LMC13B
9B

WORK PLAN

Bloody Brook Sampling and Analysis Work Plan

Lockheed Martin Corporation
Electronics Park Facility
Syracuse, New York

May 1996

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

6723 Towpath Road, P.O. Box 66
Syracuse, New York, 13214-0066
(315) 446-9120

Table of Contents

1. Introduction

1.1 General

This document presents a Work Plan for conducting sampling and analysis of surface water and sediment in select locations at and near the Lockheed Martin Corporation (LMC) Electronics Park facility (the facility) located in Syracuse, New York. This Work Plan has been prepared in accordance with discussions between LMC and the New York State Department of Environmental Conservation (NYSDEC).

As determined in cooperation with the NYSDEC during a May 24, 1996 site reconnaissance, LMC will conduct a limited sampling and analysis program of surface water and sediment within the on-site pond and at the locations where Bloody Brook discharges from the facility. The sampling and analysis will be conducted to evaluate the presence of polychlorinated biphenyls (PCBs) and mercury, copper and cadmium in these media. Relevant project background information and the objectives and scope of this Work Plan are summarized below.

1.2 Background Information

This section presents a summary of the existing information used to develop the basis for the proposed sampling and analysis program presented in this Work Plan. A description of the pertinent location and physical setting information and a summary of LMC's response to recent NYSDEC and United States Environmental Protection Agency (USEPA) inquiries related to operations at the facility is presented below.

1.2.1 Location and Physical Setting

The facility is located on Electronics Parkway in the Town of Salina, New York. The approximately 183-acre facility is bounded by the New York State Thruway to the southwest, Vine Street to the northwest and Henry Clay Boulevard/Electronics Parkway to the northeast and southeast. The location of the facility is shown on the Site Location Map (Figure 1).

A portion of two separate branches of Bloody Brook, known as the West Branch and Middle Branch of Bloody Brook, flow through the facility. The West and Middle Branches of Bloody Brook are identified as the receiving waters on LMC's State Pollutant Discharge Elimination System (SPDES) Discharge Permit (No. NY-0002101; effective date: May 1, 1994; expiration date: May 1, 1999; modification date: November 30, 1994).

The Middle Branch of Bloody Brook enters the facility at the southeastern perimeter and flows through a pond at the southeastern portion of the facility; flow from the pond is discharged at the southern property boundary. The West Branch of Bloody Brook enters the facility at the northwest perimeter and flows south along the western portion of the facility through a series of underground culvert pipes; the West Branch is discharged at the southwest property boundary.

1.2.2 Responses to NYSDEC/USEPA Inquiries

On April 10, 1996, LMC submitted a response to a March 11, 1996 supplemental Joint Request for Information (Request) by the NYSDEC and the USEPA made pursuant to Section 104(e) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9604(e) and New York Environmental Conservation Law, concerning Onondaga Lake, Syracuse, New York. NYSDEC has indicated that the Request was prompted by the results of the Biological Stream Assessment and PISCES sampling conducted by the NYSDEC in 1994 and 1995. Specifically, the Request focused on information relating to the presence of PCBs and certain

metals at or in the vicinity of the facility. As stated in LMC's response to the request, based on a review of available information, the presence of PCBs at the facility has not resulted in significant on-site or off-site environmental impacts. Further, LMC indicated that the facility is not a likely source of the elevated levels of mercury, copper and cadmium in biota collected by NYSDEC from Bloody Brook.

1.3 Objectives

The overall objective of the sampling and analysis program is to provide data which can be used to assess the presence or absence of PCBs, mercury, copper and cadmium in Bloody Brook at or near the Electronics Park facility. The following specific objectives have been established:

1. Determine the presence or absence of PCBs, mercury, copper and cadmium in samples collected from surface water and sediment within the West and Middle Branches of Bloody Brook at a location immediately downstream of the facility boundary; and

2. Determine the presence or absence of PCBs, mercury, copper and cadmium in samples collected from surface water and sediment within the on-site pond.

If data from the sampling locations downstream of the facility indicate that PCBs, mercury, copper and cadmium are absent or present at low levels (e.g., background levels), it will be concluded that the facility is not the source of PCBs, mercury, copper, and cadmium, including the elevated levels of these parameters identified in biota collected by NYSDEC from Bloody Brook. If data from the sampling locations within the on-site pond and downstream of the facility indicate that PCBs, mercury, copper and cadmium are present, LMC may conduct additional on-site and off-site sampling to evaluate the source of any identified parameters.

2. Sampling and Analysis Work Plan

2.1 General

The preparation of this Sampling and Analysis Work Plan included a joint LMC/NYSDEC site reconnaissance (conducted on May 24, 1996) of the West and Middle Branches of Bloody Brook, including the on-site pond. The purpose of the site reconnaissance was to determine appropriate sampling locations and techniques which would satisfy the sampling objectives and were deemed mutually acceptable to LMC and the NYSDEC. The Sampling and Analysis Work Plan presented below represents the sampling and analysis approach agreed to by LMC and NYSDEC.

The sampling locations within the on-site pond and at the facility discharge locations to Bloody Brook were selected because analyis of the media collected in these locations should characterize the nature of discharges from the facility. Although LMC believes that the collection of one downstream sample from each branch of Bloody Brook will be representative of the downstream water and sediment, at the request of the NYSDEC, multiple samples will be collected and analyzed at the outlet of the West Branch of Bloody Brook. Based upon the information that is currently available, it is LMCs belief that the detection of PCBs, mercury, copper and cadmium in biota collected in Bloody Brook is not related to discharges from the facility. Thus, LMC has elected not to sample Bloody Brook discharges onto the facility at this time. However, LMC may choose to evaluate Bloody Brook discharges onto the facility, through upstream sampling, at a future date. During the May 24, 1996 site reconnaissance and sample plan discussions, NYSDEC agreed with this approach.

All sampling activities described below will be performed beginning at the furthest downstream location and ending at the furthest upstream location. Also all surface water samples will be collected before the collection of sediment samples at each location. This sequence will eliminate the collection of sediments disturbed during upstream sampling activities.

It is LMCs understanding that the NYSDEC will collect split samples for analysis by a NYSDEC-contracted laboratory. As requested by LMC, the NYSDEC will provide LMC with all analytical data generated by the NYSDEC as part of this program.

2.2 Downstream Sediment And Surface Water Column Sampling

Surface Water Sampling

One surface water grab sample will be collected at the downstream outlet from Electronics Park from the Middle Branch of Bloody Brook and two surface water grab samples will be collected at the downstream outlet from Electronics Park at the West Branch of Bloody Brook. The proposed sampling locations are shown on Figure 2. As determined with the NYSDEC, the Middle Branch of Bloody Brook discharge sample will be collected within the pond discharge channel and the West Branch of Bloody Brook discharge samples will be collected within 400 feet of where Bloody Brook discharges south of the New York State Thruway. These locations correspond to the approximate locations where the NYSDEC reports to have collected biota (i.e., crayfish) samples during the Biological Stream Assessment. Both filtered and unfiltered samples will be collected at each sampling location. The unfiltered samples will be submitted to the laboratory for analysis (discussed below). The filtered samples will be submitted to the laboratory and held for analysis; based on LMCs review of the unfiltered sample data, LMC may elect to analyze the filtered samples. The water samples will be collected in accordance with the procedures described in Appendix A.

The water samples will be submitted to Galson Laboratories, Inc. of East Syracuse, New York (NYSDOH Lab No. 10186) for analysis of PCBs, mercury, copper, and cadmium. All laboratory analyses will be conducted in accordance with USEPA SW-846 procedures (PCBs - method 608; mercury - method 7470; cadmium and copper - method 6010) and supported with a Category B deliverable package (in accordance with the procedures described in the NYSDEC December 1991 Analytical Services Protocol Volume I pp. B58-63).

Sediment Sampling

Sediment samples will be collected at the same locations as the surface water samples at the outlet of both the West and Middle Branches of Bloody Brook. In addition, another sediment sample will be collected at the outlet of the West Branch of Bloody Brook; the additional sediment sample will be collected within 400 feet of where Bloody Brook discharges south of the New York State Thruway. The proposed sampling locations are shown on Figure 2. As agreed to during the LMC/NYSDEC reconnaissance, if the depth of available sediments (i.e., sediments which can be collected by manually advancing the core sampler to refusal) is 3 feet or less, a full depth core sample of the sediments will be obtained and submitted for analysis. If the depth of the available sediments is greater than three feet, a full depth core sample will be collected and the core will be divided into two equal sample depths; both samples will be submitted for analysis. The depth of sediment collected will be recorded. The sediment samples will be collected in accordance with the procedures described in Appendix A.

The collected sediment samples will be submitted to Galson Laboratories Inc for analysis of PCBs, mercury, copper and cadmium. Laboratory analysis will be performed in accordance with USEPA SW-846 procedures (PCBs - method 8080; mercury - method 7471; cadmium and copper - method 6010) and supported with a Category B deliverable package.

2.3 On-Site Pond Sediment And Surface Water Sampling

Surface Water Sampling

Three surface water grab samples will be collected within the on-site pond. As agreed with the NYSDEC, representative samples of water from the pond will be available near the upstream discharge into the pond, near the center of the pond (at the approximate confluence of flows from LMC SPDES Outfalls 004 and 006) and near the discharge structure of the pond (at the southern end of the pond). The proposed sampling locations are shown on Figure 2. The water samples will be collected at mid-depth of the water column. Both filtered and unfiltered samples will be collected at each sampling location. The unfiltered samples will be submitted to the laboratory for analysis (discussed below); the filtered samples will be submitted to the laboratory and held for analysis. Based on LMC's review of the unfiltered sample data, LMC may elect to analyze the filtered samples. The water samples will be collected in accordance with the procedures described in Appendix A.

The water samples will be submitted to Galson Laboratories, Inc. for analysis of PCBs, mercury, copper and cadmium. All laboratory analyses will be conducted in accordance with USEPA SW-846 procedures (listed above) and supported with a Category B deliverable package.

Sediment Sampling

Sediment samples will be collected at the same locations as the surface water samples within the on-site pond. The proposed sampling locations are shown on Figure 2. As agreed to during the LMC/NYSDEC reconnaissance, if the depth of available sediments (i.e., sediments which can be collected by manually advancing the core sampler to refusal) is 3 feet or less, a full depth core sample of the sediments will be obtained

and submitted for analysis. If the depth of the available sediments is greater than three feet, a full depth core sample will be collected and the core will be divided into two equal sample depths; both samples will be submitted for analysis. The depth of sediment collected will be recorded. The sediment samples will be collected in accordance with the procedures described in Appendix A.

The collected sediment samples will be submitted to Galson Laboratories, Inc. for analysis of PCBs, mercury, copper and cadmium. Laboratory analysis will be performed in accordance with USEPA SW-846 procedures (listed above) and supported with a Category B deliverable package.

2.4 Quality Assurance/Quality Control

Both field and laboratory quality assurance/quality control (QA/QC) controls will be performed as part of the sampling and analysis program. These controls will be used to verify the quality of the data. The following QA/QC samples will be collected and analyzed for PCBs, mercury, copper and cadmium as part of this program.

Field Duplicate

One field duplicate sample of water or sediment will be collected and analyzed to verify the reproducibility of the sampling methods. The duplicate sample will be collected using methods to maximize the compatibility of the samples. For example, a single core sediment sample will be divided between the sample and the duplicate sample container.

Rinse Blank

One rinse blank will be obtained by pouring analyte free water (to be supplied by the laboratory) over decontaminated sampling equipment to confirm that the decontamination procedure has been adequately performed and that cross contamination of samples will not occur due to the equipment. The intent is for the water making up the blank to follow the same path, and therefore, come in contact with the same equipment as the samples.

Matrix Spike/Matrix Spike Duplicate

Triple sample volumes from one sample location will be collected for either sediment or surface water in order for the laboratory to perform matrix spike/matrix spike duplicate analysis.

Method Blank

A method blank will be analyzed by the laboratory to identify any sources of contamination in the analytical process.

3. Sample Handling and Documentation

3.1 Sample Containers and Preservation

Galson Laboratories, Inc., will supply appropriate sample containers in sealed cartons, as well as sample labels and preservatives. The field personnel will be responsible for properly labeling containers and preserving samples (as appropriate). Sample labeling procedures are described in Appendix C.

3.2 Packing, Handling, and Shipping Requirements

Sample custody seals and packing materials for filled sample containers will also be provided by the laboratory. The filled, labeled, and sealed containers will be placed in a cooler on ice and carefully packed to eliminate the possibility of container breakage.

All samples will be packaged by the field personnel and transported as low-concentration environmental samples. The packaged samples will be hand delivered by sampling personnel to the laboratory within 24 hours of sample collection. General procedures for packing, handling, and shipping environmental samples are included in Appendix C.

3.3 Documentation

Field personnel will provide comprehensive documentation covering all aspects of field sampling, field analysis, chain-of-custody. This documentation constitutes a record which allows reconstruction of all field events to aid in the data review and interpretation process. All documents, records, and information relating to the performance of the field work will be retained in a project file at the Blasland, Bouck & Lee, Inc. office in Syracuse, New York.

3.3.1 Daily Production Documentation

Each field crew will maintain a field notebook consisting of a waterproof, bound notebook which will contain a record of all activities performed at the site. The specific measurements from field testing and sampling will be recorded in the field notebook or on separate documentation forms. At the time of sampling, detailed notes of the exact site of sampling will be recorded in the field notebook.

3.3.2 Sampling Information

During surface water and sediment sampling, detailed notes will be made as to the exact site of sampling, physical observations, sample depths, and weather conditions. These notes will be recorded in the field notebook.

3.3.3 Sample Chain-of-Custody

Persons will have custody of samples when the samples are in their physical possession, in their view after being in their possession, or in their physical possession and secured so they cannot be tampered with. In addition, when samples are secured in a restricted area accessible only to authorized personnel, they will be deemed to be in the custody of such authorized personnel.

Chain-of-custody forms will provide the record of responsibility for sample collection, transport, and submittal to the laboratory. Chain-of-custody forms are provided in Appendix C. The forms will be filled out at each sampling site, at a group of sampling sites, or at the end of each day of sampling by one of the field personnel designated to be responsible for sample custody. In the event that the samples are relinquished by the designated sampling person

to other sampling or field personnel, the chain-of-custody form will be signed and dated by the appropriate personnel to document the sample transfer. The original chain-of-custody form will accompany the samples to the laboratory.

3.4 Management of Investigation-Derived Materials and Wastes

The handling of investigation-derived materials and wastes is discussed below.

3.4.1 Excess Surface Water and Sediment

Any excess surface water and/or sediment not submitted for laboratory analysis will be placed back into the media from which they were obtained.

3.4.2 Disposable Equipment and Debris

Disposable equipment and debris such as health and safety equipment, plastic sheeting, sampling equipment, and other equipment and/or sampling debris not reused in the investigation will be collected in plastic bags during the sampling events and then placed into appropriately labeled containers which will be stored at the facility for characterization and disposal by LMC.

3.4.3 Decontamination Rinsate

Decontamination rinsate (e.g., tap and distilled water container small amount of hexane) will be containerized at each sampling location or group of locations. Upon completion of the field activities, the rinsate will be placed in an appropriately labeled container to be stored at the facility for characterization and disposal by LMC.

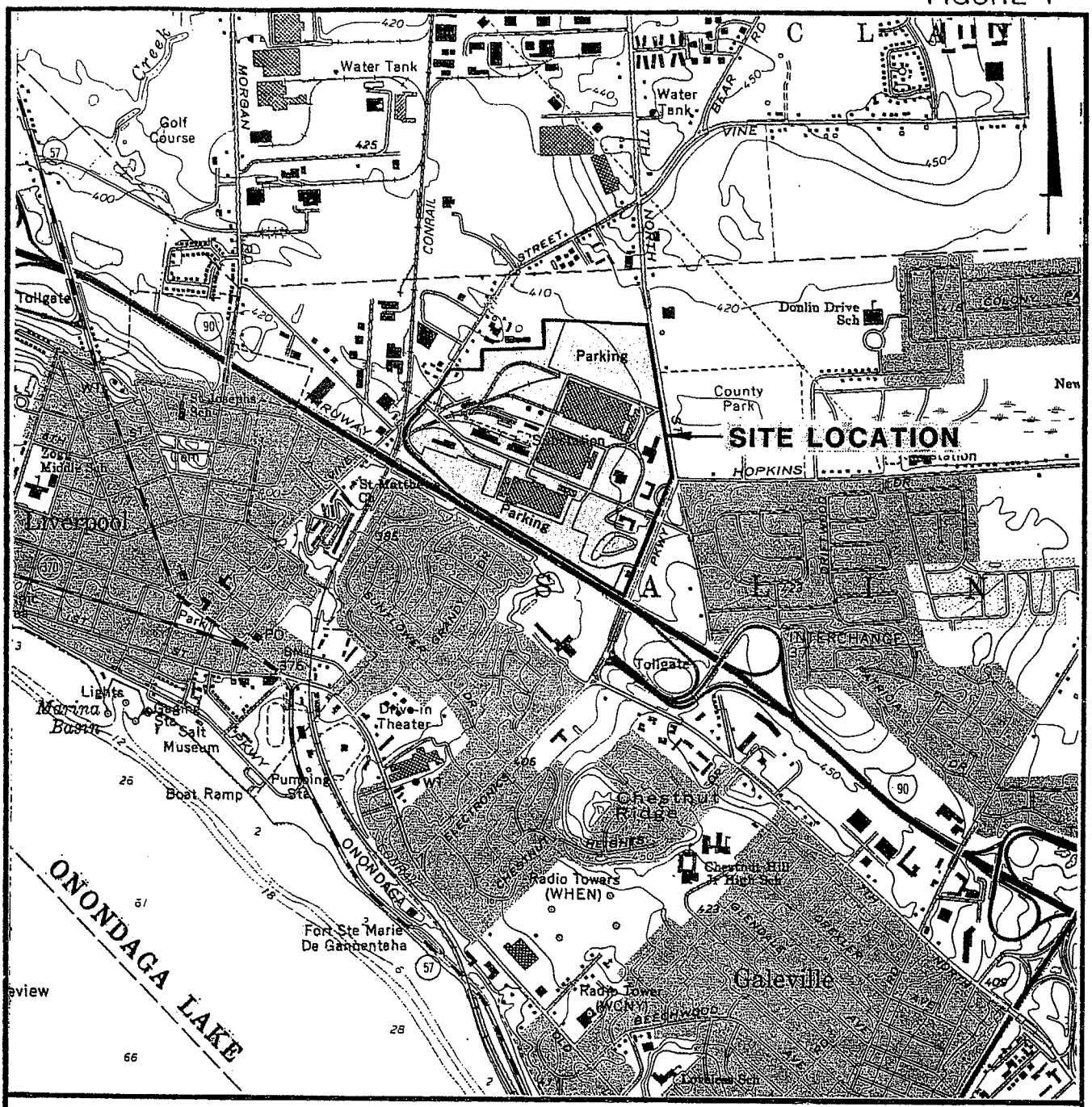
4. Schedule and Reporting

The sampling program described herein is scheduled to be performed on May 31, 1996. It is anticipated that the sampling will be completed in one field day. All samples will be submitted (hand-delivered) to the laboratory on May 31, 1996 for analysis on an expedited turnaround. At this time it is anticipated preliminary, unvalidated data will be made available to LMC on or about June 3, 1996. Internal laboratory QA/QC will be performed on the analytical data and a Category B deliverable package will be prepared to support the analytical data. It is anticipated that the Category B deliverable package will be available to LMC on or about June 17, 1996.

LMC will provide the NYSDEC with the preliminary analytical data on or about June 4, 1996. This submittal will include a transmission of data only.

LMC understands that NYSDEC will provide LMC with all analytical data generated from split samples analyzed by NYSDECs contract laboratory. Following receipt of the final analytical data (generated by both LMC and NYSDEC), including the Category B deliverable, LMC will evaluate all data and forward its evaluation to the NYSDEC by the end of June 1996.

FIGURE 1



LOCKHEED MARTIN CORPORATION
ELECTRONICS PARK FACILITY
SYRACUSE, NEW YORK

TECHNICAL MEMORANDUM

SITE LOCATION MAP

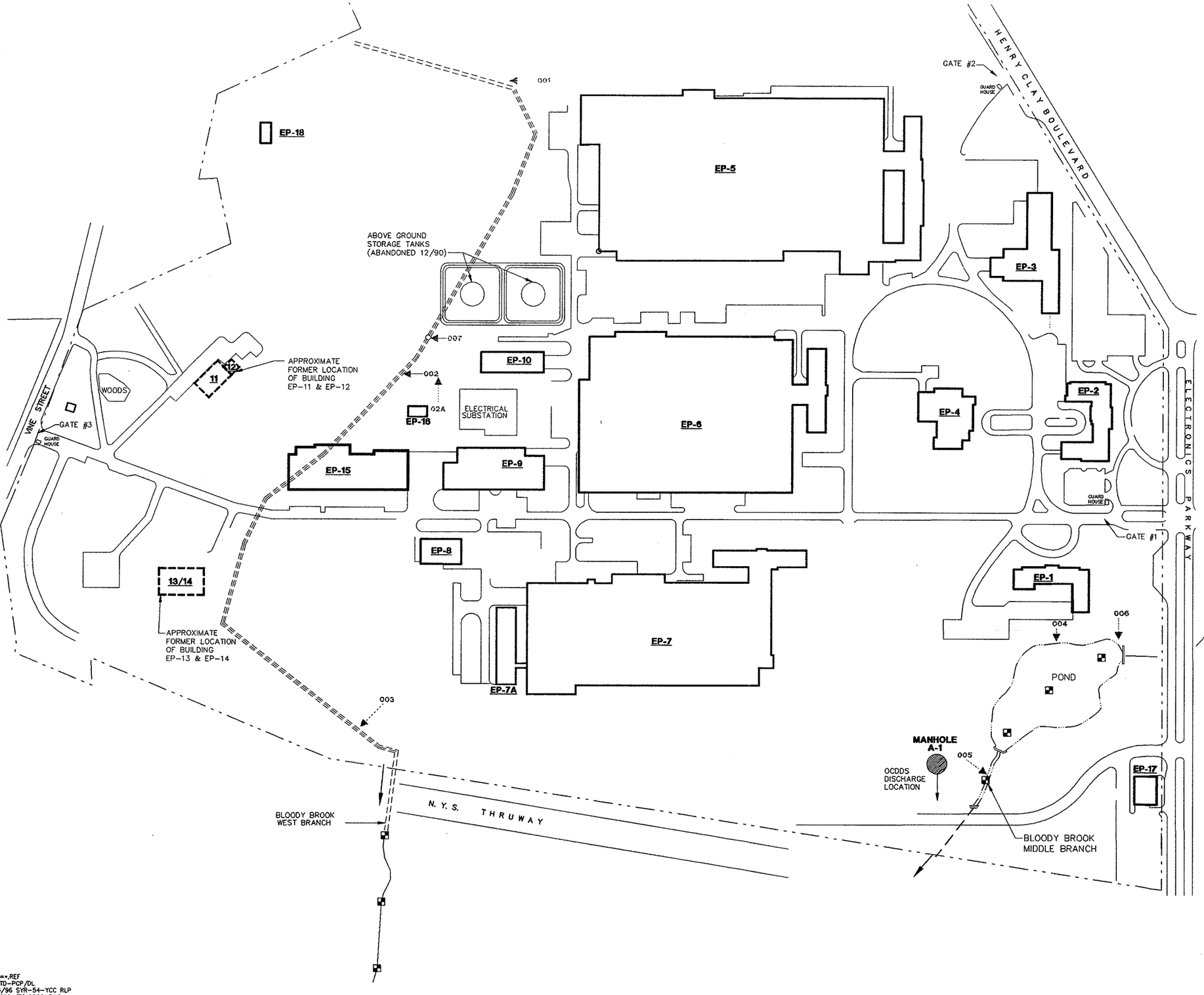
SCALE:

2000' 0 2000'

SOURCE: USGS 7 1/2 MINUTE TOPOGRAPHIC QUADRANGLE:
SYRACUSE WEST, NY, 1978

38109001

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS



LEGEND

- PROPOSED SURFACE WATER/SEDIMENT SAMPLING LOCATION (SEE NOTE 2)
- APPROXIMATE PROPERTY LINE
- 003 SPDES OUTFALL

NOTES:

1. MAPPING DERIVED FROM "SITE PLAN SUMPS AND STORM SEWER SYSTEM" BY LAW ENVIRONMENTAL, DATED AUGUST 28, 1991.
2. A SURFACE WATER SAMPLE WILL NOT BE COLLECTED AT ONE OF THE THREE LOCATIONS ON THE BLOODY BROOK WEST BRANCH.

150' 0 150' 300'
APPROXIMATE SCALE

L:ON=*.REF
P: STD-PCP/DL
5/24/96 SYR-54-YCC RLP
38109001/38109C01.DWG

LOCKHEED MARTIN CORPORATION
ELECTRONICS PARK
SYRACUSE, NEW YORK

SAMPLING LOCATION PLAN

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2

APPENDIX A - SURFACE WATER SAMPLING PROCEDURES

I. Introduction

Two methods for collecting surface water samples will be used. Water samples will be collected as surface water grab samples for locations in the channel portion of Bloody Brook and as mid-depth samples for locations in the on-site pond.

II. Materials

The following materials will be available, as required, during surface water sampling:

- Cleaning equipment
- Boat
- Rope
- 200-foot measuring tape
- Surveyor's rod
- Pyrex Beaker
- Field book
- Graduated cylinder/beaker/or equivalent glass measuring device
- Appropriate water sample containers (prepared with appropriate preservatives by the laboratory prior to each sampling event)
- Appropriate transport containers and appropriate packing, labeling and shipping materials (coolers) with ice
- Appropriate water sampler (i.e., grab sample containers or peristaltic pump)

III. Procedures

A. Depth-Integrated Water Sampling Procedures

Depth-integrated water samples will be collected from a boat.

1. Identify sampling location in field notebook along with other appropriate information.
2. Don health and safety equipment.
3. Clean the sampling equipment in accordance with IV below.
4. Position the boat at the sampling station.
5. Measure the total depth of the water column.
6. Lower the water sampler to mid-depth (2-foot interval) and release trigger.
7. Raise the water sampler from the water column with minimal disturbance.
8. For PCBs and inorganics, two separate samples will be collected at each surface water sampling location. One of the PCB samples and one of the inorganic samples will be filtered in the field prior to analysis. The other sample will not be filtered.
9. For samples requiring filtration, transfer a sufficient volume of the samples into a sample container and filter the sample using a dedicated 0.45 micron in-line filter (change filter in between sampling locations).
10. Secure the sample container caps tightly.

11. Label all sample containers in accordance with the procedures in Section 3 and Appendix C.

12. Handle, pack, and ship the samples using the chain-of-custody procedures in accordance with the procedures in Section 3 and Appendix C.

13. Record required information on the appropriate forms and/or field log book.

B. Surface Water Grab Sample Procedures

1. Don health and safety equipment; wade into the center of the channel (during low flow and safe conditions). In the event it is impossible to safely reach the center of the channel, the sample will be obtained as close as possible to the center. No sampling will occur if the channel cannot be accessed safely.

2. Face upstream and collect whole water samples directly in the appropriate sample containers.

3. Collect the water sample by submerging the sample container directly in the stream and allowing the bottle to fill. After filling, cap the bottle and place on ice in the cooler. If the stream is too shallow to fill the bottle directly, use a pyrex beaker to sample stream water and fill the bottle. If the pyrex beaker is used it must be cleaned according to procedures below.

4. The sampling location will be identified by marking the location with a surveyor's stake.

5. Label all bottles as appropriate, as discussed in Section 3.

6. Place filled sample containers on ice in a cooler.

7. Follow procedures for preservation of samples and packing, handling, and shipping with associated chain-of-custody procedures of samples as set forth in Section 3 and Appendix C.

IV. Field Cleaning Procedures

A. Materials

- Health and safety equipment
- Distilled water (laboratory-supplied)
- Non-phosphate soap; (Alconox^{R}, or equivalent)
- Tap water
- Appropriate cleaning solvent (e.g., hexane)
- Rinse collection plastic containers
- Brushes
- Aluminum foil
- Garbage bags
- Spray bottles for solvent

- Ziploc[R] type bags

B. Procedures

1. Cleaning of reusable sampling equipment (e.g., glass beakers, glass mixing containers, teflon stirring rods, teflon tubing) will follow the decontamination procedures presented below:

    a. Alconox[R] and tap water wash;
    b. Tap water rinse;
    c. Solvent spray rinse (e.g., hexane);
    d. Distilled water rinse; and
    e. Allow to air dry and wrap in aluminum foil.

2. Cleaning will be conducted in plastic containers that will be transported to each sampling location (or group of locations). These containers will also be used to collect all decontamination rinsate.

V. Disposal Methods

Materials generated during the above activities will be disposed of as described in Section 3.

APPENDIX B - SEDIMENT CORE SAMPLING PROCEDURES

I. Introduction

This protocol describes the procedures to collect sediment core samples.

II. Materials

The following materials will be available, as required, during sediment sampling activities.

- Cleaning equipment;
- Boat;
- Aluminum or stainless steel tray;
- Duct tape;
- Lexan^{R} tubing with end caps;
- Brass push rod;
- Hacksaw;
- Stainless steel core driver;
- Vacuum pump;
- Piston sampler;
- 6-foot rule or survey rod;
- Transport container with ice;
- Appropriate sample containers and forms; and
- Field book.

III. Procedures for Sediment Core Sampling

1. Identify the proposed sample location in the field notebook along with other appropriate information collected during the sediment probing activities;

2. Don personal protective equipment;

3. At each sample location, lower a section of Lexan^{R} tube until it just reaches the top of sediment. Measure the depth of water. (Sections of Lexan^{R} tube may need to be spliced together in deep water locations);

4. Push the Lexan^{R} tube into the sediment by hand until refusal. Measure the depth of sediment.

5. Drive the tube several more inches using a stainless steel core driver block and measure the distance. This procedure is performed to obtain a "plug" at the bottom of the core and prevent the loose sediment from escaping;

6. Place a vacuum pump on the top end of the Lexan^{R} tube and create a vacuum to prevent the sediments/plug from escaping;

7. Slowly pull the tube from the sediment, twisting it slightly as it is removed (if necessary);

8. Before the tube is fully removed from the water, place a cap on the bottom end of the tube while it is still submerged;

9. Keeping the tube upright, wipe the bottom end dry and seal the cap with duct tape and label. Measure the length of sediment recovered and evaluate the integrity of the core. If the core is not suitably intact, repeat coring procedure within 5 to 10 feet of the first location attempted;

10. While still keeping the core upright, use a hacksaw to make a horizontal cut in the tube approximately one inch above the sediment, if the sediment depth is greater than 3 feet cut the sediment sample in half;

11. Re-cap the cut end(s) of the tube, seal the cap with duct tape, and mark the appropriate end(s) as "top";

12. Wipe the tube dry;

13. Place a completed sample label on the tube;

14. Record the following information on both the tube and on the cap: 1) sample number; 2) sampling date; and 3) sampling time;

15. Place the core sample upright in a container with ice;

16. Repeat the above procedures until the appropriate number of core samples are collected (for the sampling event or the sampling day);

17. Extrude the sediment cores from the Lexan^{R} tubing onto an aluminum or stainless steel tray. Describe and record sample description including depths at which sediment characteristics change and visual characteristics.

18. Homogenize the core sample and place into the appropriate sample containers for PCBs, mercury, copper, and cadmium.

19. Label all sample containers according to the procedures in Section 3 and Appendix C; and

20. Handle, pack, and ship the samples using the chain-of-custody procedures in accordance with Section 3 and Appendix C.

IV. Field Cleaning Procedures

A. Materials

- Distilled water (laboratory-supplied)
- Non-phosphate soap; (Alconox^{R}, or equivalent)
- Tap water
- Appropriate cleaning solvent (e.g., hexane)
- Rinse collection plastic containers
- Brushes
- Aluminum foil
- Garbage bags
- Spray bottles for solvent
- Ziploc^{R} type bags

B. Procedures

1. Cleaning of reusable sampling equipment (e.g., trays, spatulas, scoops and core driver) will follow the decontamination procedures presented below:

   a. Alconox^{R} and tap water wash;
   b. Tap water rinse;
   c. Solvent spray rinse (e.g., hexane);
   d. Distilled water rinse; and
   e. Allow to air dry and wrap in aluminum foil.

2. Cleaning will be conducted in plastic containers to collect all decontamination rinsate.

V. Disposal Methods

Materials generated during the sediment sampling activities and disposable equipment will be disposed of as described in Section 3.

APPENDIX C - SAMPLE PACKING, HANDLING, AND SHIPPING PROCEDURES

I. Handling

1. Fill in sample label with:

   a. Sample type (soil, sediment, surface water, ground water);
   b. Project number and site name;
   c. Sample identification code and other sample identification information, if applicable;
   d. Analysis required;
   e. Date;
   f. Time sampled;
   g. Name, affiliation, and contact phone number;
   h. Sample type (composite or grab); and
   I. Preservative added, if applicable.

2. Cover the label with clear packing tape to secure the label onto the container.

3. Check the caps on the sample containers to ensure that they are tightly sealed.

4. Mark the level of the sample in the container using an indelible ink marker or grease pencil.

5. Wrap the sample container with clear packing tape to prevent it from becoming loose.

6. Place a signed custody seal label over the cap such that the cap cannot be removed without breaking the custody seal.

7. Initiate chain-of-custody by designated sampling personnel responsible for sample custody after sampling or prior to sample packing). Note: if the designated sampling person relinquishes the samples to other sampling or field personnel for packing or other purposes, the samplers will complete the chain-of-custody prior to this transfer. The appropriate personnel will sign and date the chain-of-custody form to document the sample custody transfer.

II. Packing

1. Using duct tape, secure the outside and inside of the drain plug at the bottom of the cooler that is used for sample transport.

2. Place each sample container or package in individual polyethylene bags (Ziplock^{R}-type) and seal.

3. Place one to two inches of vermiculite at the bottom of the cooler as a cushioning material.

4. Package the sealed sample containers upright in the cooler.

5. Repackage ice (if required) in small Ziplock^{R}-type plastic bags and place loosely in the cooler. Do not pack ice so tightly that it may prevent addition of sufficient cushioning material.

6. Fill the remaining space in the cooler with vermiculite.

7. Place the completed chain-of-custody forms in a large Ziploc^{R}-type bag and tape the forms to the inside of the cooler lid.

8. Close the lid of the cooler and fasten with duct tape.

9. Wrap strapping tape around both ends of the cooler at least twice.

10. Mark the cooler on the outside with the following information: shipping address, return address, "Fragile" labels on the top and on one side, and arrows indicating "This Side Up" on two adjacent sides.

11. Place custody seal evidence tape over front right and back left of the cooler lid and cover with clear plastic tape.

III. Shipping

1. All samples will be hand delivered or delivered by an express carrier within 48 hours or less from the date of sample collection.

2. The following chain-of-custody procedures will apply to sample shipping:

   a. Relinquish the sample containers to the laboratory via express carrier. The signed and dated forms should be included in the cooler. The express carrier will not be required to sign the chain-of-custody forms. The sampler should retain the express carrier receipt or bill of lading.

   b. When the samples are received by the laboratory, the laboratory personnel shall complete the chain-of-custody forms by recording receipt of samples, measure and record the internal temperature of the shipping container, and then check the sample identification numbers on the containers to the chain-of-custody forms.