270C		EPA 8270C
	Parathion methyl	EPA 8270C	PCB-1232	EPA 608
	Phorate	EPA 8270C		EPA 8082
-	Phthalate Esters			EPA 8270C
	Benzyl butyl phthalate	EPA 625	PCB-1242	EPA 608
	benzyi butyi pinnalate	EPA 8270C		EPA 8082
-	Bis(2-ethylhexyl) phthalate	EPA 625		EPA 8270C
	Dis(2-enrymexy)) photoatate	EPA 8270C	PCB-1248	EPA 608
	Diethyl phthalate	EPA 625		EPA 8082
	Dietry: pittialate	EPA 8270C		EPA 8270C
-	Dimethyl phthalate	EPA 625	PCB-1254	EPA 608
_	Dimetry: printidate	EPA 8270C		EPA 8082
_	Di-n-butyl phthalate	EPA 625		EPA 8270C
		EPA 8270C	PCB-1260	EPA 608
ف	Di-n-octyl phthalate	EPA 625		EPA 8082
_	2.1.20,	EPA 8270C		EPA 8270C
	Debecklerings of Dishers f		Polynuclear Aromatics	
	Polychlorinated Biphenyls	EDA 609	3-Methylcholanthrene	EPA 8270C
-	PCB-1016	EPA 608	7,12-Dimethylbenzyl (a) anthracene	EPA 8270C

Serial No.: 31091



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All approved analytes are listed below:

Polynuclear Aromatics		Polynuclear Aromatics	
Acenaphthene	EPA 625	Fluorene	EPA 8270C
	EPA 8270C	Indeno(1,2,3-cd)pyrene	EPA 625
Acenaphthylene	EPA 625		EPA 8270C
	EPA 8270C	Naphthalene	EPA 625
Anthracene	EPA 625		EPA 8270C
	EPA 8270C	Phenanthrene	EPA 625
Benzo(a)anthracene	EPA 625		EPA 8270C
	EPA 8270C	Pyrene	EPA 625
Benzo(a)pyrene	EPA 625		EPA 8270C
	EPA 8270C	Priority Pollutant Phenols	
Benzo(b)fluoranthene	EPA 625	2,3,4,6 Tetrachlorophenol	EPA 8270C
	EPA 8270C	2,4,5-Trichlorophenol	EPA 625
Benzo(ghi)perylene	EPA 625	2, ,,,,	EPA 8270C
	EPA 8270C	2,4,6-Trichlorophenol	EPA 625
Benzo(k)fluoranthene	EPA 625	- , , , , , , , , , , , , , , , , , , ,	EPA 8270C
	EPA 8270C	2,4-Dichlorophenol	EPA 625
Chrysene	EPA 625	•	EPA 8270C
	EPA 8270C	2,4-Dimethylphenol	EPA 625
Dibenzo(a,h)anthracene	EPA 625		EPA 8270C
	EPA 8270C	2,4-Dinitrophenol	EPA 625
Fluoranthene	EPA 625		EPA 8270C
	EPA 8270C	2,6-Dichlorophenol	EPA 8270C
Fluorene	EPA 625	2-Chlorophenol	EPA 625

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All approved analytes are listed below:

Priority Pollutant Phenols		Purgeable Aromatics	
2-Chlorophenol	EPA 8270C	1,2-Dichlorobenzene	EPA 8260B
2-Methyl-4,6-dinitrophenol	EPA 625		EPA 8270C
	EPA 8270C	1,3-Dichlorobenzene	EPA 601
2-Methylphenol	EPA 8270C		EPA 602
2-Nitrophenol	EPA 625		EPA 624
	EPA 8270C		EPA 625
3-Methylphenol	EPA 8270C		EPA 8021B
4-Chloro-3-methylphenol	EPA 625		EPA 8260B
	EPA 8270C		EPA 8270C
4-Methylphenol	EPA 8270C	1,4-Dichlorobenzene	EPA 601
4-Nitrophenol	EPA 625		EPA 602
	EPA 8270C		EPA 624
Cresols, Total	EPA 8270C		EPA 625
Pentachlorophenol	EPA 625		EPA 8021B
	EPA 8270C		EPA 8260B
Phenol	EPA 625		EPA 8270C
	EPA 8270C	Benzene	EPA 602
Purgeable Aromatics			EPA 624
1,2-Dichlorobenzene	EPA 601		EPA 8021B
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	EPA 602	Chlorobenzene	EPA 8260B
	EPA 624		EPA 602
	EPA 625		EPA 624
	EPA 8021B		EPA 8021B

Serial No.: 31091



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Purgeable Aromatics		Purgeable Halocarbons	
Chlorobenzene	EPA 8260B	1,1,2,2-Tetrachloroethane	EPA 601
	SM 20 6200C		EPA 624
Ethyl benzene	EPA 602		EPA 8021B
	EPA 624		EPA 8260B
	EPA 8021B	1,1,2-Trichloroethane	EPA 601
	EPA 8260B		EPA 624
Styrene	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
Toluene	EPA 602	1,1-Dichloroethane	EPA 601
	EPA 624		EPA 624
	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
Total Xylenes	EPA 602	1,1-Dichloroethene	EPA 601
	EPA 624		EPA 624
	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
Purgeable Halocarbons		1,1-Dichloropropene	EPA 8021B
1,1,1,2-Tetrachloroethane	EPA 8021B		EPA 8260B
1, 1, 1, 1, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	EPA 8260B	1,2,3-Trichloropropane	EPA 8021B
1,1,1-Trichloroethane	EPA 601		EPA 8260B
1, 1, 1	EPA 624	1,2-Dichloroethane	EPA 601
	EPA 8021B		EPA 624
	EPA 8260B		EPA 8021B

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All approved analytes are listed below:

Purgeable Halocarbons		Purgeable Halocarbons	
1,2-Dichloroethane	EPA 8260B	Bromomethane	EPA 8260B
1,2-Dichloropropane	EPA 601	Carbon tetrachloride	EPA 601
	EPA 624		EPA 624
	EPA 8021B		EPA 8260B
	EPA 8260B	Chloroethane	EPA 601
1,3-Dichloropropane	EPA 8260B		EPA 624
2,2-Dichloropropane	EPA 8260B		EPA 8021B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B		EPA 8260B
2-Chloroethylvinyl ether	EPA 601	Chloroform	EPA 601
	EPA 8021B		EPA 624
	EPA 8260B		EPA 8021B
3-Chloropropene (Allyl chloride)	EPA 8260B		EPA 8260B
Bromodichloromethane	EPA 601	Chloromethane	EPA 601
	EPA 624		EPA 624
	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
Bromoform	EPA 601	cis-1,3-Dichloropropene	EPA 601
	EPA 624		EPA 624
	EPA 8021B		EPA 8021B
	EPA 8260B		EPA 8260B
Bromomethane	EPA 601	cis-1,4-Dichloro-2-butene	EPA 8260B
	EPA 624	Dibromochloromethane	EPA 601
	EPA 8021B		EPA 624

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All approved analytes are listed below:

Purgeable Halocarbons		Purgeable Halocarbons	
Dibromochloromethane	EPA 8021B	Trichloroethene	EPA 601
	EPA 8260B		EPA 624
Dibromomethane	EPA 8260B		EPA 8021B
Dichlorodifluoromethane	EPA 601		EPA 8260B
	EPA 8021B	Trichlorofluoromethane	EPA 601
	EPA 8260B		EPA 624
Methylene chloride	EPA 601		EPA 8021B
	EPA 624		EPA 8260B
	EPA 8021B	Vinyl chloride	EPA 601
	EPA 8260B		EPA 624
Tetrachloroethene	EPA 601		EPA 8021B
	EPA 624		EPA 8260B
	EPA 8021B	Purgeable Organics	
	EPA 8260B	1,4-Dioxane	EPA 8260B
trans-1,2-Dichloroethene	EPA 601	2-Butanone (Methylethyl ketone)	EPA 8260B
	EPA 624	2-Hexanone	EPA 8260B
	EPA 8021B	4-Methyl-2-Pentanone	EPA 8260B
	EPA 8260B	Acetone	EPA 8260B
trans-1,3-Dichloropropene	EPA 601	Acetonitrile	EPA 8260B
	EPA 624	Carbon Disulfide	EPA 8260B
	EPA 8021B	Isobutyl alcohol	EPA 8260B
	EPA 8260B	Methyl iodide	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B	o-Toluidine	EPA 8260B
		0-10ididille	EFA 0200B

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All approved analytes are listed below:

	Purgeable Organics		Wastewater Metals I	
1	Vinyl acetate	EPA 8260B	Barium, Total	EPA 3010A
	Residue			EPA 6010B
	Solids, Total	EPA 160.3	Cadmium, Total	EPA 200.7
i	Solids, Total Dissolved	EPA 160.1		EPA 200.9
	Solids, Total Suspended	EPA 160.2		EPA 3005A
	. ,			EPA 3010A
1	Semi-Volatile Organics			EPA 6010B
	2-Methylnaphthalene	EPA 8270C		EPA 7131A
	4-Amino biphenyl	EPA 8270C	Calcium, Total	EPA 200.7
4	Acetophenone	EPA 8270C		EPA 3005A
	Benzoic Acid	EPA 8270C		EPA 3010A
	Benzyl alcohol	EPA 8270C		EPA 6010B
	Dibenzofuran	EPA 8270C	Chromium, Total	EPA 200.7
	Ethyl methanesulfonate	EPA 8270C	·	EPA 200.9
	Isosafrole	EPA 8270C		EPA 218.1
_	Methyl methanesulfonate	EPA 8270C		EPA 3005A
	O,O,O-Triethyl phosphorothioate	EPA 8270C		EPA 3010A
	p-Dimethylaminoazobenzene	EPA 8270C		EPA 3020A
	Phenacetin	EPA 8270C		EPA 6010B
•	Safrole	EPA 8270C		EPA 7190
	Wastewater Metals I		Copper, Total	EPA 200.7
	Barium, Total	EPA 200.7		EPA 220.1
		EPA 3005A		EPA 3005A

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Wastewater Metals I		Wastewater Metals I	
Copper, Total	EPA 3010A	Manganese, Total	EPA 3010A
	EPA 6010B		EPA 6010B
Iron, Total	EPA 200.7		SM 18-20 3111B
	EPA 236.1	Nickel, Total	EPA 200.7
	EPA 3005A		EPA 249.1
	EPA 3010A		EPA 3005A
	EPA 6010B		EPA 3010A
Lead, Total	EPA 200.7		EPA 3020A
	EPA 239.1		EPA 6010B
	EPA 239.2		EPA 7520
	EPA 3005A	Potassium, Total	EPA 200.7
	EPA 3010A		EPA 258.1
	EPA 3020A		EPA 3005A
	EPA 6010B		EPA 3010A
	EPA 7420		EPA 6010B
	EPA 7421	Silver, Total	EPA 200.7
Magnesium, Total	EPA 200.7		EPA 3005A
	EPA 242.1		EPA 6010B
	EPA 3005A		EPA 7760A
	EPA 3010A		SM 18-19 3113B
	EPA 6010B	Sodium, Total	EPA 200.7
Manganese, Total	EPA 200.7		EPA 3005A
	EPA 3005A		EPA 3010A

Serial No.: 31091



Antonia C. Novello, M.D., M.P.H., Dr.P.H.



Expires 12:01 AM April 01, 2007 Issued April 01, 2006 Revised October 31, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. THOMAS TREUTLEIN ECOTEST LABORATORIES INC 377 SHEFFIELD AVENUE NORTH BABYLON, NY 11703 NY Lab Id No: 10320 EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

	Wastewater Metals II	
EPA 6010B	Beryllium, Total	EPA 6010B
SM 18-20 3111B	Chromium VI	EPA 7196A
EPA 6010B		SM 18-19 3500-Cr D
	Mercury, Total	EPA 245.2
ED4 000 7		EPA 7470A
	Selenium, Total	EPA 200.7
EPA 3005A		EPA 200.9
EPA 3010A		
EPA 6010B		EPA 270.2
EPA 200.7		EPA 3005A
FPA 200 9		EPA 3010A
		EPA 6010B
		EPA 7740
	Vanadium, Total	EPA 200.7
EPA 7041	,, ,	EPA 6010B
EPA 200.7	770 - 77 - 4 - 1	
EPA 200.9	Zinc, Total	EPA 200.7
EPA 3005A		EPA 6010B
EPA 3010A		SM 18-20 3111B
EPA 6010B	Wastewater Metals III	
EPA 200.7	Cobalt, Total	EPA 200.7
EPA 200.9		EPA 6010B
EPA 3005A	Gold, Total	EPA 231.1
EPA 3010A	Molybdenum, Total	EPA 200.7
EPA 3020A		EPA 6010B
	SM 18-20 3111B EPA 6010B EPA 200.7 EPA 3005A EPA 3010A EPA 6010B EPA 200.9 EPA 3005A EPA 6010B EPA 7041 EPA 200.7 EPA 200.9 EPA 3005A EPA 3010A EPA 6010B EPA 3010A EPA 6010B EPA 3010A	EPA 6010B SM 18-20 3111B Chromium VI EPA 6010B Mercury, Total EPA 200.7 EPA 3005A EPA 3010A EPA 6010B EPA 200.7 EPA 200.9 EPA 3005A EPA 200.7 EPA 200.9 EPA 3005A EPA 3010A EPA 6010B Wanadium, Total EPA 200.7 EPA 200.9 EPA 3005A EPA 3010A EPA 6010B Wastewater Metals III EPA 200.7 EPA 200.9 EPA 3005A EPA 3010A Gold, Total EPA 3010A Molybdenum, Total

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Wastewater Metals III		Wastewater Miscellaneous	
Palladium, Total	EPA 253.2	Phenois	EPA 420.1
	EPA 255.2	Silica, Dissolved	EPA 200.7
Thallium, Total	EPA 200.7		EPA 6010B
	EPA 200.9	Specific Conductance	EPA 120.1
	EPA 3005A		SM 18-20 2510B
	EPA 3010A	Sulfide (as S)	EPA 376.2
	EPA 3020A		EPA 9030B
Tin, Total	EPA 200.7	Surfactant (MBAS)	EPA 425.1
	EPA 6010B	Temperature	EPA 170.1
Titanium, Total	EPA 200.7	Total Recoverable Petroleum Hydrocarb EPA 418.1	
	EPA 6010B		
Wastewater Miscellaneous			
Boron, Total	EPA 200.7		
	EPA 6010B		
Bromide	EPA 320.1		
Color	SM 18-20 2120B		
Cyanide, Total	EPA 335.3		
	EPA 9012A		
Hydrogen Ion (pH)	EPA 150.1		
	EPA 9040B		
Oil & Grease Total Recoverable	EPA 1664A		
	EPA 413.1		

Serial No.: 31091

Organic Carbon, Total

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

EPA 415.1



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Acrylates		Benzidines	
Acrolein (Propenal)	EPA 8260B	3,3'-Dimethylbenzidene	EPA 8270C
Acrylonitrile Acrylonitrile	EPA 8260B	Benzidine	EPA 8270C
Ethyl methacrylate	EPA 8260B	Carbamate Pesticides	
Methyl acrylonitrile	EPA 8260B	Aldicarb	EPA 8318
Methyl methacrylate	EPA 8260B	Aldicarb Sulfone	EPA 8318
Amines		Carbofuran	EPA 8318
1,2-Diphenylhydrazine	EPA 8270C	Characteristic Testing	
1,4-Phenylenediamine	EPA 8270C	Corrosivity	EPA 1110
1-Naphthylamine	EPA 8270C	E.P. Toxicity	EPA 1310
2-Naphthylamine	EPA 8270C	Ignitability	EPA 1010
2-Nitroaniline	EPA 8270C	Reactivity	SW-846 Ch7, Sec. 7.3
3-Nitroaniline	EPA 8270C	TCLP	EPA 1311
4-Chloroaniline	EPA 8270C	1021	2.71.071
4-Nitroaniline	EPA 8270C	Chlorinated Hydrocarbon Pestion	cides
5-Nitro-o-toluidine	EPA 8270C	4,4'-DDD	EPA 8081A
■ Aniline	EPA 8270C	4,4'-DDE	EPA 8081A
Carbazole	EPA 8270C	4,4'-DDT	EPA 8081A
Diphenylamine	EPA 8270C	Aldrin	EPA 8081A
Methapyriline	EPA 8270C	alpha-BHC	EPA 8081A
Pronamide	EPA 8270C	alpha-Chlordane	EPA 8081A
Manadina		beta-BHC	EPA 8081A
	Benzidines	Chlordane Total	EPA 8081A
3,3' -Dichlorobenzidine	EPA 8270C	Chlorobenzilate	EPA 8270C

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Chlorinated Hydrocarbon Pesticides		Chlorinated Hydrocarbons	
delta-BHC	EPA 8081A	Hexachloroethane	EPA 8270C
Diallate	EPA 8270C	Hexachlorophene	EPA 8270C
Dieldrin	EPA 8081A	Hexachloropropene	EPA 8270C
Endosulfan I	EPA 8081A	Pentachlorobenzene	EPA 8270C
Endosulfan II	EPA 8081A	Chlorophenoxy Acid Pesticides	
Endosulfan sulfate	EPA 8081A	2,4,5-T	EPA 8151A
Endrin	EPA 8081A	2,4,5-TP (Silvex)	EPA 8151A
Endrin aldehyde	EPA 8081A	2,4-D	EPA 8151A
Endrin Ketone	EPA 8081A	Dalapon	EPA 8151A
gamma-Chlordane	EPA 8081A	Dicamba	EPA 8151A
Heptachlor	EPA 8081A	Dinoseb	EPA 8151A
Heptachlor epoxide	EPA 8081A	MCPP	EPA 8151A
Lindane	EPA 8081A		
Methoxychlor	EPA 8081A	Haloethers	
Pentachloronitrobenzene	EPA 8270C	4-Bromophenylphenyl ether	EPA 8270C
Toxaphene	EPA 8081A	4-Chlorophenylphenyl ether	EPA 8270C
Chlorinated Hydrocarbons		Bis (2-chloroisopropyl) ether	EPA 8270C
1,2,4,5-Tetrachlorobenzene	EPA 8270C	Bis(2-chloroethoxy)methane	EPA 8270C
1,2,4-Trichlorobenzene	EPA 8270C	Bis(2-chloroethyl)ether	EPA 8270C
2-Chioronaphthalene	EPA 8270C	Metals I	
Hexachlorobenzene	EPA 8270C	Barium, Total	EPA 6010B
Hexachlorobutadiene	EPA 8270C	Cadmium, Total	EPA 6010B
Hexachlorocyclopentadiene	EPA 8270C	Calcium, Total	EPA 6010B
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Metals I		Metals II	
Chromium, Total	EPA 6010B	Mercury, Total	EPA 7471A
Copper, Total	EPA 6010B	Selenium, Total	EPA 6010B
	EPA 7210		EPA 7740
Iron, Total	EPA 6010B	Vanadium, Total	EPA 6010B
	EPA 7380	Zinc, Total	EPA 6010B
Lead, Total	EPA 6010B		EPA 7950
Magnesium, Total	EPA 6010B	Metais III	
Manganese, Total	EPA 6010B	Cobalt, Total	EPA 6010B
-	EPA 7460	Molybdenum, Total	EPA 6010B
Nickel, Total	EPA 6010B	Silica, Dissolved	EPA 6010B
Potassium, Total	EPA 6010B	Thallium, Total	EPA 6010B
	EPA 7610	Hanun, Total	EPA 7841
Silver, Total	EPA 6010B	Tin, Total	EPA 6010B
	EPA 7760A	Titanium, Total	EPA 6010B
Sodium, Total	EPA 6010B	i italiurii, rotal	EFA 0010B
,	EPA 7770	Minerals	
		Chloride	EPA 9253
Metals II		Fluoride, Total	EPA 9214
Aluminum, Total	EPA 6010B	Sulfate (as SO4)	EPA 9038
Antimony, Total	EPA 6010B	•	
Arsenic, Total	EPA 6010B	Miscellaneous	
Beryllium, Total	EPA 6010B	Cyanide, Total	EPA 9012A
Chromium VI	EPA 7196A	Hydrogen Ion (pH)	EPA 9040B
Lithium, Total	EPA 6010B		EPA 9045C

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Miscellaneous		Nitrosoamines	
Lead in Dust Wipes	EPA 6010B	N-nitrosomorpholine	EPA 8270C
Lead in Paint	SM 18-20 3111B	N-nitrosopiperidine	EPA 8270C
	SM 18-20 3120B	N-Nitrosopyrrolidine	EPA 8270C
Oil & Grease Total Recoverable	EPA 9070	Organophosphate Pesticides	
	EPA 9071	Azinphos methyl	EPA 8270C
Phenois	EPA 9065	Coumaphos	EPA 8270C
Specific Conductance	EPA 9050	Demeton-O	EPA 8270C
Sulfide (as S)	EPA 9030B	Demeton-S	EPA 8270C
Nitroaromatics and Isophorone		Diazinon	EPA 8270C
1,4-Naphthquinone	EPA 8270C	Dichlorvos	EPA 8270C
2,4-Dinitrotoluene	EPA 8270C	Dimethoate	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C	Disulfoton	EPA 8270C
4-Dimethylaminoazobenzene	EPA 8270C	EPN	EPA 8270C
Isophorone	EPA 8270C	Famphur	EPA 8270C
Nitrobenzene	EPA 8270C	Fensulfothion	EPA 8270C
Pyridine	EPA 8270C	Fenthion	EPA 8270C
Nitrosoamines		Malathion	EPA 8270C
N-Nitrosodiethylamine	EPA 8270C	Mevinphos	EPA 8270C
N-Nitrosodimethylamine	EPA 8270C	NALED	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C	Parathion ethyl	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C	Parathion methyl	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C	Phorate	EPA 8270C
ra-rate 03001pricity as mine	2.7(02/00	Sulfotepp	EPA 8270C

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Organophosphate Pesticides		Polynuclear Aromatic Hydrocarbons		
Thionazin	EPA 8270C	3-Methylcholanthrene	EPA 8270C	
Phthalate Esters		7,12-Dimethylbenzyl (a) anthracene	EPA 8270C	
Benzyi butyl phthalate	EPA 8270C	Acenaphthene	EPA 8270C	
Diethyl phthalate	EPA 8270C	Acenaphthylene	EPA 8270C	
Dimethyl phthalate	EPA 8270C	Anthracene	EPA 8270C	
Di-n-butyl phthalate	EPA 8270C	Benzo(a)anthracene	EPA 8270C	
Di-n-octyl phthalate	EPA 8270C	Benzo(a)pyrene	EPA 8270C	
Di-ri-octys printigate	El / (OZ/OG	Benzo(b)fluoranthene	EPA 8270C	
Polychlorinated Biphenyls		Benzo(ghi)perylene	EPA 8270C	
PCB-1016	EPA 8082	Benzo(k)fluoranthene	EPA 8270C	
	EPA 8270C	Chrysene	EPA 8270C	
PCB-1221	EPA 8082	Dibenzo(a,h)anthracene	EPA 8270C	
	EPA 8270C	Fluoranthene	EPA 8270C	
PCB-1232	EPA 8082	Fluorene	EPA 8270C	
	EPA 8270C	Indeno(1,2,3-cd)pyrene	EPA 8270C	
PCB-1242	EPA 8082	Naphthalene	EPA 8270C	
	EPA 8270C	Phenanthrene	EPA 8270C	
PCB-1248	EPA 8082	Pyrene	EPA 8270C	
	EPA 8270C	Dulante, Dalledant Bhanala		
PCB-1254	EPA 8082	Priority Pollutant Phenois	EPA 8270C	
	EPA 8270C	2,3,4,6 Tetrachlorophenol	EPA 8270C	
PCB-1260	EPA 8082	2,4,5-Trichlorophenol	EPA 8270C	
	EPA 8270C	2,4,6-Trichlorophenol	EPA 8270C	
		2,4-Dichlorophenol	EPA 02/00	

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Priority Pollutant Phenois		Purgeable Aromatics		
2,4-Dimethylphenol	EPA 8270C	Benzene	EPA 8021B	
2,4-Dinitrophenol	EPA 8270C		EPA 8260B	
2,6-Dichlorophenol	EPA 8270C	Bromobenzene	EPA 8260B	
2-Chlorophenol	EPA 8270C	Chlorobenzene	EPA 8021B	
2-Methyl-4,6-dinitrophenol	EPA 8270C		EPA 8260B	
2-Nitrophenol	EPA 8270C	Ethyl benzene	EPA 8021B	
3-Methylphenol	EPA 8270C		EPA 8260B	
4-Chloro-3-methylphenol	EPA 8270C	Isopropylbenzene	EPA 8260B	
4-Methylphenol	EPA 8270C	n-Butylbenzene	EPA 8260B	
4-Nitrophenol	EPA 8270C	n-Propylbenzene	EPA 8260B	
Pentachlorophenol	EPA 8270C	p-Isopropyltoluene (P-Cymene)	EPA 8260B	
Phenol	EPA 8270C	sec-Butylbenzene	EPA 8260B	
Purgeable Aromatics		Styrene	EPA 8260B	
1,2,4-Trimethylbenzene	EPA 8260B	tert-Butylbenzene	EPA 8260B	
1,2-Dichlorobenzene	EPA 8021B	Toluene	EPA 8021B	
1,2-Did not oberizene	EPA 8260B		EPA 8260B	
1,3,5-Trimethylbenzene	EPA 8260B	Total Xylenes	EPA 8021B	
1,3-Dichlorobenzene	EPA 8021B		EPA 8260B	
1,2 2.2	EPA 8260B	Purgeable Halocarbons		
1,4-Dichlorobenzene	EPA 8021B	1,1,1,2-Tetrachloroethane	EPA 8260B	
·	EPA 8260B	1,1,1-Trichloroethane	EPA 8021B	
2-Chlorotoluene	EPA 8260B		EPA 8260B	
4-Chlorotoluene	EPA 8260B	1,1,2,2-Tetrachloroethane	EPA 8021B	

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Purgeable Halocarbons		Purgeable Halocarbons	
1,1,2,2-Tetrachloroethane	EPA 8260B	Bromoform	EPA 8021B
1,1,2-Trichloroethane	EPA 8021B		EPA 8260B
	EPA 8260B	Bromomethane	EPA 8021B
1,1-Dichloroethane	EPA 8021B		EPA 8260B
	EPA 8260B	Carbon tetrachloride	EPA 8021B
1,1-Dichloroethene	EPA 8021B		EPA 8260B
	EPA 8260B	Chloroethane	EPA 8021B
1,1-Dichloropropene	EPA 8260B		EPA 8260B
1,2,3-Trichloropropane	EPA 8260B	Chloroform	EPA 8021B
1,2-Dibromo-3-chloropropane	EPA 8260B		EPA 8260B
1,2-Dichloroethane	EPA 8021B	Chloromethane	EPA 8021B
	EPA 8260B		EPA 8260B
1,2-Dichloropropane	EPA 8021B	cis-1,2-Dichloroethene	EPA 8260B
	EPA 8260B	cis-1,3-Dichloropropene	EPA 8021B
1,3-Dichloropropane	EPA 8260B		EPA 8260B
2,2-Dichloropropane	EPA 8260B	cis-1,4-Dichloro-2-butene	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B	Dibromochloromethane	EPA 8021B
2-Chloroethylvinyl ether	EPA 8021B		EPA 8260B
	EPA 8260B	Dibromomethane	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B	Dichlorodifluoromethane	EPA 8021B
Bromochloromethane	EPA 8260B		EPA 8260B
Bromodichloromethane	EPA 8021B	Methylene chloride	EPA 8021B
	EPA 8260B		EPA 8260B

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	Purgeable Halocarbons		Purgeable Organics	
	Tetrachloroethene	EPA 8021B	o-Toluidine	EPA 8270C
		EPA 8260B	Propionitrile	EPA 8260B
أسند	trans-1,2-Dichloroethene	EPA 8260B	Vinyl acetate	EPA 8260B
	trans-1,3-Dichloropropene	EPA 8021B	Semi-Volatile Organics	
		EPA 8260B	2-Methylnaphthalene	EPA 8270C
الك	trans-1,4-Dichloro-2-butene	EPA 8260B	4-Amino biphenyl	EPA 8270C
	Trichloroethene	EPA 8021B	Acetophenone	EPA 8270C
		EPA 8260B	Benzoic Acid	EPA 8270C
	Trichlorofluoromethane	EPA 8021B	Benzyl alcohol	EPA 8270C
		EPA 8260B	Dibenzofuran	EPA 8270C
	Vinyl chloride	EPA 8021B	Ethyl methanesulfonate	EPA 8270C
		EPA 8260B	Isosafrole	EPA 8270C
	Purgeable Organics		Methyl methanesulfonate	EPA 8270C
	1,4-Dioxane	EPA 8260B	O,O,O-Triethyl phosphorothioate	EPA 8270C
	2-Butanone (Methylethyl ketone)	EPA 8260B	Phenacetin	EPA 8270C
	2-Hexanone	EPA 8260B	Safrole	EPA 8270C
24	Acetone	EPA 8260B		
	Acetonitrile	EPA 8260B		
	Carbon Disulfide	EPA 8260B		
شعير	Ethyl Acetate	EPA 8260B		
-	Ethylene Glycol	EPA 8015 B		
	Isobutyl alcohol	EPA 8260B		
المنفسد	Methyl tert-butyl ether	EPA 8260B		

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Metals I

Lead, Total EPA 7420

Metals II

Antimony, Total EPA 7041
Arsenic, Total EPA 7060A

Phthalate Esters

Bis(2-ethylhexyl) phthalate EPA 8270C

Purgeable Organics

4-Methyl-2-Pentanone EPA 8260B

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Antonia C. Novello, M.D., M.P.H., Dr.P.H.



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. THOMAS TREUTLEIN ECOTEST LABORATORIES INC 377 SHEFFIELD AVENUE NORTH BABYLON, NY 11703 NY Lab Id No: 10320 EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

e. Coli

Colilert

SM 18-20 9221B

Wastewater Metals I

Cadmium, Total

EPA 3020A

Strontium, Total

EPA 200.7

Wastewater Miscellaneous

Total Recoverable Petroleum Hydrocarb EPA 1664A

Serial No.: 30644

Antonia C. Novello, M.D., M.P.H., Dr.P.H.



Expires 12:01 AM April 01, 2007 Issued April 01, 2006 Revised April 13, 2006

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All approved analytes are listed below:

54-4-1- 1I

	Chlorinated Hydrocarbon Pesticides		Metals II	
	4,4'-DDT	NIOSH 2, VOL. 3 S274	Beryllium, Total	40 CFR 61 1984 Method 104
	Aldrin	NIOSH 4, VOL. 1 5502		NIOSH 7300
	Chlordane Total	NYS DOH APC-34	Mercury, Total	EPA 245.2
	Dieldrin	NIOSH 2, VOL. 3 S283	Metals III	
		NYS DOH APC-34	Chromium, Total	NIOSH 7300
	Endrin	NIOSH 2, VOL. 6 S284	·	
i	Heptachlor	NIOSH 2, VOL. 5 S287	Mineral	
	Lindane	NIOSH 4, VOL. 1 5502	Fluoride, Total	EPA 340.2
	Toxaphene	NIOSH 2, VOL. 2 S67	Nitrate (as N)	EPA 353.2
	•		Sulfate (as SO4)	EPA 375.4
•	Chlorinated Hydrocarbons	mm4 mm 45	Polychlorinated Biphenyls	
	1,2,4-Trichlorobenzene	EPA TO-15	PCB-1016	EPA, 1980
		NIOSH 2, VOL. 2 S133		NIOSH 5503
		NIOSH 5517		NYS DOH 311-1
	Hexachlorobutadiene	EPA TO-15	PCB-1221	EPA, 1980
		NIOSH 2, VOL. 5 307		NIOSH 5503
•		NIOSH 2543		NYS DOH 311-1
	Hexachloroethane	EPA TO-15	PCB-1232	EPA, 1980
		NIOSH 1003		NIOSH 5503
		NIOSH 2, VOL. 2 S101		NYS DOH 311-1
	Metals i		PCB-1242	EPA, 1980
نك	Lead, Total	EPA 200.7	1 3 5 (12 12	NIOSH 5503
		EPA 239.1		NYS DOH 311-1

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All approved analytes are listed below:

Polychlorinated Biphenyls		Purgeable Aromatics	
PCB-1248	EPA, 1980	1,2-Dichtorobenzene	EPA TO-14A
	NIOSH 5503		EPA TO-15
	NYS DOH 311-1		NIOSH 1003
PCB-1254	EPA, 1980		NIOSH 2, VOL.3 S135
	NIOSH 5503	1,3,5-Trìmethylbenzene	EPA TO-14A
	NYS DOH 311-1		EPA TO-15
PCB-1260	EPA, 1980	1,3-Dichlorobenzene	EPA TO-14A
	NIOSH 5503	1,4-Dichlorobenzene	EPA TO-14A
	NYS DOH 311-1		EPA TO-15
Delana Anamatica			NIOSH 1003
Polynuclear Aromatics	EPA TO-14A		NIOSH 2, VOL. 3 S281
Benzo(a)pyrene	NIOSH 5515	Benzene	EPA TO-14A
	EPA TO-14A		EPA TO-15
Naphthalene	EPA TO-14A		NIOSH 1501
		•	NIOSH 2, VOL. 1 127
	NIOSH 1501	Chlorobenzene	EPA TO-14A
Priority Pollutant PhenoIs			EPA TO-15
2-Chlorophenol	EPA 625		NIOSH 1003
Pentachlorophenol	EPA 625		NIOSH 2, VOL. 2 S133
Phenol	EPA 625	Ethyl benzene	EPA TO-14A
Purgeable Aromatics			EPA TO-15
1,2,4-Trimethylbenzene	EPA TO-14A		NIOSH 1501
• • • • • • • • • • • • • • • • • • • •	EPA TO-15		NIOSH 2, VOL 2 S29

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Purgeable Aromatics		Purgeable Halocarbons	
Styrene	EPA TO-14A	1,1-Dichloroethane	NIOSH 1003
	EPA TO-15		NIOSH 2, VOL. 2 S123
Toluene	EPA TO-14A	1,1-Dichloroethene	EPA TO-14A
	EPA TO-15		EPA TO-15
	NIOSH 1501		NIOSH 1003
	NIOSH 2, VOL. 1 127		NIOSH 2, VOL. 2 S110
Total Xylenes	EPA TO-14A	1,2-Dichloro-1,1,2,2-tetrafluoroethane	EPA TO-14A
	EPA TO-15		EPA TO-15
	NIOSH 1501	1,2-Dichloroethane	EPA TO-14A
	NIOSH 2, VOL. 1 127		EPA TO-15
Duranahla Majasarhana			NIOSH 1003
Purgeable Halocarbons 1,1,1-Trichloroethane	EPA TO-14A		NIOSH 2, VOL. 2 S123
1,1,1-1 ichoroemane	EPA TO-15	1,2-Dichloropropane	EPA TO-14A
1,1,2,2-Tetrachloroethane	EPA TO-14A		EPA TO-15
1, 1,2,2-1 en acmoroenane	EPA TO-15		NIOSH 1003
	NIOSH 1019		NIOSH 2, VOL. 6 321
	NIOSH 2, VOL. 2 S124	Bromodichloromethane	EPA TO-14A
1,1,2-Trichloroethane	EPA TO-14A		EPA TO-15
1, 1,2-1 nonoroettane	EPA TO-15	Bromoform	EPA TO-15
1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-14A	Bromomethane	EPA TO-14A
1,1,2-11111000-1,2,2-1110110100010110	EPA TO-15		EPA TO-15
1,1-Dichloroethane	EPA TO-14A	Carbon tetrachloride	EPA TO-14A
t, maioritata da da da da da da da da da da da da da	EPA TO-15		EPA TO-15
	w. , . 1 O 10		

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Purgeable Halocarbons		Purgeable Halocarbons	
Carbon tetrachloride	NIOSH 1003	trans-1,2-Dichloroethene	EPA TO-15
	NIOSH 2, VOL. 1 127	trans-1,3-Dichloropropene	EPA TO-14A
Chloroethane	EPA TO-14A		EPA TO-15
	EPA TO-15	Trichloroethene	EPA TO-14A
Chloroform	EPA TO-14A		EPA TO-15
	EPA TO-15	Trichlorofluoromethane	EPA TO-14A
	NIOSH 1003		EPA TO-15
	NIOSH 2, VOL. 1 127	Vinyl bromide	EPA TO-15
Chloromethane	EPA TO-14A	Vinyl chloride	40 CFR, PART 61 1984 APP. B METH 1
	EPA TO-15		EPA TO-14A
cis-1,2-Dichloroethene	EPA TO-14A		EPA TO-15
	EPA TO-15		NIOSH 1007
Dichlorodifluoromethane	EPA TO-14A	Volatile Chlorinated Organics	
	EPA TO-15	Benzyl chloride	EPA TO-14A
Methylene chloride	EPA TO-14A	Delizyi Gridinia	EPA TO-15
	EPA TO-15	Epichlorohydrin	EPA TO-15
	NIOSH 1003	•	
	NIOSH 2, VOL. 1 127	Volatile Organics	
Tetrachloroethene	EPA TO-14A	1,3-Butadiene	EPA TO-14A
	EPA TO-15	·	EPA TO-15
	NIOSH 1003	2,2,4-Trimethylpentane	EPA TO-15
	NIOSH 2, VOL. 1 127	2-Butanone (Methylethyl ketone)	EPA TO-15
trans-1.2-Dichloroethene	EPA TO-14A	4-Methyl-2-Pentanone	EPA TO-15

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Volatile Organics

Hexane	EPA TO-15
Methyl iodide	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
Vinyl acetate	EPA TO-15

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All approved analytes are listed below:

	D. W. Methylcarbamate Pesticide	S	Drinking Water Chlorinated A	cids
i	3-Hydroxy Carbofuran	EPA 531.1	2,4,5-TP (Silvex)	EPA 515.1
	Aldicarb	EPA 531.1	2,4-D	EPA 515.1
	Aldicarb Sulfone	EPA 531.1	Dalapon	EPA 515.1
	Aldicarb Sulfoxide	EPA 531.1	Dicamba	EPA 515.1
	Carbaryl	EPA 531.1	Dinoseb .	EPA 515.1
	Carbofuran	EPA 531.1	Pentachlorophenol	EPA 515.1
ì	Methomyl	EPA 531.1	Picloram	EPA 515.1
	Oxamyl	EPA 531.1	Drinking Water Metals I	
	Disinfection By-products		Arsenic, Total	EPA 200.7
Í	Bromochloroacetic acid	EPA 552.2		EPA 200.9
	Dibromoacetic acid	EPA 552.2	Barium, Total	EPA 200.7
	Dichloroacetic acid	EPA 552.2	Cadmium, Total	EPA 200.7
	Monobromoacetic acid	EPA 552.2		EPA 200.9
	Monochloroacetic acid	EPA 552.2	Chromium, Total	EPA 200.7
	Trichloroacetic acid	EPA 552.2		SM 18-19 3113B
•	Drinking Water Bacteriology		Copper, Total	EPA 200.7
	Coliform, Total	SM 18-20 9221B		SM 18-20 3111B
		SM 18-20 9221D	Iron, Total	EPA 200.7
		SM 18-20 9223		SM 18-20 3111B
	Standard Plate Count	SimPlate	Lead, Total	EPA 200.9
		SM 18 9215B	Manganese, Total	EPA 200.7
į				SM 18-20 3111B
			Mercury, Total	EPA 245.1

Serial No.: 31455



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All approved analytes are listed below:

Drinking Water Metals I		Drinking Water Miscellaneous	
Selenium, Total	EPA 200.9	Benzo(a)pyrene	EPA 525.2
Silver, Total	EPA 200.7	Bis(2-ethylhexyl) phthalate	EPA 525.2
	SM 18-19 3113B	Butachtor	EPA 507
Zinc, Total	EPA 200.7	Di (2-ethylhexyl) adipate	EPA 525.2
	SM 18-20 3111B	Glyphosate	EPA 547
Drinking Water Metals II		Hexachlorobenzene	EPA 508
Aluminum, Total	EPA 200.7	Hexachlorocyclopentadiene	EPA 525.2
Antimony, Total	EPA 200.9	Methyl tert-butyl ether	EPA 502.2/ SEE ITEM 198.5
Beryllium, Total	EPA 200.7		EPA 524.2
Molybdenum, Total	EPA 200.7	Odor	EPA 140.1
Nickel, Total	EPA 200.7	Organic Carbon, Total	EPA 415.1
Thallium, Total	EPA 200.9	Propachlor	EPA 508
Vanadium, Total	EPA 200.7	Drinking Water Non-Metals	
·		Alkalinity	SM 18-20 2320B
Drinking Water Metals III		Calcium Hardness	EPA 200.7
Boron, Total	EPA 200.7	Chloride	SM 18-20 4500-CI B
Calcium, Total	EPA 200.7	Color	SM 18-20 2120B
Magnesium, Total	EPA 200.7	Corrosivity	SM 18-19 2330
	SM 18-20 3111B	Cyanide, Free	EPA 335.4
Potassium, Total	EPA 200.7	Cyanide, Total	EPA 335.4
	SM 18-20 3111B	•	
Sodium, Total	EPA 200.7	Fluoride, Total	SM 18-20 4500-F C
	SM 18-20 3111B	Hydrogen Ion (pH)	EPA 150.1
		Nitrate (as N)	EPA 353.2

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All approved analytes are listed below:

	Drinking Water Non-Metals		Drinking Water Trihalomethanes	
	Nitrite (as N)	SM 18-20 4500-NO2 B	Bromodichloromethane	EPA 524.2
	Orthophosphate (as P)	SM 18-20 4500-P E	Bromoform	EPA 524.2
	Silica, Dissolved	EPA 200.7	Chloroform	EPA 524.2
ini	Solids, Total Dissolved	SM 18-20 2540C	Dibromochloromethane	EPA 524.2
	Specific Conductance	SM 18-20 2510B	Microextractibles	
	Sulfate (as SO4)	EPA 375.4	1,2-Dibromo-3-chloropropane	EPA 504.1
*	Drinking Water Organohalide Pe	sticides	1,2-Dibromoethane	EPA 504.1
	Alachior	EPA 507	Polychlorinated Biphenyls	
	Aldrin	EPA 508	PCB Screen	EPA 508
	Atrazine	EPA 507	r ob oblesii	E1 A 300
	Chlordane Total	EPA 508	Volatile Aromatics	
	Dieldrin	EPA 508	1,2,3-Trichlorobenzene	EPA 502.2
***	Endrin	EPA 508		EPA 524.2
	Heptachlor	EPA 508	1,2,4-Trìchlorobenzene	EPA 502.2
_	Heptachlor epoxide	EPA 508		EPA 524.2
	Lindane	EPA 508	1,2,4-Trimethylbenzene	EPA 502.2
	Methoxychlor	EPA 508		EPA 524.2
	Metolachior	EPA 507	1,2-Dichlorobenzene	EPA 502.2
	Metribuzin	EPA 507		EPA 524.2
	Simazine	EPA 507	1,3,5-Trimethylbenzene	EPA 502.2
	Toxaphene	EPA 508		EPA 524.2
	·		1,3-Dichlorobenzene	EPA 502.2
				EPA 524.2

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Volatile Aromatics		Volatile Aromatics	
1,4-Dichlorobenzene	EPA 502.2	p-Isopropyltoluene (P-Cymene)	EPA 524.2
	EPA 524.2	sec-Butylbenzene	EPA 502.2
2-Chlorotoluene	EPA 502.2		EPA 524.2
	EPA 524.2	Styrene	EPA 502.2
4-Chlorotoluene	EPA 502.2		EPA 524.2
	EPA 524.2	tert-Butyibenzene	EPA 502.2
Benzene	EPA 502.2		EPA 524.2
	EPA 524.2	Toluene	EPA 502.2
Bromobenzene	EPA 502.2		EPA 524.2
	EPA 524.2	Total Xylenes	EPA 502.2
Chlorobenzene	EPA 502.2		EPA 524.2
	EPA 524.2	Volatile Halocarbons	
Ethyl benzene	EPA 502.2	1,1,1,2-Tetrachloroethane	EPA 502.2
	EPA 524.2	1,1,1,2 10000110,00010110	EPA 524.2
Hexachlorobutadiene	EPA 502.2	1.1.1-Trichloroethane	EPA 502.2
	EPA 524.2	1,1,1 1110110110110110	EPA 524.2
Isopropylbenzene	EPA 502.2	1,1,2,2-Tetrachloroethane	EPA 502.2
	EPA 524.2		EPA 524.2
n-Butylbenzene	EPA 502.2	1,1,2-Trichloroethane	EPA 502.2
	EPA 524.2	,,, <u>,</u>	EPA 524.2
n-Propylbenzene	EPA 502.2	1,1-Dichloroethane	EPA 502.2
	EPA 524.2	·	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 502.2	1,1-Dichloroethene	EPA 502.2

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Volatile Halocarbons		Volatile Halocarbons	
1,1-Dichloroethene	EPA 524.2	cis-1,2-Dichloroethene	EPA 502.2
1,1-Dichloropropene	EPA 502.2		EPA 524.2
	EPA 524.2	cis-1,3-Dichloropropene	EPA 502.2
1,2,3-Trichloropropane	EPA 502.2		EPA 524.2
	EPA 524.2	Dibromomethane	EPA 502.2
1,2-Dichloroethane	EPA 502.2		EPA 524.2
	EPA 524.2	Dichlorodifluoromethane	EPA 502.2
1,2-Dichloropropane	EPA 502.2		EPA 524.2
	EPA 524.2	Methylene chloride	EPA 502.2
1,3-Dichloropropane	EPA 502.2		EPA 524.2
	EPA 524.2	Tetrachloroethene	EPA 502.2
2,2-Dichloropropane	EPA 502.2		EPA 524.2
**	EPA 524.2	trans-1,2-Dichloroethene	EPA 502.2
Bromochloromethane	EPA 502.2		EPA 524.2
	EPA 524.2	trans-1,3-Dichloropropene	EPA 502.2
Bromomethane	EPA 502.2		EPA 524.2
	EPA 524.2	Trichloroethene	EPA 502.2
Carbon tetrachloride	EPA 502.2		EPA 524.2
· 1	EPA 524.2	Trichlorofluoromethane	EPA 502.2
Chloroethane	EPA 502.2		EPA 524.2
	EPA 524.2	Vinyl chloride	EPA 502.2
Chloromethane	EPA 502.2		EPA 524.2
	EPA 524.2		

Serial No.: 31455



SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Air and Emissions	11/3/97	1 of 3	244

<u>ANALYTE</u>	CONTAINER	PRESERVATION	MAXIMUM HOLDING <u>TIME</u>
Ambient Air Tests:			
Asbestos Fibers	Millipore aerosol monitor case or equivalent	None	Indefinite
Lead in Suspended Particulates Filter Extract	Glassine bag P,G	None HNO ₃ to pH<2	Indefinite 6 months
Mercury	G	H₂SO₄ to pH<2	28 days
Nitrates in Suspended Particulates Filter Extract	Glassine bag P,G	None Cool, 4°C	Indefinite 48 hours
Nitrogen Dioxide	P,G	Cool, 4°C	6 weeks
Sulfur Dioxide	P,G	Cool, 4°C	30 days
Suspended Particulates, Total	Glassine bag	None	Indefinite
Benzo(a)pyrene in Suspended Particulates Extract	G	Cool, 4°C in dark	months
Organic Materials in Suspended Particulates Filter Extract	Glassine bag G	None Store in dark	14 days 6 months
PCB	G	None	30 days
Formaldehyde	G	None	30 days

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Air and Emissions	11/3/97	2 of 3	244

<u>ANALYTE</u>	CONTAINER	PRESERVATION	MAXIMUM HOLDING <u>TIME</u>
Pesticides-Aldrin Chlordane, dieldrin Extract	G	Cool, 4°C	72 hours
Stationary Source Tests	:		
Beryllium	G, Teflon- lined cap	HNO₃ to pH<2	30 days
Chromium	G, Teflon- lined cap	HNO3 to pH<2	30 days
Fluorides	Р	None	30 days
Lead	G, Teflon- lined cap	HNO₃ to pH<2	30 days
Mercury	G, Teflon- lined cap	HNO ₃ to pH<2	30 days
Nitrogen Oxide	Р	NaOH to pH 9-12	30 days
Particulates	G, Teflon- lined cap and Petri dish	None	30 days
Sulfur dioxide	Р	None	30 days
Vinyl chloride	Tedlar bags	Out of direct sunlight (in dark)	72 hours
	Aluminized Mylar bag		24 hours
Organics Extract	G, Teflon- lined cap	Cool, 4°C	40 days

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Air and Emissions	11/3/97	3 of 3	244

			MAXIMUM HOLDING
ANALYTE	CONTAINER	PRESERVATION	<u>TIME</u>
Surface Coatings Tests:			
Density	G, Teflon- lined caps	None	30 days
Percent Water	G, Teflon- lined caps	None	30 days
Volatile Content	G, Teflon- lined caps	None	30 days
Percent Solids (Non- volatiles) in ink	G, Teflon- lined caps	None	30 days
Solid Fuels, Oils, Solven	<u>ts Tests</u> :		
B.T.U.	P,G, Teflon- lined caps	None	30 days
Metals	G, Teflon- lined cap	None	30 days
Sulfur	G, Teflon- lined cap	None	30 days

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	1 of 10	241

MAXIMUM HOLDING

ANALYTE CONTAINER PRESERVATION TIME

Bacteriological Tests:

Fully processed Drinking Water (40 CFR 141.21(f)(3)):

Coliform (Total)	P,G	0.008% Na ₂ S ₂ O ₃	30 hours <u>*</u>
Standard Plate Count	P,G	$0.008\% \text{ Na}_{2}^{2}\text{S}_{2}^{2}\text{O}_{3}^{2}$	30 - <u>8</u> _hours <u>*</u>

Surface Water (40 CFR 141.74(a)(1)):

Coliform (Total)	P,G	Cool to 4°C	8 hours*
Standard Plate Count	P,G	Cool to 4°C	8 hours*

*Note: Maximum holding time includes the time elapsed from collection of the sample to placement into the incubator.

Inorganic Tests:

Alkalinity	P,G	Separate bottle completely filled to the exclusion of air, cool, 4 ^o C	14 days
Antimony	P,G	HNO ₃ to pH<2	6 months
Arsenic	P,G	HNO ₃ to pH<2	6 months
Barium	P,G	HNO ₃ to pH<2	6 months
Beryllium	P,G	HNO ₃ to pH<2	6 months
Bromate	P,G	50 mg IL EDA	28 days
Cadmium	P,G	HNO ₃ to pH<2	6 months
Calcium	P,G	HNO ₃ to pH<2	6 months

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	2 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Chloride	P,G	None	28 days
Chlorite	P,G	50 mg IL EDA, Cool to 4 ^O C	14 days
Chromium	P,G	HNO ₃ to pH<2	6 months
Color	P,G	Cool, 4 ^o C	48 hours
Conductivity	P,G	Cool, 4°C	28 days
Copper	P,G	HNO ₃ to pH<2*	6 months
Cyanide	P,G	Cool, 4 ^o C NaOH to pH<12 1.2 g/L ascorbic acid	14 days
Fluoride	P,G	None	28 days
Lead	P,G	HNO ₃ to pH<2*	6 months
Mercury	G P	HNO ₃ to pH<2 HNO ₃ to pH<2	28 days 14 days
Nickel	P,G	HNO ₃ to pH<2	6 months
Nitrate By Ion Chromatography	P,G	Cool, 4 ^o C	48 hours
Chlorinated Supplies	P,G	Cool, 4 ^o C	14 days
Non-chlorinated Supplies	P,G	H ₂ SO ₄ to pH<2	28 days

^{*}Consumer collected samples may be left unpreserved for up to 14 days.

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	3 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Nitrite	P,G	Cool, 4°C	48 hours
рН	P,G	None	1 hour
Phosphorus (as Orthophosphate)	P,G	Cool, 4°C	48 hours
Selenium	P,G	HNO ₃ to pH<2	6 months
Silica	Р	Cool, 4 ^o C	28 days
Silver	P,G	HNO ₃ to pH<2	6 months
Sodium	P,G	HNO ₃ to pH<2	6 months
Sulfate	P,G	Cool, 4 ^o C	28 days
Thallium	P,G	HNO ₃ to pH<2	6 months
Total Filterable Residue	P,G	Cool, 4°C	7 days
Organic Tests: Trihalomethanes: Bromodichloromethane Bromoform Chlorodibromomethane Chloroform	Glass with Teflon-lined Septum	0.008%Na ₂ S ₂ O ₃	14 days
Volatile Halocarbon and Volatile Aromatics: Methy-tert-butyl ether	Glass with Teflon-lined Septum	Ascorbic Acid (25 mg/40 ml) added to empty sample bottle then add 1:1 HCl to pH<2. Cool 4°C	14 days

SUBJECT	<u>DATE</u>	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	4 of 10	241

Water			
ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Microextractables: Method 504.1	Glass with Teflon-lined Septum	Cool, 4 ^o C 3 mg Na ₂ S ₂ O ₃ per 40 ml vial	28 days
Method 505 analytes Alachlor Aldrin Atrazine Chlordane Dieldrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metolachlor Metribuzin PCB's Simazine Toxaphene	40-ml glass vial with cap liner	3 mg Na ₂ S ₂ O ₃ Cool, 4°C	7 days
Method 506 analytes Di-(2-ethylhexyl)adipate Di-(2-ethylhexyl) phthalate	1-L (or qt.) amber glass with TFE	60 mg Na ₂ S ₂ O ₃ Cool, 4 ^o C	14 days until extraction, then 14 days

lined cap

after extraction

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	5 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Method 507 analytes Alachlor Atrazine Butachlor Chlordane Metolachlor Metribuzine Propachlor Simazine	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na ₂ S ₂ O ₃ Cool, 4 ^o C Protect from light	14 days until extraction, then 14 days after extraction
Method 508 analytes Aldrin Chlordane Dieldrin Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metribuzin PCB's Toxaphene	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na ₂ S ₂ O ₃ Cool, 4 ^o C Protect from light	7 days until extraction, then 14 days after extraction
Method 508A PCB's, Total as decachlorobiphenyl	1-L glass, with TFE lined cap	Cool, 4 ^o C	14 days until extraction, then 30 days after extraction

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	6 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
<u> </u>			
Method 508.1 All	1-L glass with TFE lined cap	50 mg Na ₂ SO ₃ then 1:1 HCl to pH<2 Cool, 4 ^o C	14 days until extraction then 30 days after extraction
Method 1613 2,3,7,8-TCDD	1-L glass, with TFE lined cap	Protect from light and temperature extremes	7 days until extraction, then 40 days after extraction
Method 515.1: 515.2, 515.3 Chlorinated Acids	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na ₂ S ₂ O ₃ Cool, 4 ^o C Protect from light	14 days until extraction, then 14 days after extraction

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	7 of 10	241

MAXIMUM HOLDING

ANALYTE CONTAINER PRESERVATION TIME

Method 525.2			
Alachlor	Refrigerated	Cool, 4 C	Extract within
Aldrin	glass	Remove CI	14 days.
Atrazine	sample	residual; adjust	Analyze
Benzo(a)pyrene	containers,	pH<2 with	within 30
Butachlor	sampling	6 N HcL	days of
Chlordane (Technical)	must be free		sample
Dieldrin	of plastic		extraction
Di(2-ethylhexyl)adipate	tubing,		
Di(2-ethylhexyl)	gaskets, etc.		
phthalate	that may		
Endrin	leach		
Heptachlor	analytes into		
Heptachlor Epoxide	water		
Hexachlorobenzene			
Hexachlorocyclopenta-			
diene			
Lindane			
Methoxychlor			
Metolachlor			
Metribuzin			
Pentachlorophenol			
Propachlor			
Simazine			
Toxaphene			

Method 531.1

Methylcarbamate pesticides	60-ml vial with PTFE silicone	1.8 ml acetic acid buffer, 4.8 mg Na ₂ S ₂ O ₃	28 days
	septa	Ship 4°C	
		Store at-10 ^o C	

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	8 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Glyphosate	60-ml vial PTFE faced Silicone	6 mg Na ₂ S ₂ O ₃ Cool 4 ^o C; Protect from light	14 days
Endothall	40-ml amber glass vial with TFE lined cap	Cool 4 ^o C; Protect from light	7 days
Diquat	1-L amber plastic or silanized glass with screw cap	100 mg Na ₂ S ₂ O ₃ H ₂ SO ₄ to pH=2, Cool to 4 ^O C, Protect from light	7 days until extraction, then 21 days after extraction
Benzo(a)pyrene	1-L (or qt.) amber glass with TFE lined cap	100 mg Na ₂ S ₂ O ₃ 1:1 HCl to pH<2; Cool to 4 ^o C; Protect from light	7 days until extraction then 30 (40 for Method 550.1) days after extraction
Method 551 Bromodichloromethane Bromoform Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dibromo-3- chloropropane [DBCP] 1,2 Dibromoethane [EDB] Tetrachloroethylene 1,1,1-Trichloroethane Trichloroethylene	40 ml glass vials Teflon lined Septum	4 mg Na ₂ S ₂ O ₃ /40 mL or 25 mg Ascorbic acid/40 mL, Cool 4 ^O C	Analyze within 14 days of collection

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	9 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Method 552.1 Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid	Amber glass with TFE liner	Add NH ₄ Cl to a concentration of 100 mg/L in sample; Cool 4 ^o C	Extract within 28 days of collection. Analyze extract within 48 hours if stored at 4°C or less.
Method 555 2,4-D Dicamba Pichloram 2,4,5-TP	glass TFE lined	Acidify to pH2 with 1:1 HCl; Dechlorinate with 5 mg NaSO ₃ per 100mL sample; Cool 4 ^o C Protect from light	Analyze after extraction, within 14 days of collection
Microscopical Tests Asbestos	P,G	Cool, 4 ^o C	48 hours
		Preserved with 10 gm/L of O ₃ , and UV treatment	6 months
Radiological Tests Gross Alpha	P,G	HCL or HNO ₃ to pH<2	6 months
Gross Beta	P,G	HCL or HNO ₃ to pH<2	6 months
Strontium-89	P,G	HCL or HNO ₃ to pH<2	6 months

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Drinking Water	12/15/05	10 of 10	241

ANALYTE	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
ANALITE	CONTINUENT		
Srontium-90	P,G	HCL or HNO ₃ to pH<2	6 months
Radium-226	P,G	HCL or HNO ₃ to pH<2	6 months
Radium-228	P,G	HCL or HNO ₃ to	6 months
Radon-222	Glass with teflon-lined septum	Cool, 4°C	4 days
Radioactive Cesium	P,G	HCL to pH<2	6 months
lodine-131	P,G	None	7 days
Tritium	G	None	6 months
Uranium	P,G	HCL or HNO ₃ pH<2	6 months
Photon Emitters	P,G	HCL or HNO ₃ pH<2	6 months

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	1 of 9	242

ANALYTE	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Bacteriological Tests:			
Coliform, Total and Fecal	P,G	Cool, 4°C	6 hours
Coliform, Total and Fecal in chlorinated samples	P,G	Cool 4° C, 0.008% $Na_2S_2O_3$	6 hours
Standard Plate Counts	P,G	Cool 4° C, 0.008% Na ₂ S ₂ O ₃	6 hours
Inorganic Tests:		11020203	
Acidity	P,G	Separate bottle completely filled to the exclusion of air, Cool, 4°C	14 days
Alkalinity	P,G	Separate bottle completely filled to the exclusion of air, Cool, 4°C	14 days
Aluminum	P,G	HNO₃ to PH<2	6 months
Ammonia	P,G	Cool, 4°C, H ₂ SO ₄ to pH<2	28 days
Antimony	P,G	HNO ₃ to PH<2	6 months
Arsenic	P,G	HNO ₃ to PH<2	6 months
Barium	P,G	HNO ₃ to PH<2	6 months
Beryllium	P,G	HNO₃ to PH<2	6 months

^{*}P = Plastic; G = Glass

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	2 of 9	242

<u>ANALYTE</u>	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Biochemical oxygen demand	P,G	Cool, 4°C	48 hours
Boron	P,Quartz	HNO₃ to pH<2	6 months
Bromide	P,G	None	28 days
Biochemical oxygen demand, carbonaceous	P,G	Cool, 4°C	48 hours
Cadmium	P,G	HNO ₃ to PH<2	6 months
Calcium	P,G	HNO₃ to PH<2	6 months
Chemical oxygen demand	P,G	Cool, 4°C, H₂SO₄ to pH<2	28 days
Chloride	P,G	None	28 days
Chromium	P,G	HNO ₃ to PH<2	6 months
Chromium VI	P,G	Cool, 4°C	24 hours
Cobalt	P,G	HNO ₃ to PH<2	6 months
Color	P,G	Cool, 4°C	48 hours
Copper	P,G	HNO ₃ to PH<2	6 months
Cyanide, total and amendable to chlorination	P,G	Cool, 4°C, NaOH to pH>12, 0.6g ascorbic acid	14 days
Fluoride	Р	None	28 days
Gold	P,G	HNO₃ to PH<2	6 months

^{*}P = Plastic; G = Glass

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	3 of 9	242

<u>ANALYTE</u>	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Hardness	P,G	HNO_3 to pH<2 H_2SO_4 to pH<2	6 months
Hydrogen ion (pH)	P,G	None	Analyze immediately
Iridium	P,G	HNO₃ to PH<2	6 months
Iron	P,G	HNO ₃ to PH<2	6 months
Kjeldahl and organic nitrogen	P,G	Cool, 4°C, H₂SO₄ to pH<2	28 days
Lead	P,G	HNO₃ to pH<2	6 months
Magnesium	P,G	HNO₃ to pH<2	6 months
Manganese	P,G	HNO₃ to pH<2	6 months
Mercury	P,G	HNO₃ to pH<2	28 days
Molybdenum	P,G	HNO₃ to pH<2	6 months
Nickel	P,G	HNO₃ to pH<2	6 months
Nitrate	P,G	Cool, 4°C	48 hours
Nitrate-nitrite	P,G	Cool, 4°C, H₂SO₄ to pH<2	28 days
Nitrite	P,G	Cool, 4°C	48 hours
Oil and Grease	G	Cool, 4°C, HCl or H ₂ SO ₄ to pH<2	28 days

^{*}P = Plastic; G = Glass

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	4 of 9	242

ANALYTE	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Organic carbon	P,G	Cool, 4° C, HCl or H_3 PO ₄ , or H_2 SO ₄ to pH<2	28 days
Orthophosphate	P,G	Filter immediately, Cool, 4°C	48 hours
Osmium	P,G	HNO₃ to pH<2	6 months
Palladium	P,G	HNO₃ to pH<2	6 months
Phenols	G	Cool, 4°C H₂SO₄ to pH<2	28 days
Phosphorus (elemental)	G	Cool, 4°C	48 hours
Phosphorus, total	P,G	Cool, 4°C, H₂SO₄ to pH<2	28 days
Platinum	P,G	HNO₃ to pH<2	6 months
Residue, Total	P,G	Cool, 4°C	7 days
Residue, Volatile	P,G	Cool, 4°C	7 days
Residue, Filterable	P,G	Cool, 4°C	7 days
Residue, Nonfilterable	P,G	Cool, 4°C	7 days
Residue, Volatile	P,G	Cool, 4°C	7 days

^{*}P = Plastic; G = Glass

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	5 of 9	242

<u>ANALYTE</u>	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Rhodium	P,G	HNO ₃ to pH<2	6 months
Ruthenium	P,G	HNO ₃ to pH<2	6 months
Silica	P, Quartz	Cool, 4°C	28 days
Silver	P,G	HNO ₃ to pH<2	6 months
Specific Conductance	P,G	Cool, 4°C	28 days
Sulfate	P,G	Cool, 4°C	28 days
Sulfide	P,G	Cool, 4°C, add zinc acetate plus sodium hydroxide to pH>9	7 days
Surfactants	P,G	Cool, 4°C	48 hours
Temperature	P,G	None	Analyze Immediately
Thallium	P,G	HNO ₃ to pH<2	6 months
Tin	P,G	HNO ₃ to pH<2	6 months
Titanium	P,G	HNO₃ to pH<2	6 months
Vanadium	P,G	HNO ₃ to pH<2	6 months
Organic Tests:			
Purgeable Halocarbons plus Benzyl Chloride and Epichlorohydrin	G, Teflon- lined septum	Cool, 4°C, Ascorbic Acid (25 mg/40 ml) for residual chlorine	14 days (7 days if not preserved)

^{*}P = Plastic; G = Glass

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	6 of 9	242

<u>ANALYTE</u>	CONTAINER*	MAXIMUM PRESERVATION	HOLDING TIME
Purgeable Aromatics	G, Teflon- lined septum	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine	14 days
		Preserve as above and HCl to pH<2	14 days (7days if not preserved)
Acrolein and Acrylonitrile	G, Teflon- lined septum	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine	14 days for acrylonitrile, 3 days for acrolein
		Preserve as above and pH to 4-5	14 days
Phenols	G, Teflon- lined cap	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine	7 days until extraction 40 days after extraction
Benzidines	G, Teflon- lined cap	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine	7 days until extraction 7 days after extraction if stored under inert gas
Phthalate Esters	G, Teflon- lined cap	Cool, 4°C	7 days until extraction 40 days after extraction

^{*}P = Plastic; G = Glass

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	7 of 9	242

<u>ANALYTE</u>	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Nitrosamines	G, Teflon- lined cap	Cool, 4° C, store in dark, 0.008% $Na_2S_2O_3$ for residual chlorine. For diphenylnitrosamine add 0.008% $Na_2S_2O_3$ and adjust pH 7-10 with NaOH within 24 hours of sampling	7 days until extraction 40 days after extraction
Nitroaromatics and Isophorone	G, Teflon- lined cap	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine, store in dark	7 days until extraction 40 days after extraction
PCBs	G, Teflon- lined cap	Cool, 4°C	7 days until extraction 40 days after extraction
Pesticides	G, Teflon- lined cap	Cool, 4°C	72 hours
	miou cup	Cool, 4°C, pH 5-9, 0.008% Na ₂ S ₂ O ₃ for residual chlorine if aldrin is to be determined	7 days until extraction 40 days after extraction
Polynuclear Aromatic Hydrocarbons	G, Teflon- lined cap	Cool, 4°C, 0.08% Na ₂ S ₂ O ₃ for residual chlorine only, store in dark	7 days until extraction 40 days after extraction

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SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	8 of 9	242

ANALYTE	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Haloethers	G, Teflon- lined cap	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine only	7 days until extraction 40 days after extraction
Chlorinated Hydrocarbons	G-Teflon- lined cap	Cool, 4°C	7 days until extraction 40 days after extraction
2,3,7,8-Tetrachlorodi- benzo-p-Dioxin	G, Teflon- lined cap	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ for residual chlorine only	7 days until extraction 40 days after extraction
Radiological Tests:			
Gross Alpha	P,G	HCL or HNO₃ to	6 months
Gross Beta	P,G	HCL or HNO₃ to pH<2	6 months
Strontium-89	P,G	HCL or HNO₃ to pH<2	6 months
Strontium-90	P,G	HCL or HNO₃ to pH<2	6 months
Radium-226	P,G	HCL or HNO₃ to pH<2	6 months
Radium-228	P,G	HCL or HNO₃ to pH<2	6 months
Radon-222	glass with teflon-lined septum	Cool, 4°C	4 days

^{*}P = Plastic; G = Glass

SUBJECT	DATE	<u>PAGE</u>	ITEM NO.
Sample Collection: Requirements for Non-Potable Water	12/15/05	9 of 9	242

ANALYTE	CONTAINER*	PRESERVATION	MAXIMUM HOLDING TIME
Radioactive Cesium	P,G	HCL to pH<2	6 months
lodine-131	P,G	None	7 days
Tritium	G	None	6 months
Uranium	P,G	HCL or HNO₃ to pH<2	6 months
Photon Emitters	P,G	HCL or HNO₃ to pH<2	6 months
Microscopical Tests:			
Asbestos	Р	Cool to 4°C	48 hours
		20 mg/l Hg as HgCl₂	6 months

^{*}P = Plastic; G = Glass

SUBJECT	DATE	PAGE	ITEM NO.
Sample Collection: Requirements for Solid & Chemical Materials	6/1/95	1 of 1	243

SAMPLE PRESERVATION

Due to the variety of possible sample types, only generalizations can be made. Most solid samples are best preserved by refrigeration to 4• C. Analysis should begin as soon as possible. If SW846 does not list a holding time, then the holding time must not exceed the holding time listed for water samples. A complete record should be maintained on each sample to provide a history of sample handling from collection to analysis.

Sample containers may be either plastic or glass with a Teflon lined screw cap. Volatile Organics may be collected in standard VOA bottles filled to the septum.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 1 of 35

ELAP Laboratory ID# 10320

LABORATORY QUALITY MANUAL

TECHNICAL D	PIRECTOR:	THOMAS R. TRE	EUTLEIN	
QUALITY MAN	NAGER: THO	MAS U. POWEL	L	
APPROVED:	plans	Kan	DATE:	4-1-65
	TECH	INICAL DIRECTOR		11.1.06
APPROVED:	QUAL	TY MANAGER	DATE:	4-1-05

NOTE: This manual is based on New York State Department of Health, Environmental Laboratory Approval Program (NYSDOH ELAP) template.

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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
		Page 2 of 35
	Date: 04/01/2005	- 3

REVISION RECORD

Rev NO	DATE REVISED	Resp- onsible Person	CHANGES		
			Reason	Sec	Description of Change
1	04/17/00	Tom Powell	Initial Release	All	Initial Release
2	0501/00	Tom Powell	Lab Inspec-tion	5	Record of Initials of all staff
				10	Copy of Chain of Custody Form
				12	List of Equipment
				22	-Statement that Client will be advised of subcontracting of labwork in writing -Statement that reports will be numbered sequentially indicating on each page the total number of pages in report.
		rannahara — papanapapapapa		23	-Description of LIMS -Description of electronic record archiving system. -Hardcopy data and record storage systems including lab analyst notebook storage.
3	09/06/00	Tom Powell	Rec'd ELAP Inspection Report	p.1	Distribution list moved to QA officer's file
			·	3	Organization Chart revised
				5 F.	Record of initials moved to QA officer's file
				11	Revised equipment list
				21	Expanded section on ethics training



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LABORATORY QUALITY MANUAL	Doc. No. 1 Rev. No. 4	************
	Date: 04/01/2005 Page 3 of 35	A
	Date. 04/01/2003	*

4 0	4/01/05 Tom Powell	Incorportate NELAP Ch.5, 2002	All	Record Retention moved to Document Control Section; New information for Reports Section , expanded Corrective action , new section for confidentiality and proprietary rights. Added Quality System and Preventive Action sections. Renamed New Work to Review of Requests, Tenders, and Contracts. Renamed and expanded Testing Discrepancies to Control of Nonconforming Testing. Renamed and expanded ethics training to data integrity. Organization chart moved to Appendix. Editorial changes to Job Descriptions. Expanded Document Control to include annual review. Editorial changes to Lab Environment. Updated internal audit & managerial review requirements.
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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	D-1- 04/04/000F	Page 4 of 35
	Date: 04/01/2005	-

 ANNUAL REVIEW (PERFORMED IF DOCUMENT HAS NOT BEEN **REVISED IN THE PAST 12 MONTHS)**

Signature	Title	Date
Signature	Title	Date
Signature	Title	Date
(Responsible Person in Revisi	on Record)	

- TRAINING AND DISTRIBUTION OF QUALITY MANUAL RECORD See Appendix E
- RECORD OF INITIALS OF ALL STAFF -This documentation is on file with Quality Manager and will be distributed as needed to each department separately from laboratory quality document.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 5 of 35
TABLE OF CONTENTS		
1. Quality Policy		7
2. Accredited Test Methods		8
3. Quality System		10
4. Job Descriptions of Staff		11
5. Document Control		13
6. Traceability of Measurements		14
7. Review of All New Requests, Tenders and Contracts		15
Calibration/Verification of Test Procedures		16
9. Sample Handling		17
A. Sample Acceptance Policy		17
B. Sample Receipt Protocol		18
 C. Procedures for handling submitted sa 	mples	18
D. Copy of Chain of Custody Form		20
10. Procedures for Calibration, Verification, and I	Maintenance	
of Equipment		21
11. Proficiency Testing Participation, Interlaborat	ory Comparisons,	
Use of Reference Materials		22
12. Internal Quality Control Measures		22
13. Control of Non-Conforming Environmental Te	sting	25
14. Corrective Action Procedures		25
15. Exceptionally Permitted Departures From Doc		
and Procedures or From Standard Specia	ications	26
16. Preventive Action		27
17. Complaints 18. Internal Audit and Data Review		27
		28
A. Data Review		28
B. Internal Quality System Audits		28
C. Managerial Review		28
 Training and Review of Personnel Qualification Data Integrity and Ethics 	ons	29
. Data integrity and Etnics . Reporting Analytical Results		31 32
22. Confidentiality and Proprietary Rights		32 34
23. Lab Data Systems & Storage & Retreival of E	lata & Pacarda	3 4 35
24. References	raid & MECOIUS	30



377 Sheffield Ave. • North Babylon, N.Y. 11703 • (631) 422-5777 • Fax (631) 422-5770 Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 6 of 35

APPENDICES:

Appendix A - Code of Ethics

Appendix B - Organization Chart

Appendix C - Sample Holding Times, Containers and Preservatives

Appendix D - Certificates of Approval, New York State DOH ELAP

Appendix E - Quality Manual Training & Distribution Record

Appendix F - List of Equipment



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LABORATORY QUALITY MANUAL	Doc. No. 1 Rev. No. 4	+
	Date: 04/01/2005 Page 7 of 35	1

1. QUALITY POLICY

EcoTest Laboratories, Inc. is an independent, environmental testing laboratory which was founded in 1977. The company was founded by and is owned and co-directed by Thomas Powell and Thomas Treutlein.

Our main goal at EcoTest Laboratories is to produce the most accurate and precise analytical results possible, as quickly as possible. The data must be technically defensible for clients who must comply with Federal and state and local regulations such as SPDES, NPDES, RCRA, and SDWA.

Our efforts are concentrated on analytical chemistry and microbiology with a minimum of interpretive and consulting work. Because of the importance of our work to our clients in health, legal, economic, and other matters, we have instituted a comprehensive Quality Assurance/Quality Control (QA/QC) program. The standard operating procedures described herein were designed by our staff to incorporate all those aspects needed for a good QA/QC program and in conformance with the NELAC standard adopted by the New York State Environmental Laboratory Approval Program (NYSELAP). This includes the following:

- Adequately staffed and equipped laboratory facility,
- Successful participation in the proficiency testing program operated by the New York State DOH Environmental Laboratory Approval Program or another accredited provider,
- Successful implementation of a NELAC compliant quality system,
- · Annual internal audits with management review.
- Successful biennial assessments by the New York State Environmental Laboratory Approval Program, or Primary Accrediting Authority,



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
		Page 8 of 35
	Date: 04/01/2005	. age 0 0. 00

- Timely reporting of laboratory test results to the regulating authorities/clients,
- Laboratory test results that are supported by quality control data and documented laboratory testing procedures.

The quality policy is communicated to employees during the training of new hires. It is understood, implemented, and maintained by employees at all levels. This is documented by management through the employee evaluation process, the training procedure, the internal audit process, and the document control process. The technical director shall ensure that the lab's policies and objectives for quality of testing services are documented in the Quality Manual. The technical director shall assure that the Quality Manual is communicated to, understood, and implemented by all personnel concerned. Documentation includes signed statements in each analyst's training file.

2. ACCREDITED TEST METHODS -

SEE APPENDIX C:

"CERTIFICATES OF APPROVAL - New York STATE DEPT. OF HEALTH, ENVIRONMENTAL LABORATORY APPROVAL PROGRAM."

METHOD REFERENCES

CONTROLLED COPIES PRINTED ON WHITE PAPER WITH BLUE ECOTEST LOGO AT TOP OF PAGE



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 9 of 35

"Standard Methods for the Examination of Water and Wastewater", 14th - 20th editions, APHA.

"Methods of Chemical Analysis of Water and Wastes", EPA 600/4-79-020, March 1979 and March 1983 rev.

"Methods for Benzidine, Chlorinated Organic Compounds, Pentachlorophenol and Pesticides in Water and Wastewater", EPA, Sept. 1978.

"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", 3rd Edition, 1986, and Final Update III.

"NIOSH Manual of Analytical Methods", U.S. National Institute for Occupational Safety and Health, 2nd, 3rd and 4th editions (1994).

"Methods for the Determination of Organic Compounds in Drinking Water", EPA 600/4-88-039, 12/88 - rev. 7/91.

"Methods for the Determination of Organic Compounds in Drinking Water - Supplement 1", EPA 600-4-90-020, 7/90.

"Methods for the Determination of Organic Compounds in Drinking Water - Supplement 2", EPA 600-R-92-129, 8/92.

"Analytical Handbook, Laboratory of Organic Analytical Chemistry", Wadsworth Center for Laboratories and Research, NYS Dept. of Health, Including frequent updates.

"Methods for Determination of Toxic Organic Compounds in Air", William T. Winberry & Norma T. Murphy, EPA, 1990.

"Analytical Services Protocol", 2000 Edition, Lawrence Bailey ed., New York State Dept. of Environmental Conservation.





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LAB	ORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
		Date: 04/01/2005	Page 10 of 35

3. QUALITY SYSTEM

The quality system defined in the quality manual applies to all personnel who perform activities affecting quality. All employees are responsible for the quality system. The individual documents define specific employee responsibilities.

Through a formal documented system of planned activities, the quality system meets the requirements of ISO guide 17025, NELAC Chapter 5, July 2002 and the New York State Department of Health, Environmental Laboratory Approval Program (NYSDOH ELAP). The quality manual is maintained current and up-to-date by the Quality Manager to reflect changes to the system. The laboratory defines its policy for each applicable standard element in the quality manual. For each element, as appropriate, the laboratory has documented procedures that further describe how the specific policy objectives and goals are met. The quality manual references these documented procedures. Where applicable, work instructions are referenced in the documented procedures and the quality manual.

Quality procedures and instructions are implemented as written. The procedures explain how the laboratory implements the standard requirements in accordance with its quality policy. They are revised, as necessary, to reflect the actual objectives, flow of tasks and staff responsibilities.

Work instructions are maintained in the laboratory methods manual. They specify the equipment and fixtures required, the resources and skills, what tests and verifications will be performed to measure process and product quality, the records and written documentation used by personnel and standards of acceptability. Work instructions are approved by the affected managerial staff and are maintained in the document control system.

3.1 DOCUMENT STRUCTURE

Level 1	Quality Manual
Level 2	Quality Procedures
Level 3	Work Instructions and Test Procedures
Level 4	Quality Records



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 11 of 35

4. JOB DESCRIPTIONS OF STAFF

A. Technical Director-

Has overall responsibility for the technical operation of the lab. The technical director is also responsible for arranging and overseeing all support services including instrument service contracts, subcontracting sample analyses, and physical maintenance of the laboratory. The technical director also interacts with regulatory officials from outside the lab such as those performing audits and inspections of the lab.

Is responsible for providing supervision to all laboratory personnel to ensure adherence to lab documented procedures. When the director is not present in the lab, an employee who is familiar with the calibration and test procedures, the objective of the calibration or test, and the assessment of results, will be appointed by the director to supervise.

Shall certify that personnel with appropriate educational and/or technical background perform all tests for which the lab is accredited.

Shall ensure that the lab's policies and objectives for quality of testing services are documented in the Quality Manual. The Technical Director shall assure that the Quality Manual is communicated to, understood, and implemented by all personnel concerned. Documentation includes signed statements in each analyst's training file.

B. Quality Manager -

Has responsibility for the quality system and its implementation. The Quality Manager is one of the partners of EcoTest and has direct access to the Technical Director who is the other partner.

Serves as the focal point for QA/QC and be responsible for the oversight and/or review of quality control data.

Has functions independent from laboratory operations for which they have



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 12 of 35

quality assurance oversight.

Must be able to evaluate objectively and perform assessments without outside influence.

Has documented training and/or experience in QA/QC procedures and knowledgeable in the quality system as defined under NELAC.

Has a general knowledge of the analytical test methods for which data review is performed.

Arranges for or conducts internal audits of the technical operations for designated departments annually.

Shall discuss deficiencies in the quality system with Technical Director and department supervisor(s) and monitor corrective action.

C. Department Supervisors-

There are laboratory supervisors assigned to different areas of the lab: Inorganics (Metals & Wet Chemical Analysis), Volatile Organics Analysis, Semi-Volatile Organics Analysis by GCMS, Semi-Volatile Organics by GC(ECD & FID) and Microbiology. The duties of lab supervisors include:

Training of technicians in general laboratory procedures, analytical methods and quality control procedures.

Communicating with Technical Director and Quality Manager and analysts to insure that analysis is carried out property.

Resolving any problems involving analytical procedures that may arise. Problems that cannot be resolved at this level are brought to the attention of the Technical Director or Quality Manager for further attempts at resolution.

D. Sample Manager- Duties include:

Receipt of samples and Chain of Custody forms and any



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 13 of 35

other documentation such as shipping records.

Recording type and condition of sample containers, preservatives used, condition of custody seal if used.

Checking of sample tags and/or labels against Chain of Custody forms for agreement and recording of discrepancies.

Logging-in of samples consisting of recording pertinent information in logbook and filing of associated documentation such as Chain of Custody forms.

Distribution of sample bottles to appropriate storage shelves or refrigerators.

Removal of completed samples to special storage room where inactive samples are held pending disposal. At appropriate time, sample manager oversees disposal of samples.

E. Laboratory Technicians - Duties Include:

Perform analysis and report results of samples.

Be responsible for complying with all quality requirements that pertain to the analysis performed.

Assist supervisors, quality manager and technical director in the training of other technicians.

5. DOCUMENT CONTROL

All operating procedures, manuals including this quality manual, and documents, are subject to document control. Distribution of controlled documents is limited to those indicated on the document distribution list. Controlled documents are indicated by the blue EcoTest logo at the top of each page. Uncontrolled copies are indicated by black logo. The Quality





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

LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 14 of 35

Assurance Officer controls the paper used to produce controlled copies.

The purpose of the document control system is to ensure that only the most recent revisions are available to the appropriate personnel, revisions are timely, and receive the required approvals. All internal regulatory documentation, standard operating procedures, work instructions, service manuals, and product instructions are under document control. The Quality Assurance Officer is responsible for the document control system and keeps a master list of the location of all documents and their current revision. The Technical Director and the Quality Manager approve all newly released documents and revised documents. Any employee can request a change to a document. Where necessary, obsolete documents may be retained for legal reasons or for knowledge preservation. The Quality Manager stores retained obsolete documents. Each page of documents produced by the laboratory will contain the effective date, revision number. Document number, and Document title. Controlled documents will have an approval signature page, a revision (change record) history page, and a distribution list.

All SOPs and internal controlled documents are reviewed once per year. If a document is revised during the year the revision record in the document shall demonstrate review. If a document has not been revised during the year, the review record shall be the signature of the person responsible for the document and the date of the review. Amendment of documents is not allowed pending formal re-issue.

All data, including original observations, calculations and derived data, calibration records, QC records, and copies of the test reports, resulting from the analyses of samples are recorded and kept for five years (ten years for potable water samples) to allow historical reconstruction of the final result.

6. TRACEABILITY OF MEASUREMENTS

Verification and/or validation of equipment, such as, balances, thermometers, and spectrophotometers, shall be performed with National Institute of Standards and Technology (NIST) traceable standards.

Calibration certificates must indicate NIST Traceability along with





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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 15 of 35

measurement results and the associated uncertainty and/or a statement of compliance with an identified metrological specification, such as tolerance.

Reference standards, such as Class S weights and NIST traceable thermometers, are used for calibration only and shall be calibrated by an organization that can provide traceability to NIST.

Traceability to national standards of measurement is not applicable to the BOD, pH, and Fecal Coliform tests, therefore, the EcoTest Lab's participation in the NIST accredited New York State ELAP proficiency testing program or other NELAC accredited proficiency testing program provides satisfactory evidence of correlation of results.

Volumetric glassware, if not serialized and calibrated by the manufacturer or Class A, is checked quarterly in-house using a documented gravimetric technique.

7. REVIEW OF ALL REQUESTS, TENDERS AND CONTRACTS

All new work is initiated by the Technical Director who delegates responsibilities for the new work according to available resources. Staff meets prior to initiation of new work in order to determine if appropriate facilities and resources are available. The plan for any new testing shall be reviewed and approved by the Technical Director before commencing such work.

The review shall document that facilities and resources are organized to efficiently perform the work, including subcontracted work. The record of contract review includes pertinent discussions with the client regarding their requirements and results submitted during the contract period. For routine reviews of ongoing work a date and a signature of the laboratory official responsible for the contract is sufficient. For any new testing requirements, the designated official shall ensure that standard operating procedures and demonstration of capability to perform those tests prior to reporting results are available. The SOP(s) shall be under document control and a



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	m + 0+10+1000	Page 16 of 35
	Date: 04/01/2005	_

Demonstration of Capability statement(s) shall be on file. Copies are held in the contract review file.

If the review uncovers any potential conflicts, deficiencies, inappropriate accreditation status, and/or inability to perform the work, the laboratory shall notify the client. In cases where differences exist between the request/tender and contract they shall be resolved prior to starting work.

Clients are notified immediately in situations where the laboratory cannot conform to the contract and if the there is a change in laboratory accreditation status.

8. CALIBRATION/VERIFICATION OF TEST PROCEDURES.

- A. Calibration and/or verification procedures are designed to ensure that the data will be of known quality and be appropriate for a given regulation or decision. Details of instrument calibration and/or test verification procedures including calibration range, standardizations, calculations and acceptance criteria are included or referenced in each test method SOP.
- B. Sufficient raw data are retained to reconstruct the calibration used to calculate the sample result.
- C. All calibrations are verified with a second source standard which is traceable to a national standard, when available.
- D. Calibration standards include a concentration at or below the regulatory/decision level but above the laboratory's detection limit.
- E. Results of samples must be within the calibration range (bracketed by standards) or the results must be flagged as having less certainty.
- F. No data associated with a calibration that is out-of-control will be reported.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
		Page 17 of 35
	Date: 04/01/2005	, ago 1. 0, 00

G. Method Detection Limits (MDL): The MDL has been determined by the laboratory and documented for each analyte where spiking solutions are available. MDL can be determined by the procedure presented in 40 CFR Part 136, Appendix B. All sample processing steps of the analytical method are included in the determination of MDL. The standard deviation of the analysis of seven portions of spiked reagent water is calculated. The spiked reagent water is at an estimated concentration between the actual MDL and 5 times the actual MDL. The MDL is the product of 3.14 times the calculated standard deviation. The MDL should be about one fifth of the practical and routinely achievable detection level that can be reported with relatively good certainty that any reported value is reliable. Detection limits for BOD and TSS is defined by the method. MDLs are included in the Methods Manual for each method.

9. SAMPLE HANDLING

A. <u>Sample Acceptance Policy</u> - When EcoTest is required to collect samples, designated employees, trained as sample collectors are utilized. Collection is performed using approved plastic or glass containers of sufficient volume containing the necessary preservatives and chlorine neutralizing agents. Microbiological samples are collected in sterile containers. Samples that have not been properly stored during transport to the laboratory shall not be accepted or data must be flagged and client's permission must be obtained. Containers that are found at receipt to be compromised, either cracked or leaking, will not be accepted. Each sample container will be uniquely identified using a durable (water-resistant) label. The source (job name or location), site ID, along with the collection date, and time will be used to mark the samples submitted. Samples that require holding at 4 °C and which are hand delivered to the laboratory immediately after collection must be transported on ice in order to demonstrate that the chilling process has begun. The sample acceptance policy is available to the sample collectors. If any samples do not meet any requirements of the acceptance policy, the samples are not accepted for testing and resampling is requested unless client agrees to exception and data is flagged.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 18 of 35

Obtaining sample aliquots from a submitted sample as part of the test method is carried out using procedures as written in each method SOP. Appropriate techniques to obtain representative subsamples are employed and documented in the method SOP.

The samples must be submitted to the laboratory with records of field ID, location, date and time of collection, collector's name, preservation, sample type, and remarks. Complete preservation and handling instructions are furnished to the sample collectors.

<u>Summary of Sampling and Handling Requirements:</u> copies of tables from New York State ELAP Manual are included as APPENDIX D.

- B. <u>Sample Receipt Protocol</u> Upon receipt, the condition of the samples, including all items specified in the sample acceptance policy, are checked and recorded. Samples with a temperature of just above freezing to 6°C is acceptable if 4°C is specified. Samples that have not had time to cool are acceptable if they arrive on ice and cooling has begun. Dechlorinated samples are acceptable if the chemical test yields no free chlorine detected. Acid-preserved samples are acceptable if test with pH paper or pH meter yields a result of <2. All exceptions to the sample receipt protocol are fully documented. Sample records are linked to the sample ID and include all required information specified by the sample acceptance policy.
- C. <u>Procedures for handling submitted samples</u>. Samples are stored according to conditions specified in each test SOP. The laboratory has documented procedures and appropriate facilities to avoid deterioration, contamination, or damage to samples during storage, handling, preparation, and testing. Storage conditions are maintained, monitored, and recorded.

Additional procedures for handling submitted samples:

 Obtaining sample aliquots from a submitted sample as part of the test method is carried out using procedures as written in each method SOP.
 Appropriate techniques to obtain representative subsamples are employed.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 19 of 35

- 2). Each sample container will be uniquely identified using a durable label. For this laboratory, the field code or site ID along with the collection date will be used to mark the samples submitted.
- 3). The sample acceptance policy is documented and available to the sample collectors. If any samples do not meet any requirements of the acceptance policy, the data is flagged in an unambiguous manner clearly defining the nature and substance of the variation.
- 4). The sample receipt protocol is documented. The condition of the sample, including any abnormalities or departures from standard-condition as prescribed in the relevant test method, is recorded. Chain-of-Custody forms are employed whenever practicable.
- 5). Receipt of all samples is recorded in a permanent chronological record, or logbook. The logbook contains project name, date and time of laboratory receipt, laboratory ID, initials of recorder.
- 6). Sample records which are also available and linked to the sample ID include all required information specified by the sample acceptance policy.
- 7). Samples are stored according to conditions specified in each test SOP. The laboratory has documented procedures and appropriate facilities to avoid deterioration, contamination, or damage to samples during storage, handling, preparation, and testing. Storage conditions are maintained, monitored, and recorded where necessary.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 20 of 35

D. Copy of Chain of Custody Form:



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 21 of 35

10. PROCEDURES FOR CALIBRATION, VERIFICATION, AND MAINTENANCE OF EQUIPMENT

NOTE: SEE APPENDIX F FOR LIST OF EQUIPMENT.

- A. Calibration and testing occur only within the laboratory, designed, built and maintained as laboratory space. The laboratory space is maintained and monitored by the staff to the specifications required for laboratory space. The specification for temperature is (70'F +/- 3'F); for humidity (45% RH +/- 5%); and for voltage (120V +/- 2%). Electronic balances are located away from drafts and doorways and mounted on stone top counters in areas where their use could be effected by vibrations. Neighboring test areas of incompatible activities are effectively separated. Specific work areas are defined and access is controlled. (Only authorized laboratory personnel and escorted signed-in visitors may enter the work area.) Good housekeeping measures are employed to avoid the possibility of contamination. (Smoking is prohibited in the laboratory.)
- B. All equipment and reference materials required for the accredited tests are available in the laboratory. Records are maintained for all equipment, reference measurement materials, and services used by the laboratory.
- C. Reference materials traceable to national standards of measurement or to national standard reference materials are stored away from heavy use areas or major equipment that may effect the proper operation of the materials. Certificates of Traceability are available for the reference thermometer and the Class S weights. The reference materials are used only for calibration to maintain the validity of performance.
- D. Equipment is maintained, inspected, and cleaned according to the written Equipment Maintenance Procedures. Any defective item of equipment is clearly marked and taken out of service until it has been shown to perform satisfactorily.
- E. Each item of equipment or reference material is labeled to show its calibration status.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 22 of 35

- F. Equipment and reference material records include:
- 1) name of item of equipment or reference material
- 2) manufacturer, identification, serial number
- 3) date received and placed in service
- 4) current location
- 5) condition when received
- 6) copy of manufacturer's instructions or manuals
- 7) dates and results of calibrations/verifications and date of next calibration/verification
- 8) details of maintenance carried out to date and planned for the future
- 9) history of any damage, malfunction, modification, or repair
- G. Support equipment calibrations are verified annually using NIST traceable references over the range of use. Balances, ovens, refrigerators, freezers, incubators, and water baths are checked with NIST traceable references (where possible) daily and recorded. Additional monitoring as prescribed by the test method SOP is recorded. Mechanical volumetric dispensing devices are checked for accuracy quarterly and recorded. Autoclave cycles of chemical tests (digestions) are recorded by use of chemical indicators or temperature recorder and pressure gauge. The sterilization temperature, cycle time, and pressure of each autoclave run for biological tests are recorded. Monthly use of spore strips demonstrate sterilization. Autoclave tape is only used to indicate that each batch has been exposed to the sterilization process.
- H. Service of equipment is performed by qualified service organizations. All records and certificates from service calls are retained.
- 11. PROFICIENCY TESTING PARTICIPATION, INTERLABORATORY COMPARISONS, USE OF REFERENCE MATERIALS
- A. The laboratory reports its participation in an accredited proficiency testing program for each category of ELAP approval semi-annually.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 23 of 35

ELAP PT studies may be used. The results are used to evaluate the ability of the laboratory to produce accurate data. Proficiency test reports along with all raw data necessary to reconstruct the analyses are retained at the laboratory. The laboratory does not participate in interlaboratory comparisons unless required by the method.

B. The laboratory purchases external reference samples. All reference samples are certified. The laboratory retains the manufacturer's Certificate of Analysis.

12. INTERNAL QUALITY CONTROL PROCEDURES

The data acquired from quality control (QC) procedures are used to estimate the quality of analytical data, to determine the need for corrective action, and to interpret results after corrective actions are implemented. Each method standard operating procedure (SOP) includes detailed QC procedures and QC limits. QC limits are generated where no method limits exist. QC limits for laboratory control samples (LCS) and matrix spikes (MS) are based on the historical mean recovery plus or minus three standard deviations units. Duplicate limits for precision range from zero to 3.27 times the mean of the historical differences or relative percent differences. (In cases where historical data is not available, interim QC limits will be used until 20 data points are available to calculate QC limits. Interim QC limits for LCS and MS will be 80% - 120% recovery. Interim QC limits for duplicates will be 20% relative percent difference.)

All quality control measures are assessed and evaluated on an on-going basis. EcoTest chooses to present results of LCS and Matrix Spikes on control charts for on-going and trend evaluation. Results of Laboratory Duplicate analyses are also presented control charts for on-going evaluation. Analytical data generated with QC samples that fall within prescribed acceptance limits indicate the test method was in control. Data



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 24 of 35

generated with QC samples that fall outside QC limits indicate the test method was out of control. These data are considered suspect and the corresponding samples are reanalyzed or reported with qualifiers if reanalysis is not possible.

Method Blanks are performed at a frequency of one per batch of twenty or fewer samples for all analytes with the exception of analytes such as pH where blanks are not applicable. The results are used to determine batch acceptance. When blanks exceed the method SOP limits, the source of the contamination is investigated and measures are taken to correct, minimize and eliminate the problem.

Laboratory Control Samples (LCS), also referred to as Reference Samples, are performed at a frequency of one per batch of twenty or fewer samples for all analytes. The results are used to determine batch acceptance.

Matrix spikes are performed at a frequency of one per twenty samples for all analytes with the exception of analytes such as pH and Total Suspended Solids where matrix spikes are not applicable. The results are used to determine the existence of matrix effects in the spike sample. A matrix effect is indicated if the LCS data are within QC limits but the matrix spike data exceed QC limits.

Laboratory duplicates are performed at a frequency of one per twenty samples for all analytes. Duplicates are a measure of precision. If a duplicate result falls outside QC limits the original sample and the duplicate sample data is regarded as unreliable.

13. CONTROL OF NON-CONFORMING ENVIRONMENTAL TESTING

Specific Corrective action protocols for handling out-of-control QC are in each method SOP of the Methods Manual. In addition, general procedures



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 25 of 35

are followed to determine when departures from quality control have occurred. Provision is made for such deviations and documentation is determined by the Corrective Action Procedure. Because of the sampling schedule and the time frame of the analysis it is not always possible to repeat the analysis if all quality control measures are not found acceptable. Therefore, if a quality control measure is found to be out-of-control, and the data is to be reported, all samples associated with the failed quality control measure are reported with the appropriate data qualifier.

14. CORRECTIVE ACTION PROCEDURE

Corrective action is the process of identifying, recommending, approving, and implementing measures to counter unacceptable departures from policies and procedures or out of control QC performance which can affect data quality.

Deficiencies cited in the external assessment (ELAP inspection), internal quality audit, complaints, and managerial review are documented. Records shall be available to show that the root cause(s) of the deficiencies are investigated, including the results of the investigation. Records shall be available to document the intended corrective action. Records shall be available to show that the implemented corrective action is monitored for effectiveness. The Quality Manager maintains these records. The Technical Director will ensure that the corrective actions are discharged within the agreed upon time frame. When nonconformances and departures from SOPs cause doubt about the laboratory's operations the affected areas are promptly audited.

Method SOPs provide QC acceptance criteria and specific protocols for corrective actions. Any QC measure result that falls outside of acceptance limits requires corrective action. When testing discrepancies are detected



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 26 of 35

such as out-of-control QC, the analyst will follow the specific protocol for corrective action as stated in the method SOP located in the Methods Manual. In addition, any discrepancies are documented in the Corrective Action Log maintained in the laboratory. The discrepancy will be identified, and the sample data associated with the discrepancy will be flagged. The Quality Manager will recommend corrective actions to be initiated by the analyst and ensure implementation and documentation of the corrective action. Each corrective action log entry is reviewed, signed, and dated by the Quality Manager and the Technical Director. Corrective actions are performed prior to the reporting of the effected data.

15. EXCEPTIONALLY PERMITTED DEPARTURES FROM DOCUMENTED POLICIES AND PROCEDURES OR FROM STANDARD SPECIFICATIONS.

The Technical Director has responsibility for ensuring the lab's policies and procedures are adhered to. Arrangements for known and controlled departures from documented policies and procedures are allowed. Planned departures do not require audits, however, the departure will be fully documented and included the reason for the departure, the effected SOP(s), the intended results of the departure and the actual results. If the data reported to the client is effected adversely, it will be notified in writing. The Quality Manager or Technical Director must approve the departures. The procedures used to document any specific departure is the same as the corrective action procedure.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	

16. PREVENTIVE ACTION

Preventive action is the pro-active process to identify opportunities for improvement rather than a reaction to the identification of problems or complaints.

All employees have the authority to recommend preventive action. Recommendations are made to the Quality Manager if warranted, the Quality Manager develops an action plan to develop, implement and monitor the action. The plan must include controls that will enable objective evaluation of it's suitability. The preventive action is audited under the direction of the Quality Manager.

17. COMPLAINTS

All complaints about the laboratory's activities received from clients or other parties will be documented in a complaint file maintained in the laboratory. The file will contain the date and name of the person receiving the complaint, a description of the complaint, source of the complaint, the resolution, and any written material accompanying the complaint.

The Quality Manager investigates complaints and promptly audits all areas of activity and responsibility involved. The written results of the investigation including actions taken by the laboratory are reviewed by the Technical Director. The results of the investigation are signed and dated by the Technical Director and the Quality Manager.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 28 of 35

18. INTERNAL AUDIT AND DATA REVIEW

A. <u>Data Review</u> - All data, including original observations, calculations and derived data, calibration records, QC records, and a copy of the test report, resulting from the analyses of samples are recorded and kept for five years (ten years for public water supplies) to allow historical reconstruction of the final result. All results are reviewed and evaluated by a second analyst or the Quality Manager before it is reported. Errors detected in the review process are referred to the analyst for corrective action. The Quality Manager assures that all errors found in the review process are documented along with the corrective action.

Each calendar quarter, the Quality Manager or his designee shall audit 5% or 5 data packages, whichever is more. The purpose of the review is to verify that all data integrity requirements are met.

B. Internal Quality System Audits - The Quality Manager will arrange for an internal quality system review annually. The audit will be carried out by trained personnel who are independent (if possible) of the activity being audited. The Quality Manager will review the requirements of the ELAP manual against laboratory operations, and laboratory operations against the laboratory Quality Manual and SOPS. The results of the audits will be documented in writing. Where audit findings cast doubt on the validity or correctness of the data, the lab will take immediate corrective action. Any corrective actions will be documented. The Technical Director will ensure that the corrective-actions are discharged within the agreed-upon time frame. Any client whose work was possibly adversely affected shall be notified in writing. Documented reviews are performed with respect to any evidence of inappropriate actions or vulnerabilities related to data integrity. Allegations are confidentially investigated. All investigations that result in findings of inappropriate activity are documented and shall include any disciplinary actions involved, corrective actions taken, and all appropriate notifications to clients. Documentation is maintained for five years.

C. Managerial Review - The Laboratory Director shall review the laboratory



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 29 of 35

quality system and its testing and calibration activities annually to introduce any necessary changes or improvements. The review will be take into account the outcome of recent internal audits, assessments by external bodies (NYSDOH-ELAP, EcoTest's primary accrediting authority, NYS DEC, USEPA or clients), the results of interlaboratory comparisons, the results of ELAP proficiency tests, any changes in the volume and type of work undertaken, feedback from clients or regulatory agencies and corrective and preventive actions. The findings and any corrective actions from this review will be documented.

19. TRAINING AND REVIEW OF PERSONNEL QUALIFICATIONS

Laboratory management reviews an applicant's level of qualification, experience, and skills against the laboratory's job description requirements before assigning an employee to the laboratory. Each analyst has adequate experience and education to demonstrate specific knowledge of their function and a general knowledge of laboratory operations, test methods, QC procedures, and records management..

New hires will be required to have earned a minimum of an associates degree in a scientific field. In order to perform a test that is new to the employee there must be a training period in which the trainee works with an experienced technician or supervisor until the trainer is satisfied that the trainee is able to perform the test with limited supervision. The trainee is required to take notes while being trained and to carefully read the SOP for the method. The training period will vary depending on the complexity of the test and it is the responsibility of the trainer to continue to assist the trainee and decide when he/she can perform the test independently.

The Technical Director or Quality Manager will keep the following personnel records:



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 30 of 35

- A. The laboratory will maintain a training, file which contains:
 - A statement from each employee that they have read, understood, and are using the latest version of the laboratory Quality Manual and SOPS.
 The statement will be signed and dated.
 - 2. A statement from each employee that they have read, acknowledged and understood their personal ethical and legal responsibilities including the potential punishments and penalties for improper, unethical or illegal actions. The statement will be signed and dated.
 - 3. A Demonstration of Capability (DOC) for each employee for each accredited method.
 - 4. Documentation of any training courses, seminars, and/or workshops
 - 5. Documentation of each employee's continued proficiency to perform each test method by one of the following annually:
 - acceptable performance of a blind sample (single blind to the analyst) for each accredited method;
 - ii. another Demonstration of Capability;
 - iii at least four consecutive Laboratory Control Samples with acceptable levels of precision and accuracy;
 - iv. if i iv cannot be performed, analysis of authentic samples that have been analyzed by another trained analyst with statistically indistinguishable results.
 - B. <u>Demonstration of Capability (DOC)</u> A DOC must be performed prior to using any test method, and any time there is a change in instrument type, personnel, or method. The procedure will follow ELAP Certification Manual Item 233, and the DOC Certificate included therein is completed for each analyst for each accredited method. EcoTest Labs, through QC charting,



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 31 of 35

has historical data adequately demonstrating analysts' capability to meet the laboratory-generated acceptance criteria. Where the analyst has demonstrated capability through analysis and QC charting, of Laboratory Control Samples with acceptable results, the procedure for demonstrating continued proficiency to perform the test method (above) will be used for the DOC Certification Statement.

20. DATA INTEGRITY & ETHICS

Data Integrity/Ethics training shall occur for each employee required to perform laboratory testing either at the initial hiring orientation or within two weeks after assignment to laboratory functions. Annual training is also required for all employees. Training may be conducted in-house or externally. A record of training and a signed attestation by the trained employee shall be placed in the employee's training file.

Topics covered are documented in writing and provided to all trainees. Key topics covered are the organizational mission and its relationship to the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues and record keeping. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring and data integrity procedure documentation. Trainees are required to understand that any infractions of the laboratory data integrity procedures will result in a detailed investigation that could lead to very serious consequences including immediate termination, or civil/criminal prosecution.

The initial and annual refresher data integrity training shall have a signature attendance sheet that demonstrates all staff have participated and understand their obligation related to data integrity/ethics. Specific examples of breaches of ethical behavior should be discussed including improper data manipulations, adjustments of instrument time clocks, and



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 32 of 35

inappropriate changes in concentrations of standards. Data integrity training requires emphasis on the importance of proper written narration on the part of the analyst with respect to those cases where analytical data may be useful, but are in one sense or another partially deficient.

Senior managers/department heads acknowledge their support of these procedures by upholding the spirit and intent of the laboratory's data integrity procedures and effectively implement the specific requirements of the procedures. See Appendix A.

21. REPORTING ANALYTICAL RESULTS

The results of each test carried out by the laboratory are reported accurately, clearly, unambiguously, and objectively. Final reports to clients will have each page numbered sequentially indicating total number of pages in report on each page. Client will always be notified in writing, in advance of any lab work subcontracted. Subcontractors will be NY State ELAP approved if analytes are subject to approval. As a minimum, the NYS ELAP ID number of the subcontractor will be listed on the report.

The following information will be included on all reports:

- 1.) Title "Analytical Parameters".
- 2.) Name and address of laboratory, and location where the test was carried out if different from the address of the laboratory and phone number with name of contact person for questions;
- 3.) Unique identification of report and each page, including the total number of pages;
- 4.) Name and address of client, where appropriate and project name, if applicable
- 5.) Description and unambiguous identification of the tested sample including the client identification code;
- 6.) Identification of results derived from any sample that did not meet





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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 33 of 35

sample acceptance requirements, such as, improper container, holding time, or temperature;

- 7.) Date of receipt of sample, date and time of sample collection, date(s) of performance test, and time of sample preparation and/or analysis if the required holding time for either activity is less than or equal to 72 hours.
- 8.) Identification of test method used, or unambiguous description of any non-standard method used;
- 9.) If the laboratory collected the sample, reference to the sampling procedure;
- 10.) Any deviations from (such as failed QC), additions to or exclusions from the test method (such as environmental conditions), and any non-standard conditions that may have affected the quality of the results, including the use and definitions of data qualifiers;
- 11.) Measurements, examinations and derived results, supported by tables, graphs, sketches and photographs as appropriate, and any failures identified; reporting units on a wet or dry basis;
- 12.) When required a statement of the estimated uncertainty of the result (NOTE: this NELAP requirement is for radiochemistry only and therefore does not apply to EcoTest reports of analysis);
- 13.) A signature and title, or an equivalent electronic identification of the person(s) accepting responsibility for the content of the of the report, and date of issue:
- 14.) Clear indication of data provided by outside sources, such as subcontracted laboratories, clients etc; and,
- 15.) Clear identification of numerical results with values outside of quantitation limits.

Subcontracted laboratories are identified by name and/or accreditation number on the report.

If errors are detected in the report, a subsequent revised report will be issued. The updated report will be titled "Corrected Report. If changes are made that are requested by client after initial report is issued that do not involve errors, the report will be indicated as an "Amended Report".

If the laboratory discovers equipment used to derive results in any report casts doubt on the validity of the result it shall notify the client(s) in writing.



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 34 of 35

The laboratory shall, where clients require transmission of test results by telephone, telex, facsimile or other electronic or electromagnetic means, follow documented procedures that ensure that the above requirements are met and that confidentiality is preserved.

22. CONFIDENTIALITY AND PROPRIETARY RIGHTS

Reports of laboratory analysis will only be released to the named contact person on the sample submittal form or job contract. Proprietary information, if provided by the client, will be protected as Confidential Business Information in accordance with Title 40, Code of Federal Regulations, Part 2, Subpart B.

23. LABORATORY DATA SYSTEMS AND STORAGE & RETRIEVAL OF DATA AND RECORDS

A. <u>Laboratory Information Management System (LIMS)</u> consists of a Unix based multiuser system utilizing Filepro data base software. The system was designed by our staff to fulfill our particular needs. This system handles sample log-in and generation of final reports. Analysts enter final results for all testing into this system. The system tracks samples and worksheets are generated daily to inform analysts of all uncompleted analysis. This network is not linked to any other computer system in the lab and is therefore isolated from outside viruses or other corruption. Analysts must have password to log onto system. Access by analysts is limited to current and previous year. Results are currently available on the system back to and including 1986 to selected personnel. Backups of different levels are made daily, weekly and monthly. Copies of complete backups are stored in the lab office and offsite by selected personnel. A second network of computers links all GC/MS instruments and certain GCs. This system is used to transfer data for reporting, archiving, and QC reporting. Only analysts using the instruments have passwords for system



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LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 35 of 35

- B. <u>Electronic record archiving system</u> for lab reports consists of storage of complete backup tapes both in office and offsite. System currently contains all reports from inception of system in 1986 to present. Electronic data from instruments such as GC/MS and GC is copied to CD ROM disks and archived in lab. ICP raw data from all runs is stored on the instrument's hard drive and on a second hard drive in another computer.
- C. <u>Hardcopy data and record storage systems</u> are maintained for all paper records going back at least five years for all records except public drinking water which must be kept for at least ten years. These records are stored in designated storage areas in marked boxes in the lab and in a 40 foot storage container between buildings one and two in a fenced area. A detailed description for location of records is kept in office by QC manager.
- D. <u>Lab analyst notebook storage system</u> consists of a filing system of individual analysts' notebooks filed by analyst's name and chronologically. These are stored in the lab. Analysts are instructed not to remove their analytical notebooks from the lab at any time. QC officer has list of individuals who perform tests historically.

24. REFERENCES

- 1. Standard Methods for the Examination of Water and Wastewater, l8th, 19th, & 20th eds., APHA.
- 2. National Environmental Laboratory Accreditation Conference, Constitution Bylaws, and Standards, Approved July 2002, Chapter 5, Quality Systems.
- 3. New York State Environmental Laboratory Approval Program, Certification Manual

JUDY V. HARRY P. O. Box 208 120 Cobble Creek Rd. North Creek, NY 12853

Occupation:

Data Validator/Environmental Technical Consultant

Years Experience:

30

Education:

B.S., Chemistry, Magna cum laude, 1976, Phi Beta Kappa

Certifications:

New York State Woman-Owned Business Enterprise (WBE)

Relevant Work History:

Data Validation Services: September 1989 - present

Sole proprietor of Data Validation Services, providing consultation/validation services to various regulatory and commercial clients.

These services include the review of analytical laboratory data for compliance with respect to specific protocols, accuracy and defensibility of data, verification of reported values, and evaluation of quality parameters for analytical usability of results. Approved by USEPA, NYSDEC, NJDEP, and NYCDEP as a data validator for projects, including USEPA Superfund, Brownfield, and lead sites, and those contracted through the NYSDEC Division of Hazardous Waste Remediation, Division of Solid Waste, and Division of Water Quality.

Performed validation for compliance with protocols including USEPA OLM, USEPA OLC, USEPA ILM, USEPA DFLM, USEPA SOW3/90, USEPA SOW 7/87 CLP, USEPA SOW 2/88 CLP, USEPA SW846, RCRA, AFCEE, NYS 6 NYCRR Part 360, 40 CFR, air analysis methods, 1989/1991/1995 NYSDEC ASPs, and 1987 NYSDEC CLP. Performed validation according to the USEPA National and Regional SOPs and Functional Guidelines, AFCEE requirements, NYSDEC Validation Scope of Work, and NJDEP Division of Hazardous Site Mitigation/ Publicly Funded Site Remediation SOPs. Experienced in performing NYSDEC data usability summary reports under the protocols and procedures set by NYSDEC ASP for Cat. B Deliverables.

Performed validation for USEPA Superfund Sites including BROS, Salem Acres, York Oil, Port Washington L-4 Landfill, Bridgeport Rental and Oil Services, MMR/OTIS AFB, and Peter Cooper site; and for USEPA lead sites including SJ&J Piconne, Maska, Bowe System, and Syossett Landfill, involving CLP, RAS, and SAS protocols.

Contracted for NYSDEC Superfund Standby Contracts with LMS Engineers, Camp Dresser & McKee, Malcolm-Pirnie, Ecology & Environment, and EC Jordan, involving samples collected at NYS Superfund Sites and analyzed under the NYSDEC ASP.

Validated data for NYSDEC Phase II remedial investigations, RI/FS projects, and PRP oversite projects for hazardous waste sites. Was the primary contractor for Lawler, Matusky & Skelly Engineers during fifth and sixth round Phase II investigation, reviewing results for TCL/TAL analyses performed according to EPA CLP and 1989 NYSDEC ASP. Provided data validation for NYSDEC Phase II investigations for Gibbs & Hill, Inc, reviewing results from TCL/TAL analyses performed in accordance with the 1989 NYSDEC ASP.

Performed validation services for clients conducting RI/FS activities involving samples of many matrices, including waste, air, sludges, leachates, solids/sediments, aqueous, and biota; clients have included Arcadis Geraghty & Miller, Barton & Loguidice, Bergmann Associates, Blasland, Bouck & Lee, Brown and Caldwell, Camp Dresser & McKee, C&S Consulting Engineers, Clough Harbour & Associates, Columbia Analytical Services, C.T. Male, Dames & Moore, Day Engineering, EA Engineering, Ecology & Environment, EC Jordan, Environmental Chemical Corporation, EHRT, ENSR Consulting, ERM-Northeast, Fagan Engineers, Fanning Phillips & Molnar, FluorDaniel GTI, Foster Wheeler Environmental Corp, Frontier Technical, Galson Consultants, Geomatrix Consultants, GZA Environmental, Handex of N, H2M Group, IT Corp, JTM Associates, Leader Environmental, Lockwood, Kessler & Bartlett, LMS Engineers, Malcolm-Pirnie, Metcalf & Eddy, O'Brien & Gere Engineers, Parsons Engineering-Science, Plumley Engineering, Prescott Environmental, P. W. Grosser, Rizzo Associates, Roux Associates, Sear Brown Group, SECOR, Shaw Environmental, ThermoRemediation Inc., TRC Environmental, Turnkey Environmental Restoration, TVGA Engineering, URS Consultants, Wehran Emcon, Weston, YEC, and private industries.

Validator for investigations at the Knolls Atomic Power Laboratory site. Validator for NYSDEC and NJDEP sites for samples analyzed according to EPA CLP SOPs, with validation performed according to NJDEP validation procedures. Validator for numerous landfill site investigations for TCL/TAL and NYS 6 NYCRR Part 360 analytes.

Provided consultation services to laboratories regarding analytical procedures and protocol interpretation, and to law firms for litigation support.

Provided services to firms involving audits of environmental analytical laboratories to determine analytical capability, particularly for compliance with NYSDEC ASP and AFCEE requirements.

Guest speaker on a panel discussing Data Review/Compliance and Usability, for an analysts workshop for the New York Association of Approved Environmental Laboratories, 1993.

Adirondack Environmental Services: June 1987 - August 1989

Senior mass spectroscopist for AES. Responsible for GC/MS analyses of environmental samples by USEPA and NYSDEC protocols; development of the GC/MS laboratory, initiating the instrumental and computer operations from the point of installation; and for implementing the procedures and methodologies for Contract Laboratory Protocol.

CompuChem Laboratories: May 1982 - January 1987

Managed a GC/MS production laboratory; developed, implemented, and supervised QA/QC criteria at three different levels of review; and was responsible for the development and production of the analysis of environmental and clinical samples. Directed a staff of 23 technical and clerical personnel, and managed the extraction and GC/MS labs and data review operations.

Research Triangle Institute: December 1979 - May 1982

Worked as an analytical research chemist responsible for development of analytical methods for the EPA Federal Register at RTI. This involved analysis of biological and environmental samples for priority pollutants, primarily relating to wastewaters and to human sampling studies. Method development included modification and interfacing of the initially developed Tekmar volatile purge apparatus to GC/MS, and the analysis and resolution/identification of individual PCB congeners within Aroclor mixtures by capillary column and mass spectra.

Guardsman Chemical Company: February 1977 - November 1979

Performed all quality control functions for the manufacturing plant. Performed research and development on coatings and dyes.

Almay Cosmetics: May 1976 - December 1976

Product evaluation chemist. Responsible for analytical QC of manufactured products.

Data Validation Services STATEMENT OF QUALIFICATIONS

Data Validation Services (DVS) offers consultation and validation services pertaining to environmental analytical processing and data usability interpretation. DVS has performed services for USEPA, NYSDEC, NYSDOT, NYCDEP, and NJDEP projects since 1989.

Judy Harry, the owner of DVS, has the following qualifications:

Proprietor of Data Validation Services since start-up in September, 1989, completing project/contract review of data generated from methodologies of USEPA OLMx.x, ILMx.x, DFLMx.x, EPA SOW787, EPA SOW288, USEPA SW846, RCRA, 40CFR Part 136, 40CFR Part 141, Compendium Methods, ASTM, 1987/1989/1991/1995/2000 NYSDEC ASP, 6 NYCRR Part 360, and others.

Validation is available utilizing USEPA National Functional Guidelines, USEPA Regions I, II, III, V, and IX SOPs and guidelines, NYS RI/FS Validation Scope of Work, NYS DUSR, AFCEE, and NJDEP QA validation procedures.

- Has been consistently approved for validation of data from USEPA lead sites, including numerous USEPA Superfund and Brownfield sites.
- Exceeds all NYSDEC qualifications and requirements for performing the validation functions as outlined in the NYSDEC RI/FS Program, and has performed review and usability determinations for numerous state lead projects, including NYS Superfund and Brownfield sites.
- Has been approved by the NYSDEC Division of Hazardous Waste Remediation for serving as a project-specific Quality Control Officer (QAO).
- Performs consultation services for laboratory and consultant firms, developed and enhanced from extensive laboratory background and method familiarity. These services include litigation support, project data management, and generation of SOPs.
- Has performed laboratory audits for NYSDEC Superfund Standby Programs, AFCEE, and as a consultant to evaluate and improve laboratory processing.
- Fourteen years of experience in independent validation of environmental analytical data. Thirteen additional years of experience as an environmental laboratory chemist and manager, with ten years specifically in the field of Mass Spectrometry. Experience includes development of many of the methods currently utilized for environmental analysis.

- B. S. in Chemistry, 1976, magna cum laude, University of North Carolina at Greensboro.
- Development of EPA Federal Register protocols for analysis of Priority Pollutants in wastewaters and sludges (Research Triangle Institute, NC).
- Development of GC/MS capillary analyses of PCB congeners and of low level volatile organics, including refinement of the developing instrumentation (1979 through 1982, RTI, RTP, NC).
- Production Development Specialist and Clinical GC/MS Manager (1982 through 1987, CompuChem Labs, RTP, NC).
- Developed GC/MS environmental laboratory, and instituted Contract Laboratory Protocol methodologies (1987 through 1989, AES, Rensselaer, NY).
- Completed courses in operation of mass spectrometry systems, interpretation of spectra, and supervision and management of laboratory and personnel.

Data Validation Services has been certified since 1990 by New York State Governor's Office of Woman and Minority Business Development as a Woman-Owned Business Enterprise (WBE).

Extensive analytical experience, as well as familiarity with protocol and laboratory operations promotes efficiency and completeness in the review process. This enables Data Validation Services to produced quality work in a timely fashion.

The attached resumé outlines specifics related to qualifications noted above. Sample review reports and references are available upon request.

APPENDIX D

INTERIM REMEDIAL MEASURES (IRM) PLAN

- The Additional Subsurface Investigation report prepared by GCE for the Site dated 1. December 6, 2005 revealed the following:
 - Chlorinated hydrocarbons or solvents present at the Site include tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), dichloroethane (DCA) and their isomers. With the assertion of the contract their isomers. With the exception of soil boring B-1 located in the area of former from the dry well these compounds are side. dry well, these compounds are either not detected in the soil borings, or detected far below their detection limits. Detailed information supporting the extent of the IRM is included in the Site Characterization (SC) Work Plan.

- The IRM will begin within 4 weeks after completion of the contaminated soil delineation 2. component of the PSA. A summary of the results of the contaminated soil delineation along with the laboratory report and a scaled plan depicting the limits of the excavation, will be submitted to the DEC for review prior to commencement of the IRM. GCE will receive DEC's comments and/or approval in a timely manner. The dry well remediation activities will be completed within approximately one (1) week and the site restoration will be completed within approximately 1 week after completion of the soil excavation.
- The concrete floor slab will be removed within an area that will allow for excavation of 3. the contaminated soil. Upon floor slab removal, the contaminated soil will be excavated to a depth that is established during the subsurface investigation performed as a part of PSA but not to any depth which might potentially undermine the integrity of the on-site structure and otherwise within the Site's constraints. Soil samples will be field screened for the presence of total volatile organic compounds (VOCs) using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards. The excavation will be terminated when the desired depth is achieved and soil exhibiting no elevated levels of total VOCs, olfactory or visual evidence of contamination is encountered. The soil samples will be visually classified and logged by the GCE's on-site geologist for soil characterization purposes. Laboratory obtained glassware will be used for the soil samples and will consist of the following:
 - Volatile Organic Compounds (VOCs) one (1) 4-ounce glass jar equipped with teflon-lined cap per sample;
 - Semi-Volatile Base-Neutrals Organic Compounds (SVOCs) one (1) 8-ounce glass jar equipped with teflon-lined cap per sample;

The soil samples will be placed into two (2) glass containers equipped with teflon-lined caps. Air in the head space of the one (1) container (SVOCs) will be allowed to develop. The head space will be field screened for the presence of total VOCs using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards.

Since the excavation is expected to be less then 20 feet in perimeter, soil samples from the contaminated soil excavation will be collected at 3-foot vertical intervals from each sidewall and from the bottom of the excavation. Soil samples will be field screened using a PID. Each soil sample will be assigned its unique identification number and will be logged into project documentation. Due to the heterogeneous nature of the soil, a large number of soil samples may be required and no composite soil samples will be collected. All soil samples will be visually classified by the on-site geologist.

Post-excavation samples will be collected in accordance with the requirements as outlined in Section 5.4 of DER-10 as follows:

At least two (2) post-excavation soil samples will be collected from the lowest point of the excavation bottom and at least one (1) post-excavation soil sample (a total of at least 4 samples) will be collected from each sidewall of the excavation, at a depth representing 2/3 of the total excavation depth. One (1) of the sidewall samples will be biased in the direction of surface runoff. All samples will be collected from evenly distributed intervals.

The soil samples will be logged and transferred under a chain-of-custody protocol to a New York State ELAP-approved laboratory. All soil samples will be analyzed for the presence of VOCs using EPA Method 8260 and SVOCs using EPA Method 8270. Soil sampling results will be compared to the Restricted Use Soil Cleanup Objectives - amount and Protection of Groundwater Standards as outlined in 6NYCRR Part 375-6.

use

All excavated soil will be placed on and securely covered by 2 layers of 10-mil polyethylene sheeting on the south portion of the Site. The excavated soil will be disposed of based on the laboratory results of pre-disposal soil samples. The pre-disposal soil samples will be analyzed in accordance with the disposal facility requirements and RCRA hazardous characteristic.

Gregory Collins of GCE will oversee excavation activities. (competent person) See part of the person that the person of the pers

The contaminated soil pile will be lightly sprayed with water. Issues of health effects of 4. dust impact will be handled by using personal protective equipment as outlined in the Health and Safety Plan provided in the PSA. Odor and organic vapor control and monitoring procedures will be implemented as described in the Health and Safety Plan provided in the PSA. In the event that the odor or organic vapor monitoring indicate the need for control measures, GCE will ventilate the work area using a fan or blower system equipped with carbon filters prior to air discharge to the atmosphere.

During the site restoration, GCE will adhere to the following:

Excavation Backfilling

a. GCE will utilize Coarse Aggregate Type A1: Crushed Stone or Crushed Gravel: Angular crushed washed stone; free of shale, clay, friable material and debris; graded in accordance with ANSI/ASTM C136, ASTM D2487; within the following limits: 3 % maximum passing #8 sieve

Minimum Size: 1/8 inch
 Maximum Size: 1/2 inch

- b. All fill material will be inspected prior to its placement.
- c. Backfill will be systematically placed to allow maximum time for natural settlement. Backfill material will compacted in continuous layers no exceeding 6 inches. No frozen backfill material will be placed.
- d. Backfilled material will be properly compacted.
- e. GCE will employ a placement method that does not disturb or damage structures of other items against which material is backfilled.

As indicated above, backfill will be comprised of unregulated material. Therefore, GCE $\sim \ell^{\ell}$ requests a site specific exemptions for the backfill analytical testing requirements.

Concrete Floor Restoration

- a. GCE will restore the floor slab to meet existing conditions using Class A 3,500 psi concrete, buff color Portland cement, exposed aggregate finish.
- b. GCE will moisten base to minimize absorption of water from fresh concrete and place 1 layer of 6-mil polyethylene sheeting on top of subgrade prior to concrete placement.
- c. GCE will provide bonding material to the edge of the existing concrete prior to concrete pouring.
- d. GCE will pour concrete continuously between predetermined construction joints if any. GCE will not break or interrupt successive pours such that cold joint occur.
- e. The exposed concrete surface will be maintained continuously hydrated for a maximum of 7 days from pouring.
- f. The area will remain closed and heated for the duration of the required curing.

Upon completion of site restoration activities, GCE will prepare a scaled drawing detailing size of the soil excavation, backfill placement and concrete floor restoration. The drawing will be based on the field measurements which will be taken during on-site investigation and remediation activities.

5. A Health and Safety Plan is included in the PSA Work Plan. Due to the limited size of the excavation, no community air monitoring will be required. However, no individuals will be allowed at the Site who are not participating in the IRM work (other than representatives of DEC or other regulatory agencies) and in the event that odors or



IRM

organic vapors will be encountered, such odor/vapors will be evacuated to the atmosphere as described in section 4 above.

- 6. Since no remedial structures and/or equipment will be installed and/or removed from the Site, no contingency plan for their dismantling is required.
- 7. Since the Site has a "P" status, no citizen participation plan is required.
- 8. Since no on-site treatment system will be installed, no OM&M Plan is required.
- 9. The IRM report, prepared after completion of the IRM activities will contain a description of the IRM activities and documentation of the backfill material origin. This report will be certified by the PE overseeing the work and will include statement certifying the origin and characterization of the backfill.
- 10. Due to the nature of the proposed remedial activities, no institutional controls will be implemented at the Site.

