WORK PLAN

BLASLAND & BOUCK ENGINEERS, P.C.
BLASLAND, BOUCK & LEE

Response to NYSDEC Comments
June 21, 1988
Former Liberty Aircraft Site
Farmingdale, New York

Shea and Gould
New York, New York

October 1988

WORK PLAN
RESPONSE TO NYSDEC COMMENTS
JUNE 21, 1988

FORMER LIBERTY AIRCRAFT SITE
FARMINGDALE, NY

PREPARED FOR
SHEA AND GOULD
1251 AVENUE OF THE AMERICAS
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OCTOBER 1988

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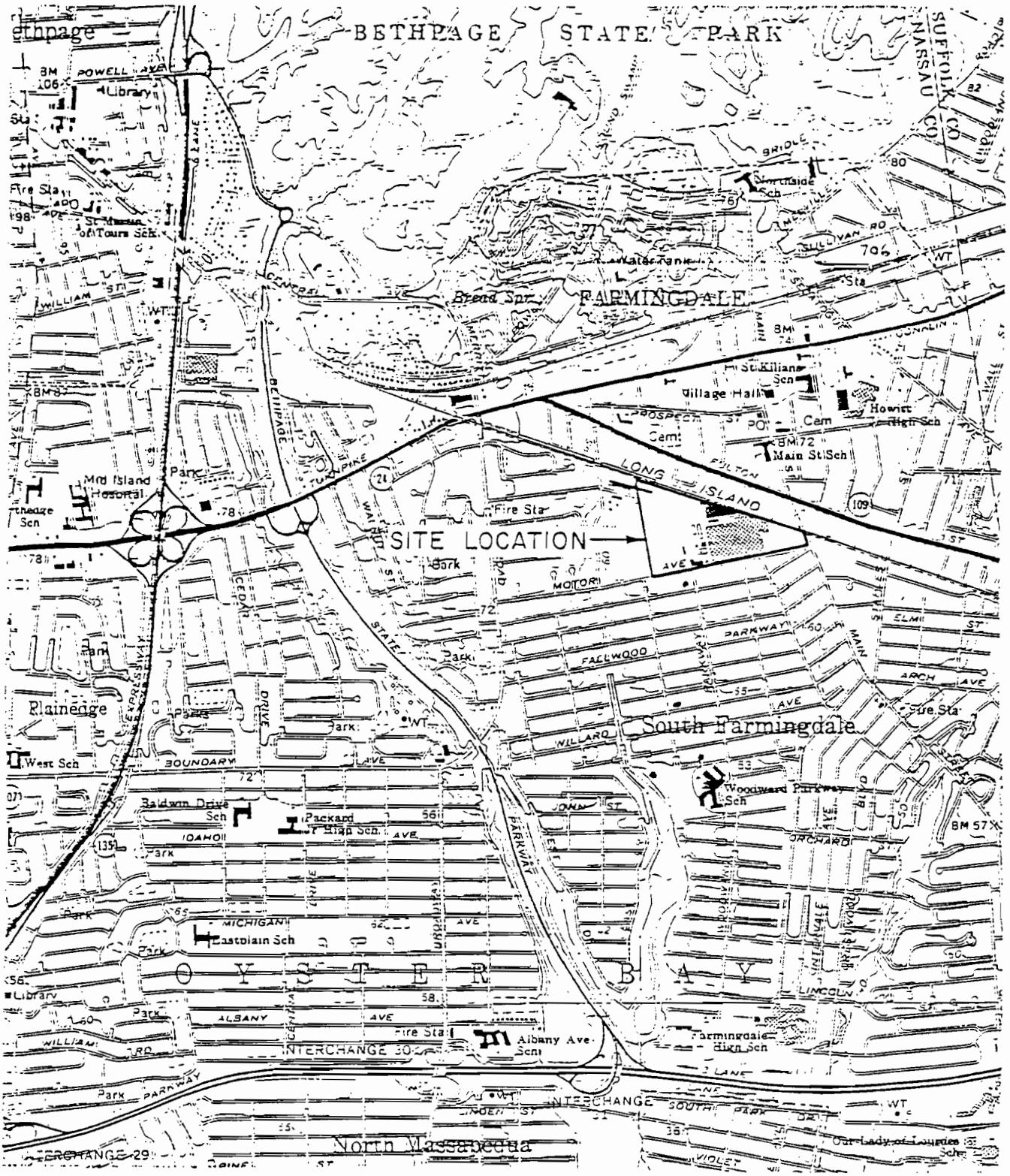
INTRODUCTION

Blasland & Bouck Engineers, P.C. (Blasland & Bouck) Syosset, New York has been retained by Shea and Gould, New York, New York to respond to comments put forth by the New York State Department of Environmental Conservation (NYSDEC) in a June 21, 1988 meeting regarding further investigatory requirements for completion of the RI/FS at the former Liberty Aircraft site located at 55 Motor Avenue, Farmingdale, NY (Figure 1).

This document is the work plan proposed by Blasland & Bouck that addresses each individual requirement of NYSDEC for completion of the RI/FS at the former Liberty Aircraft site. A brief description and history of the site is found in reports of previous investigations performed by Lockwood, Kessler, and Bartlett, Inc., Syosset, New York entitled, "Former Site of Liberty Industrial Finishing Corporation, Farmingdale, New York", November 1985 and July 1986.

Based on the previous investigations, all contaminated soils within the disposal basins, stormwater basin and sludge pit, have been removed and disposed of appropriately in accordance with EPA and NYSDEC regulations. Lockwood, Kessler and Bartlett, Inc. implemented and completed the RI/FS and Remedial Action Plan, at the site. At the completion of the RI/FS, NYSDEC was left with a few unanswered questions pertaining to the remainder of the property.

FIGURE 1



SHEA AND GOULD

FORMER LIBERTY AIRCRAFT SITE

LOCATION MAP

SCALE

2000' 0' 2000'

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50663

As a result of these unanswered questions, 55 Motor Ave. Co., the present owners of the property have been requested by NYSDEC to perform a supplemental study to complete all remaining aspects of the RI/FS.

The requirements set forth by NYSDEC pertain to both on-site and off-site conditions, and are as follows:

On-Site Requirements

- Any underground facilities, such as storage tanks, are to be located. If underground tanks did exist their locations should be identified and any potential for contamination from those tanks evaluated.

- On-site wells for water supply are to be identified. The status of the wells (operational, non-operational) should be established. If the wells are closed that should be noted. If wells are still operational their use should be established.

- The status of the on-site water tank should be established. Is it used? If so, how?

- The grid system for soil samples should be established to cover the entire site. The basis of the grid system should be presented as well.

- The status of existing buildings should be established. Are they contaminated? What were they used for and what are they presently

being used for?

- For buildings that were removed, information on how they were used should also be established.

- A Citizen Participation Plan should be developed whose objective is to inform the public in cooperation with NYSDEC on the status of the site and the investigation programs that are underway or proposed.

Off-Site Requirements

- The off-site plume that was documented in previous studies will be up-dated to the present conditions.

ON-SITE REQUIREMENTS

Task I - Inventory of Underground Facilities

Any underground storage tanks that still exist at the site will be identified and their locations plotted on the base map.

For underground storage tanks that still exist on-site a determination of their current status will be performed. This will be done by first removing the fill cap for each tank and measuring any release of organic vapors with a portable photoionization detector (PID). The next step will be to determine if the tanks contain any liquids or not, and if so to try and visually identify the amount and type of liquids present.

Any inactive underground storage tanks will be permanently taken out-of-service by 55 Motor Ave. Co., in accordance with 6NYCRR Part 613.9(b), "Closure of tanks permanently out-of-service"; and in accordance with Part 613.9(c) "Reporting of out-of-service tanks".

Task II - Identify On-Site Water Supply Wells and Status of On-Site Water tank

The status of any existing water supply wells will be established at this time. Up to this point, Blasland & Bouck has identified four water supply wells on the property. These wells were discovered in a literature search for non-public supply wells in Nassau County. The document listed four water supply wells formerly owned by Liberty Aircraft.

As part of this task, these four wells will be located and their current status evaluated. The existence of any additional water supply wells will be determined at this time, and the wells located on the base map. For any water supply wells found on-site an attempt will be made to obtain a copy of the well log for that well documenting depth, screen zone, aquifer used, pumping rates, etc. For any water supply wells that are still operational, their usage will be documented along with pumping rates an schedules.

The final objective of this task will be to determine the status of the on-site water tank, (if it is used or not, and if so, how).

Task III - Soil Boring and Sample Collection

The purpose of the soil boring and sampling program is to screen the site for any further potential sources of contamination. This task will confirm if any additional sources exist over the remainder of the site.

Blasland & Bouck proposes that 20 soil borings be drilled at the site to an approx. final depth of 8 feet below land surface. It is proposed that 14 soil borings will be located on the 14 acre plot of land previously identified as tax lot #327 (West). These boring locations will be centered on a grid spacing of one boring per acre (Figure 2). For tax lot #326 (East), it is proposed that a total of six borings be strategically located throughout the 17 acre site (Figure 2). The rationale behind this is that at one time more than half of this lot was occupied by buildings, and that reportedly all disposal of metal plating effluent took place on the adjacent west lot (#327).

All soil borings will be drilled by Delta Well and Pump Co., Inc., Ronkonkoma, New York, using a hollow stem auger rig. The boring locations and final depths will be determined by the supervising geologist from Blasland & Bouck. Split-spoon soil samples will be collected continuously (every two-feet) from land surface to the bottom of the boring. Once the sample is collected, the split-spoon sampler will be opened by the geologist on a clean piece of plastic sheeting, and the lithology logged in detail in the field book. The geologist will be paying particular attention to any

evidence of contamination (staining, metallic sludge, odor, texture) when logging each sample.

It is anticipated that during the soil boring program a total of twenty (20) soil samples will be collected for laboratory analysis for total chromium and cadmium, following EPA Methods 7190 and 7130 respectively, and cyanide (amenable to chlorination) following EPA Method 9012. All soil samples collected for analysis will be handled following the protocols in Appendix A. All samples will be shipped to Nytest Environmental Laboratories, Port Washington, New York, at the completion of each working day. A chain-of-custody will be maintained for each sample from time of collection through to receipt by the laboratory. A copy of the chain of custody record is supplied in Appendix B.

In response to New York State Department of Health concerns regarding the concentrations of chromium, cadmium, and cyanide at the site, with respect to human exposure pertaining to the possibility for condominiums to be built in the future, Blasland & Bouck is proposing that all soil samples be analyzed for total chromium, cadmium, and cyanide (amenable to chlorination).

In addition as part of the QA/QC, for every sample collected for analysis, a portion of that sample will be retained in a separate jar as a backup. All samples will be handled in the same manner, the backup samples will be analyzed should the need arise in the event of a sample being damaged during shipment, or confirmation of any results be required.

The second reason for retaining the additional sample is that if any of the soil samples should show high levels of any of the analytes, the backup sample can be run for EP toxicity analysis to determine if the soil is RCRA hazardous. The test methods to be used for cadmium and chromium are defined in Appendices I and II of 40 CFR 261. The recommended test method for cyanide is EPA Test Method 7.3.3.2.

To minimize the potential for any cross-contamination of soil samples, several split-spoon samplers will be used. Before any split-spoon sampler is used to collect a sample it will be decontaminated in the following manner:

a. soap and water wash with potable water rinse;

b. 10 percent nitric acid wash with potable water rinse; and

c. rinse three times with distilled water.

In addition all drilling equipment (auger flights, sampling rods, etc.) will be steam cleaned between each boring, and all equipment will be decontaminated appropriately prior to entering and leaving the site at the end of the job.

At the completion of each soil boring the borehole will be backfilled with the cuttings brought up during drilling.

Task IV - Status of Existing and Former Buildings

The status of all existing buildings at the site will be determined by Blasland & Bouck by conducting a environmental audit for each building. An environmental audit will give us an indication of whether or not any potential past/present sources of contaminants exist, Blasland & Bouck has conducted environmental audits throughout the United States and has developed a standard format for this procedure. A copy of the format is provided in Appendix C.

In addition to the environmental audit on the existing buidlings, an attempt will be made to retrieve historical aerial photographs of the site. These photographs will give us an overall picture of past practices at the site and any potential point sources may be identified. Also, a literature search and interviews with previous occupants of both the existing and former buildings will be conducted, if possible. This will also include a title search of the property dating back to the inception of the site as an industrial facility.

As a result of this task, Blasland & Bouck will compile a detailed site history of the property, depicting past and present usage of the site.

Task V - Citizens Participation Plan

In conjunction with this work plan, a Citizens Participation Plan will be developed and implemented prior to the start of any field work. This plan will include, but not be limited to, the following:

a. a series of fact sheets that will be distributed to the community during the investigation and will describe up-to-date progress;

b. telephone briefings to key members of the community action committees; and

c. periodic news releases that describe progress at the site.

The files containing the administrative record are kept on file at the Farmingdale Public Library located at the intersection of Conklin and Main Streets in the center of town. This file will be up-dated as the investigation continues to contain all monitoring and analytical results, fact sheets, and the Citizens Participation Plan developed for this investigation.

The objective of the plan will be to keep the community informed and up-to-date on all work completed, analytical results received, and any new developments which may arise during the course of the investigation.

OFF-SITE REQUIREMENTS

Task VI - Up-date of Off-Site Plume

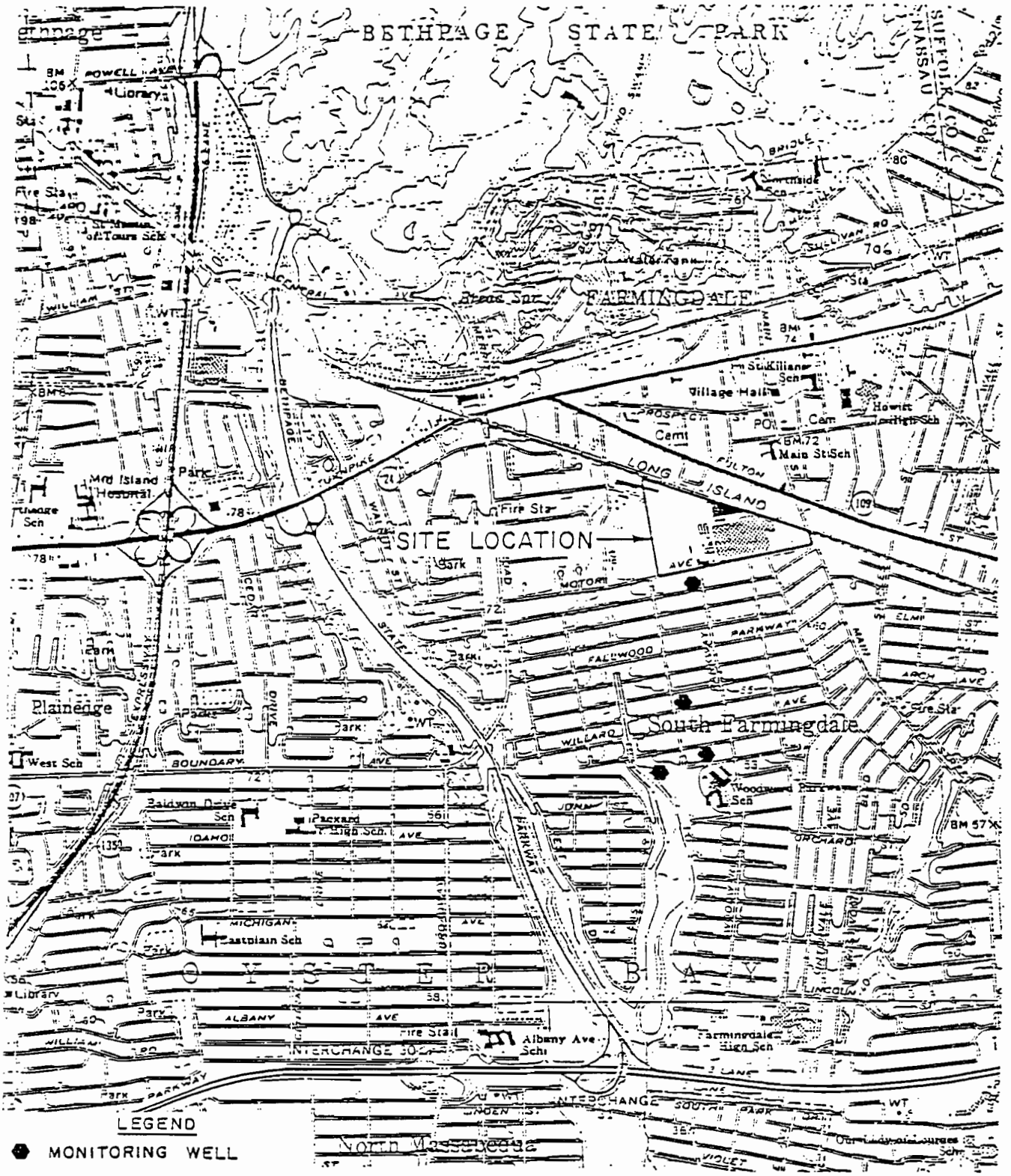
The existence of an off-site plume has been documented as far back as the early 1940's and has been studied extensively over the years. It has been determined from these studies that although ground-water contamination by cadmium and chromium does exist, there is no immediate threat to human health or the environment.

As part of the RI/FS investigation conducted by Lockwood, Kessler and Bartlett, Inc., four small diameter (1 1/4 inch) off-site monitoring wells were sampled on several occasions (Figure 3). In keeping with the requirements of this supplemental study, Blasland & Bouck will sample these four monitoring wells, if possible, along with the three on-site monitoring wells. These wells have already been located by Blasland & Bouck as part of the preparation for the work plan (Figure 3).

The purpose of sampling the off-site wells is to provide NYSDEC with an up-date as to the concentrations of chromium and cadmium downgradient of the site. The analytical data received from this sampling will be compared to results of previous studies and reduced into a table for NYSDEC to review.

The four off-site monitoring wells and the three on-site wells will be

FIGURE 3



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FORMER LIBERTY AIRCRAFT SITE

OFF-SITE MONITORING WELL LOCATIONS

SCALE

2000' 0' 2000'

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inspected for integrity based on the well inspection form provided in Appendix D. If after the initial well inspection is completed and the well is found to still be intact, it will be redeveloped to insure that a hydraulic connection between the well and aquifer still exists. After development if the well is still found to be functional then it will be sampled and the ground water analyzed for dissolved chromium and cadmium, following EPA method 7190 and 7130 respectively. If any of the off-site wells are determined to be unacceptable then an attempt will be made to replace that well with a new one. This will require obtaining permission to install the wells.

The on-site wells will be purged with a Teflon bailer prior to sample collection, the smaller diameter (l 1/4 inch) off-site wells will be purged with a peristaltic pump. Samples will be collected from the on-site wells with a Teflon, bottom loading bailer following the protocols in Appendix E. The smaller diameter off-site wells will be sampled using the peristaltic pump and teflon tubing. All samples will be field filtered using a .45 micron filter and prefilter. After the samples are filtered they will be transferred immediately to the appropriate pre-cleaned, laboratory supplied, EPA approved jars with nitric acid preservative.

All samples will be placed immediately on ice and shipped to Nytest Environmental Laboratories for analysis. A chain of custody will be maintained (Appendix B).

Task VII - Data Analysis and Report

All data obtained during the investigation, along with any pertinent data from previous investigations, will be compiled, analyzed, interpreted and presented as a draft report. The report will include as a minimum:

- o Executive Summary
- o Introduction
- o Site description and history
- o Description of all work accomplished
- o Site plan showing locations of all wells, borings, existing buildings, and underground storage tanks.
- o Geologic logs of all borings
- o A discussion of soil analytical results
- o Tables of all analytical results
- o Discussion of ground-water quality.
- o Discussion of the results, findings and conclusions of the investigation.

It is anticipated that this draft report will be completed within four weeks of receipt of all analytical data.

Appendices

APPENDIX A

Protocol For the Collection of Soil Samples For Laboratory Analysis

PROTOCOLS FOR THE COLLECTION OF SOIL SAMPLES FOR LABORATORY ANALYSES

Procedure

1. Split-spoon core samplers or stainless steel bucket type hand augers are used to collect sediment samples.

2. Prior to collection of the soil sample, all sampling equipment is thoroughly pre-cleaned according to standard decontamination protocols.

3. Once the sample is collected it is placed on a clean plastic sheet and logged in detail by the geologist as quickly as possible to reduce the potential for the loss of volatile organics.

4. Using disposable vinyl gloves and pre-cleaned plastic spoons the sample is then placed in appropriate (EPA-approved) laboratory supplied, pre-cleaned containers.

5. The sample containers are then labeled with the following information:

   - Name of person(s) collecting soil sample
   - Sample location
   - Time and date of sample collection
   - Sample designation

6. Samples are then placed immediately on ice to maintain a temperature of 4^{o} C.

7. A chain-of-custody form is completed for each sample collected.

8. At the end of each day samples are delivered or shipped to the laboratory for analysis.

APPENDIX B

Chain of Custody Record

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CHAIN OF CUSTODY RECORD

PAGE ____ OF ____

FILE NO. ____
PROJECT ____
B & B CONTACT ____

LABORATORY ____
ADDRESS ____
CONTACT ____

B & B SAMPLE NO.	LABORATORY SAMPLE NO.	SAMPLING DATE	SAMPLING TIME	SAMPLE DEPTH	SAMPLE TYPE	ANALYSES: VOA	BNA	METALS	PEST/PCB						NO. OF CONTAINERS	COMMENTS (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)

Relinquished	Received
I. SAMPLED AND RELINQUISHED BY SIGN PRINT FIRM DATE TIME	I. RECEIVED BY SIGN PRINT FIRM DATE TIME
II RELINQUISHED BY SIGN PRINT FIRM DATE TIME	II. RECEIVED BY SIGN PRINT FIRM DATE TIME
III. RELINQUISHED BY SIGN PRINT FIRM DATE TIME	III. RECEIVED BY SIGN PRINT FIRM DATE TIME
IV. RELINQUISHED BY SIGN PRINT FIRM DATE TIME	IV. RECEIVED BY SIGN PRINT FIRM DATE TIME

EVIDENCE SAMPLES TAMPERED WITH ☐ NO ☐ YES ☐ N/A

IF YES EXPLAIN IN REMARKS

LIQUID	VOA VIAL										
	GLASS BOTTLE										
	PLASTIC BOTTLE										
	PRESERVATIVE										
	CONTAINER VOLUME										
SOLID	VOA VIAL										
	GLASS JAR										
	PLASTIC JAR										
	PRESERVATIVE										
	CONTAINER VOLUME										

NOTE. SAMPLE BOTTLES SUPPLIED BY LAB, UNLESS INDICATED

PRESERVATION KEY: A - SAMPLE CHILLED, B - FILTERED,
C - ACIDIFIED WITH ____
D - NaOH, E - NaTHIOSULFATE, F - OTHER

REMARKS: (SAMPLE STORAGE, NONSTANDARD SAMPLE BOTTLES)

APPENDIX C

Environmental Site Inspection and Assessment Checklist

ENVIRONMENTAL SITE INSPECTION AND ASSESSMENT CHECKLIST

BUILDING LOCATION

1. Building Designation: _____

_____

_____

DESCRIPTION AND CHARACTERIZATION OF BUILDING

1. General

   1.1 Size (Square Footage): _____

   1.2 Location: _____

   1.3 Construction: _____

   1.4 Structures: _____

   1.5 Security: _____

2. Years of Operation: ___/___/___ to ___/___/___

   Unknown _____

3. Description of Present Operation: _____

_____

_____

_____

_____

_____

_____

4. Previous (Type of operations in building): _____

5. Inside of Building

5.1 Description of Present and Past Building and Operations:

5.2 Floor Drains: _____

5.3 Pipe Network (schematics available): _____

5.4 Potential Presence of Asbestos: _____

5.5 Odors: _____

5.6 Staining/Surface Ponding: _____

5.7 General Housekeeping Remarks: _____

_____

_____

_____

_____

6. Person Responsible for Assessment:

Name: _____

Company: _____

Telephone No.: _____

Date: _____

APPENDIX D

Well Inspection Checklist

WELL INSPECTION CHECKLIST

WELL NO. _____

CHECKLIST FOR INSPECTION OF OUTSIDE OF EXISTING WELLS

	Yes	No	Remarks
1. CEMENT SEAL			
Intact	____	____	_____
Cracked	____	____	_____
Missing	____	____	_____
2. PONDING OF WATER AROUND CEMENT SEAL	____	____	_____
3. PROTECTIVE STEEL PIPE AND LOCK (If Used)			
Pipe - Intact	____	____	_____
Lock - Intact	____	____	_____
4. PVC CASING (Stick-up) STRAIGHT	____	____	_____
5. DESIGNATED LEVELING POINT CLEARLY MARKED	____	____	_____
6. PVC CAP VENTED PROPERLY	____	____	_____
7. WELL IS PROTECTED	____	____	_____
8. WELL IS CLEARLY MARKED	____	____	_____

CHECKLIST FOR INSPECTION OF INSIDE OF EXISTING WELLS

1. BOTTOM OF WELL FROM TOP OF PVC CASING _____
2. STICK-UP _____
3. BOTTOM OF WELL BELOW GRADE _____
4. REMARKS ON INTEGRITY OF CASING _____
_____
5. DEPTH TO WATER FROM TOP OF PVC _____

APPENDIX E

Ground-Water Sampling Procedure-Volatile Organics and Other Constituents

GROUND-WATER SAMPLING PROCEDURE - VOLATILE ORGANICS AND OTHER CONSTITUENTS

1. Identify the well and enter the number in the field notebook.

2. Cut a slit in one corner of a new plastic sheet and slip it over and around the well, creating a clean surface onto which the sampling equipment can be positioned. **Do not kick, transfer, drop or in any way let soil or other material fall onto this sheet unless it comes from inside the well. Do not place any meters, tools, equipment, etc. on the sheet unless they have been cleaned with a clean rag to remove any sediments.**

3. Clean the top of the well off with a clean rag and remove the cap or plug placing it on the plastic sheet.

4. Clean the first 10 feet of the steel tape with a clean rag, then wash with distilled water and measure the depth to water. Record this and compute the volume of water in the well.

5. Existing wells will be purged by the hydrogeologist on site. All monitoring wells will be pumped or bailed before sampling and a minimum of five to ten casing volumes will be removed. Hand bailers, submersible pumps, etc. will be clean and sediment-free prior to use.

6. Record the physical appearance of the water (color, smell, turbidity, etc.) as it is pumped or bailed.

7. Prepare the bottles for receiving their samples (labels, place on ice, etc.).

8. After the well has been purged and developed, a stainless steel/teflon bailer will be used to collect the ground-water sample. This bailer will have been thoroughly pre-cleaned. Immediately prior to lowering in the well, rinse three volumes of distilled water through the bailer. In addition, the first three bailer volumes obtained from the well should be discarded. Use non-absorbent polyethylene cord to lower the bailer into the well. This cord will be discarded after use in the well.

9. Appropriate pre-cleaned, VOA sample bottles supplied by the laboratory are required. Fill bottles to the top creating a convex surface with no air bubbles. Place the cap on tightly. Gently turn the bottle over and tap lightly on the soft surface to insure that no bubbles are present. Seal the cap further by using vinyl electrical tape.

10. Label the bottle with location number, date and other pertinent information. Record all information in field notebook. Cool the sample immediately on ice. Maintain the samples in a secured area at ambient conditions and deliver to the laboratory within twenty-four hours.

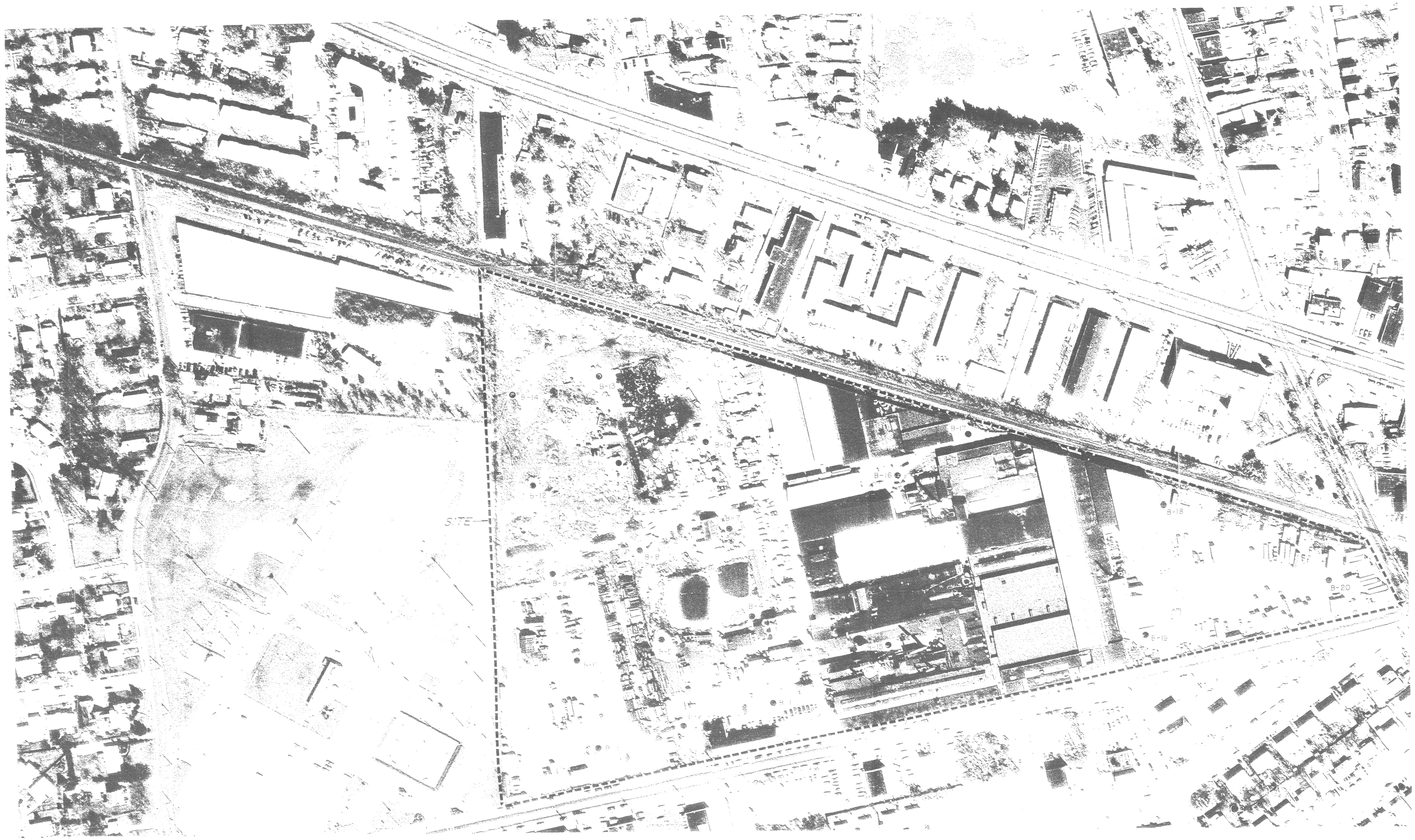
11. Fill the other containers provided by the laboratory according to directions.

12. After the last sample is collected, measure and record the temperature, conductivity, pH, and the physical appearance of the water.

13. Replace the well cap and cover the well.

14. Rinse out the bailer and/or pump with clean water.

15. Discard the cord, rags, gloves, and plastic sheeting in an appropriate manner.



SCALE
100' 0 100'

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

LEGEND
B-[illegible] PROPOSED BORING LOCATION

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SHEA AND GOULD
FORMER LIBERTY AIRCRAFT SITE
PROPOSED BORING LOCATION MAP

354.01.01
SEPT. 19, 1988
FIGURE 2