N Y S D E C

1996 CLEAN WATER / CLEAN AIR BOND ACT
ENVIRONMENTAL RESTORATION PROJECTS
T I T L E 5

MUNICIPAL ASSISTANCE BROWNFIELD PROGRAM
ENVIRONMENTAL RESTORATION PROJECT

FINAL SITE INVESTIGATION WORK PLAN

FOR THE
FORMER AMERICAN LaFRANCE SITE
100 EAST LaFRANCE STREET
ELMIRA, NEW YORK

SUBMITTED TO:

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
AND
NYS DEPARTMENT OF HEALTH

SUBMITTED BY:

CITY OF ELMIRA
ELMIRA, NEW YORK

SEPTEMBER 1998

MUNICIPAL ASSISTANCE BROWNFIELD PROGRAM
ENVIRONMENTAL RESTORATION PROJECT

TABLE OF CONTENTS

TABLE OF CONTENTS continued

LIST OF APPENDICES

MUNICIPAL ASSISTANCE BROWNFIELD PROGRAM
ENVIRONMENTAL RESTORATION PROJECT

LIST OF TABLES

LIST OF FIGURES

SITE INVESTIGATION WORK PLAN

FORMER AMERICAN LaFRANCE SITE
100 EAST LaFRANCE STREET, ELMIRA, NEW YORK

1.0 Introduction

On behalf of the City of Elmira, Fagan Engineers has prepared this Site Investigation (SI) Work Plan for site investigation and selected remedial actions for the American LaFrance Brownfield (ALF) site at 100 East LaFrance St., in the City of Elmira, in Chemung County, New York. This SI Work Plan has been prepared in response to the Clean Water / Clean Air Bond Act Environmental Restoration of Brownfield Sites, Title 5, 1996.

The funding provided by the City of Elmira for this project is limited and based on the budget outlined in the original application submitted by the City in April 1997.

A Phase I Environmental Site Assessment of the LaFrance site was completed in December 1996. The Phase I investigation has shown that the structure occupied approximately 81 percent of the site. Former employees have also verified that a concrete slab floor existed within the structure. Therefore, areas serving as a conduit to the ground surface would be limited to alley ways, staging areas, floor drains discharging to drywells, and other open areas outside the structure as well as intrusion along perimeters of the concrete slabs.

Based on information from previous studies, the scope of work outlined in the original Brownfields application represents a cost effective, responsible SI/RAR of the subject site. The following hierarchy of target contaminants has been developed as a result of careful assimilation of the available historical data:

> Chlorinated solvents and semi-volatile organics are the primary target compounds. Subsurface contamination would be the result of floor drains (and other associated drains) within the structure which may have discharged directly to a drywell(s).
>
> Metals and PCB's have also been identified as target compounds in specified areas of the site due to the limited outside spacial area of the property not occupied by the building.
>
> The tar-like substance on the ground surface appears to be emanating from an alleged UST. This material is highly viscous.

Soil and groundwater analyses will be subject to full Target Compound List (TCL) compounds per TAGM 4046.

Fagan Engineers prepared a Draft Work Plan which was submitted to NYSDEC and NYSDOH for review. Fagan Engineers has responded to comments by NYSDEC and NYSDOH herein and is proposing this revised site investigation work plan. The new projected cost for the LaFrance project is $169,245 (see Table 1-2 sheet for revised costs). Table 1-1 has been included to illustrate carryover items. This work plan provides for an all inclusive site investigation effort with the exception that this investigation also allows for ten unknowns to be analyzed.

1.1 Site Description and History

The American LaFrance Brownfield site is located within the City of Elmira in Chemung County, New York. The site includes the former American LaFrance Fire Engine Company (see Figure 1, Proposed Work Plan).

The facility property covers a 4.357 acre irregular shaped vacant parcel located on the west side of Erie Street in the City of Elmira, Chemung County, New York. The Owner of Record is the City of Elmira. The site is located in an Economic Development Zone. Structures on the site have been demolished and the C & D materials removed from the location. The previous structures consisted of five former factory buildings and a smoke stack area. Buildings on the parcel were separated by paved corridors and staging areas.

Various manufacturing operations were ultimately abandoned by their owners and acquired by the City through tax foreclosure proceedings at this site that was home to the former American LaFrance Fire Engine Company since the turn of the century. This site was acquired by the City in the 1980's via a tax foreclosure proceeding. In 1984, the site buildings were demolished by the City. A Phase I environmental assessment was recently completed for the City which showed the need for a detailed Phase II assessment due to the presence of a former foundry area, painting areas, paint spray booths and machine shops. The Phase I assessment also showed the presence of liquid tar on the ground surface adjacent to the nearby Conrail property.

1.1.1 Former Uses of Site

Former uses of the subject site relate to fire truck and fire extinguisher manufacturing with approximate dates of operation as follows:

1903	LaFrance Fire Engine Company
1925-1930	American LaFrance Fire Engine Company
1935-1950	American LaFrance and Foamite Company
1955-1960	American LaFrance Foamite Corporation
1965-1970	American LaFrance, a division of Sterling Precision Instruments
1975-1980	American LaFrance, a division of Automatic Sprinkler Corporation
1980	NYS Department of Transportation
1984	According to Steve Avery of the City of Elmira, a demolition permit was issued to L. M. Sessler on March 28, 1984. The completion date of record is November 1984.
1990	Vacant

TABLE 1 - 1
ORIGINAL PROJECT COSTS SUMMARY

Task	Subtask	Labor	Materials	Sub-Contracts	Subtask Total	Task Total
1	Work Plan					$ 18,840
	Scoping Plan	$ 3,800	$250	$ --	$ 5,050	
	Field Sampling Plan	5,560	250	---	5,810	
	QAPP Plan	5,280	250	---	5,530	
	Citizen Participation Plan	3,200	250	---	3,450	
2	Phase I Field Work					$ 70,400
	Surveying	2,800	---	---	2,800	
	Magnetometer	2,070	*750	---	2,820	
	Soil Gas Survey	*6,740	9,590	---	16,330	
	Test Pits	2,670	500	14,800	17,970	
	Drilling	4,500	*250	15,100	19,850	
	Well Sampling	*2,000	*900	7,650	10,550	
3	Reporting					$47,140
	Risk Assessment	1,200	---	15,000	16,200	
	SI/RAR	16,350	1,000	5,000	22,340	
	Project Management	7,600	1,000	---	8,600	
TOTALS:		$63,840	$14,990	$57,550		$136,380

STANDARD HOURLY RATES USED (multiplier not added at this time)	
Principal	$57
Senior Engineer/Geologist/Chemist II	37
Staff Engineer/Geologist/Chemist I	31
Junior Engineer/Engineer/Geologist/Chemist	23
Drafting	20
Secretarial	15
Survey Crew	55
Expenses	At Cost

The following Table 1-2 represents a complete SI level of effort which incorporates both NYSDEC and NYSDOH concerns:

TABLE 1 - 2
SITE INVESTIGATION

Geoprobe macro cores	18 Nodes 0 - ± 14'	$ 6,512
Off-site (background)	2 Nodes 0 - ± 14'	
Monitoring wells-Drilling	3-2 inch Wells to ±24'	
Geoprobe PCB cores	4 Nodes 0- ± 14'	$ 500
Soil Gas Survey	±80 Samples @ $95	$ 7,600
Calibrations/blank runs	13 Samples @ $95	$ 1,235
Duplicates	8 Samples @ $95	$ 760
Laboratory:		
18 nodes-with QC	29 Samples @ $605	$ 17,545
Background-no QC	2 Samples @ $605	$ 1,210
On-site groundwater-with QC	11 Samples @ $605	$ 6,655
Tar-like substance-no QC	1 TCLP @ $750	$ 750
DOH surface soil-with QC	8 Samples @ $605	$ 4,840
Off-site surface background-no QC	2 Samples @ $605	$ 1,210
Duplicate air samples-lab QC	8 Samples @ $105	$ 840
PCB (EPA 8081)	6 Samples @ $ 90	$ 540
Unknowns-with QC	14 Samples @ $605	$ 8,470
Magnetometer	Site Profile	$ 2,800
Survey		$ 2,500
Project Management		$ 4,200
Field Crew		$ 5,400
	TOTAL	$73,567

✳ Original SI field work carryover (see Table 1-1) not included in Table 1-2:

Soil Gas Survey:	$ 6,740
Well sampling/development:	$ 2,000
Materials:	$ 1,900
Total:	$10,640

ITEM	ADD	
HNu VOC Monitoring	$ 800	
Data Validation	$ 1,500	
Dedicated Equipment	$ 1,500	
TO-14 calibration gas	$ 1,550	
Ultrapure Nitrogen gas	$ 500	
Sign	$ 350	
Drums, sheds, storage tank	$ 3,500	
Engineering, field work, QA/QC	$ 2,250	
Subtotal Additional		$ 11,950
Add:		
SI Field Work	$ 73,175	
✳ Phase I Field Work Carryover	$ 10,640	
Subtotal SI field work		$ 83,815
Add:		
Legal	$ 7,500	
Work Plans	$ 18,840	
Reporting	$ 47,140	
Subtotal		$ 73,480
TOTAL PROJECT COST: (Phase II SI not planned)		**$169,245**

The LaFrance Fire Engine Company occupied the site in 1903 according to the 1903 Sanborn map. A municipal sewer was not installed in the area until 1906. Therefore the original manufacturing facility initially was not, and may never have been, connected to the sewer.

1.2 Environmental History

The subject site had been the location of a fire truck manufacturing facility since the turn of the century. All phases of fire truck and extinguisher manufacturing took place on this site. Because of these various processes, the site is probably contaminated with hazardous materials and petroleum-based products. There are no waste disposal records for the site to prove proper disposal of waste materials typically used in this type of industry, and considering their prevailing practices relative to industrial waste management, site contamination is highly likely.

1.2.1 Potential Contamination

The following potential contaminants have been identified for this site:

Chlorinated solvents: Machine shops were in use at this site. Chlorinated solvents were typically and extensively used as degreasers. Paint thinners would also have been extensively used in the paint shops.

Semivolatile organics: Fire trucks were undercoated at this facility. An undercoating is a petroleum-based product. Historical records also show the presence of a fuel oil tank on the site. The foundries which operated on the site would also have contributed phenolic compounds. A tar substance was observed on the ground surface during the Phase I site inspection.

Metals: Foundries, paint shops, paint spray booths and plating operation could have released heavy metals at the site.

PCB's: There is at least one documented PCB release at the site which occurred in 1983. The release resulted from the unauthorized, unsupervised illegal "salvaging" of PCB containing transformers stationed on the roofs of many site buildings. A response action resulted, supervised by NYSDEC, with an established clean up level of 50 ppm for these areas known to be contaminated. However, due to the unsupervised and illegal nature of the salvaging operations, it is not certain that all areas impacted by the known release were detected. It is also possible that other releases, unknown to the authorities, could have occurred during this approximate time frame.

Sources at the City of Elmira recall approximately 250 cubic yards of contaminated material, was removed from the site for appropriate off-site disposal. The PCB clean-up area is shown in Figure 1.

It is recommended that limited discrete samples be obtained and analyzed to verify that all impacted areas have been addressed and that residual PCB levels are appropriate to future site uses.

Please refer to the December 1996 Phase I Environmental Assessment of the former American LaFrance property conducted by Fagan Engineers and included as Appendix A.

1.3 Site Investigation Work Plan Objectives

Site investigation objectives are specific goals to evaluate the human health and environmental risks and includes goals to generate sufficient information to develop a Remedial Alternatives Report. The Site Investigation will provide sufficient information to:

Fulfill the work plan objectives;

Make a preliminary identification of potential remedial alternatives;

Further define the study area of the SI/RAR;

Identify probable Standards, Criteria, and Guidance (SCG) and determine the extent to which they have been exceeded or contravened;

Perform a Health and Environmental Risk Assessment as necessary;

1.3.1 Magnetometer

A portable magnetometer (EM 31 or similar) will be utilized to locate potential underground storage tanks (UST's) and other large, highly metallic subsurface objects. Potential UST locations will be tied to the site survey.

1.3.2 Soils

In order to determine concentration levels of contaminants present, extent of contamination, depths of contaminants, and vadose zone at the site, soil samples will be collected and analyzed for potential hazardous contaminants.

Sampling of the site area soils and subsoils, sample locations, frequency and depths will be conducted as a design task based upon evaluation of the results of the magnetometer and from information obtained from the existing Phase I investigation. Sampling will be conducted to determine the lateral extent of soil contamination. Sample locations will be based on nodes generated from a 100-ft grid (see Figure 1). Sample cores will be collected in four foot macro cores from surface to groundwater depth. One discrete grab sample per node location will be selected for laboratory analysis based on visual staining, portable photoionization detector (PID) readings, or on-site gas chromatograph (GC) data. The samples will be analyzed to the Target Compound List (TCL) as identified in NYSDEC TAGM 4046, Attachment A.

Contaminated areas of the site will be delineated and included on the site map. Surface and subsurface soils will be fully characterized. Any areas of contamination will be noted, including a complete description of contaminants found and concentration levels of each contaminant. Results of this delineation will be used to select the most cost-effective remedial alternative options for the site.

1.3.3 Soil Gas Survey

A soil gas survey will be performed to delineate the vertical extent of volatile organic compound contamination. Macro cores from Section 1.3.2 will be utilized to provide air samples and any additional samples at intervals to be determined based on visual staining and PID readings. Air samples will be analyzed in the field. This method is designed to provide real time results which will guide the investigation to potential hot spots while mobilized in the field. GC use will follow Division of Environmental Remediation (DER) QC Guidelines for GC Field Screening Methods.

The portable GC method utilized in past investigations provided for immediate results through accurate field detection of chlorinated volatile organic compounds in soil gas, for concentrations in the parts per billion (ppb) range. The results of a past study have shown a loss of TCA between field analysis and lab analysis. This could be either by permeation through the tedlar bag or degradation of the TCA occurring in air samples stored in tedlar bags within several hours of obtaining the sample.

Therefore, the portable GC is able to obtain results within acceptable parameters by obtaining a dedicated air sample from the sampling pump. This eliminates use of the tedlar bags.

This method provides a reasonable alternative to storing samples for later analysis in the lab which may indicate substantially lower levels of contaminants than are actually present. This method also provides real-time data which can be applied in the field during an investigation enabling improved targeting to locate a potential contaminant source. Substantial cost savings are also realized over sampling with SUMA canisters. This methodology has also been supported in the past by the NYSDEC Bureau of Hazardous Site Control.

1.3.4 Groundwater

Groundwater gradient, direction of flow, and levels of upgradient and downgradient background contamination, will be determined with the initial placement of three strategically placed monitoring wells. Site based contamination that is impacting groundwater and the extent of the plume, if any, from contamination will be evaluated.

1.3.5 Sign

The 1996 Cleanwater/Clean Air Bond Act Project sign (per NYSDEC specifications) will be erected on the site (see Figure 2). Vinyl will be used for logo in place of silk screening.

ERIE STREET

E. LA FRANCE ST.

STREET

HOME

CONSOLIDATED RAIL

MANDEL'S RESTAURANT PROPERTY

FORMER FACTORY BUILDING

N.Y.S.D.O.T. JOB TRAILER

PAINT SHOP

PAINTING

MACHINE SHOP

SMOKE STACK AREA

PAVED AREAS

FOUNDRY

FORMER FACTORY BUILDING

MACHINE SHOP

PAVED AREAS

FORMER FACTORY BUILDING

FORMER FACTORY BUILDING

SPRAY BOOTH AREA

FORMER FACTORY BUILDING

LEGEND

- G — GEOPROBE LOCATIONS (18)
- G/W — GROUNDWATER SUPPLY LOCATIONS (5)
- H — SURFACE SOIL SAMPLES, DOH (4)
- PROPOSED MONITORING WELL LOCATIONS (3)
- G/T — GEOPROBE AT TAR TANK (1)
- G/B — GEOPROBE BACKGROUND LOCATIONS (2)
- GRID SPACING = 50'
- PROPERTY BOUNDARY
- PCB — FORMER PCB CLEAN-UP AREA

FORMER FACTORY BUILDING LOCATION REFERENCE :

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
CITY OF ELMIRA NORTH – SOUTH ARTERIAL
PENNSYLVANIA AVENUE TO CEDAR STREET
MAP # 2, SHEET 1. DATED : MAY 1980.
FORMER BUILDING LOCATIONS ARE APPROXIMATE
AS SITE IS CURRENTLY VACANT.

AMERICAN LA FRANCE BROWNFIELDS SITE

FORMER AMERICAN-LAFRANCE PROPERTY
TAX MAP # 99.12-2-1.1
ELMIRA, NEW YORK
AUGUST 1998

FIGURE 1
PROPOSED WORK PLAN

SCALE : 1"=60'

FAGAN ENGINEERS
Environmental Consultants
JOB # 97.150

1.3.6 Citizen Participation Plan

The Citizen Participation Plan (CPP) is included herein as Attachment C.

2.0 Site Investigation Work Plan

The SI Work Plan identifies specific tasks as part of the site investigation. This section describes work plan requirements for the American LaFrance (ALF) Brownfield Site.

2.1 Activities

The SI work plan provides a detailed description of Task 2 of the ALF Brownfield project. Data gathering activities specific to each of the tasks comprising SI Work Plan are discussed below.

Details of sampling methodology and analytical quality assurance (QA) are provided in the Sampling, Analysis and Monitoring Plan (SAMP) and Quality Assurance Project Plan (QAPP) found in Appendices B and C, respectively.

2.1.1 Topographical Survey

An initial topographical survey and sampling grid consisting of orthogonal sets of parallel lines will be established to delineate sample collection points. Parallel lines will be spaced 100 feet apart. Initial sampling locations will coincide with the grid nodes. Four additional sampling points will be determined in areas of concern (i.e. UST, paint shop area, smoke stack, and an unidentified building separate from the main facility). Ground surface elevations will be surveyed at each grid node. The area will be mapped with six-inch contour intervals and fences and ponded areas will be noted on the map. Surveying will be performed by a New York State licensed surveyor. The survey will be done on New York State Plane Coordinates. The site will then be mapped to include known surface / subsurface utilities and delineated sample collection points.

This data will be used to design the location of soil borings and monitoring wells. This data will also be useful in evaluation of remedial alternatives for the site and any performance monitoring requirements to assess the effectiveness and efficiency of remedial operations established during design.

2.1.2 Magnetometer Survey

A magnetometer survey of the entire site will be conducted to determine the presence of buried drums, underground storage tanks or other large highly metallic subsurface objects present at the site. This survey will be conducted using a portable magnetometer (EM 31 or similar units). Any potential objects identified during the survey will be delineated at the site and tied into the topographical survey map.

2.1.3 Geoprobe® Macro Cores

Fourteen macro cores will be sampled in an apprximate 100 foot grid. Soil samples will be collected in four foot by two inch diameter polypropylene macro cores from the surface to a depth corresponding to groundwater (approximately 14 feet) at the rate of one sample per grid section (14 points) with four additional points placed at potential hot spots, namely paint shop and spray booth areas, machine shop, and underground storage tank (UST) area which has been identified during the application preparation process (see Figure 1). The constituents of concern are chlorinated solvents, metals, and PCB's. One discrete grab sample will be obtained from each Geoprobe node location. Selection of the sample will be based on visual staining, PID readings, or on site GC data. The samples will be analyzed for all TAGM 4046 compounds (see Attachment A) and listed in the Sampling and Analytical Monitoring Plan (SAMP), Appendix B, Table 2-1, Superfund TCL and Contract Required Quantitation Limit.

Eighteen on-site Geoprobe points are planned for complete TCL analysis of subsurface soils.

Two off-site Geoprobe points are planned for complete TCL analysis of subsurface soils.

Four on-site and two off-site surface soil samples are planned for complete TCL analysis to meet NYSDOH concerns.

Five groundwater samples will be obtained from select Geoprobe locations (see Figure 1) for TCL analysis. Groundwater samples will be obtained utilizing a Masterflex L/S® sampling pump with dedicated C/Flex® tubing.

2.1.3.1 PCB Sampling

In order to confirm that no significant residual PCB soil contamination remains on the site, four discrete soil samples will be collected and analyzed for PCB's (EPA 8081). Soil will be obtained utilizing the Geoprobe macro core method. Soil samples for PCB analysis will be obtained from the area corresponding to the previous PCB clean-up excavation area (see Figure 1). Visibly stained surface soil in this area will also be analyzed for PCB's. Overburden and clean fill placed in the former PCB clean-up area will not be analyzed.

2.1.4 Soil Gas Survey

An HNu Model 311D portable gas chromatograph equipped with a 11.7 eV photoionization detection lamp, electron capture detector (ECD), and a DB624 capillary column (30m x 0.53mm) will be utilized to obtain an air sample from each soil sample. Actual GC configuration will be based on and calibrated to EPA Method TO-14.

The four foot macro cores obtained in Section 2.1.3 will be utilized to provide the air sampling media. Four 60 gram grab samples will be obtained for air analyses from the macro cores for up to a total of four samples per node or based on visible staining or PID readings in the field. A stainless steel air sampling probe connected to the GC sampling pump via teflon tubing will be inserted into the glass sample jar through an aluminum foil seal to obtain a dedicated zero headspace air sample.

The GC pump will be programmed to draw a 250 ml air sample volume (sample time of 15 seconds), per manufacturers specifications for this application. A particulate filter will be installed in-line to prevent soil particles from reaching the capillary column.

Instead of utilizing the GC pump, manual injection may be used. The method chosen will remain consistent throughout the SI.

All sampling equipment will be decontaminated between samples.

2.1.4.1 GC Standard Operating Procedure (GCSOP)

The GCSOP has been prepared in accordance with the NYSDEC Division of Environmental Remediation (DER) QC Guidelines for GC Field Screening Methods. The GCSOP is included herein in Attachment B.

Calibration:

The GC will be calibrated each morning prior to sampling. Three gases will be utilized to provide a 3-point initial calibration. QC criteria: correlation co-efficient ≥ 0.95. The gas mixture will be prepared by the manufacturer.

A calibration run will be performed daily. QC criteria: Relative Percent Difference (RPD) ≤ 30 percent.

A blank run will be performed after each initial calibration. QC criteria: Peak area for target compounds less than half the area of the reporting detection limit.

Duplicate analyses will be performed on ten percent of the samples.

Since macro core samples which exhibit visible staining, elevated PID and/or GC readings will be included for TCL analysis, the ten percent of the air samples will not be analyzed by a NYSDOH ELAP certified laboratory for EPA TO-14.

Samples will be obtained from each four foot macro core until groundwater is encountered. The sampling pump will be programed to purge ambient air from the tubing prior to analysis by the GC. The tubing will be purged with VOC-free purified air between samples.

Sample probes will be dedicated or decontaminated between sampling. Decontamination will consist of an Alconox® wash followed by a deionized water rinse and thoroughly dried.

Soil gas readings exceeding background levels will be utilized to highlight probable hot spots requiring further investigation. Results of this delineation will be used to select additional soil boring locations and areas of further investigations in the secondary phase. Sample locations, frequency, and depths are described in detail in the SAMP, as are analytical parameters and methods.

2.1.4.1.1 GCSOP Modified Procedure

Due to the close proximity of the subject site to the office of the Consultant (less than 0.5 miles), the portable gas chromatograph (GC) may remain at the office of the Consultant. Macro core GC samples may be transported to the Consultants office for GC analysis.

Zero headspace GC samples will be prepared on-site and transported to Consultants office in a cooler at 4° C.

Subsequent to GC sampling, samples will be returned to the site for disposal with remaining macro core soil.

H:\WPDATA\97-150\MODS.821

2.1.5 Hydrologic Investigation & Groundwater Analyses

Three monitoring / observation wells will be installed as part of the SI. Monitoring wells will be installed with one at a proposed upgradient site, and two down gradient locations. These locations will be determined by using the groundwater data from the Geoprobe macro cores and 1982 Potentiometric Surface by Miller and Allen (see Figure 3).

Groundwater monitoring and sampling will be conducted to determine flow and contaminants present in groundwater. A specific description of proposed sample locations and estimated depth are described in detail in the SAMP, as are analytical parameters and methods. Results of this phase will provide data to determine groundwater contamination and direction of migration.

Field analytical equipment will be calibrated prior to each day's use, in accordance with the manufacturer's instructions, and such calibration will be recorded in the field log. Instruction manuals for the operation of field analytical equipment will be available with the equipment. Standards used in the calibration of equipment will be traceable, directly or indirectly, to USEPA-approved reference materials. Standards received will be entered into standard logs. Each analytical group will maintain standard preparation logs that track the preparation of standards used for calibration and QC purposes.

Prior to any field sampling, each piece of field equipment will be checked for proper operation. If the equipment is not operational, it will be serviced prior to use. Meters that require charging or batteries will be fully charged or have fresh batteries. If instrument servicing is required, the appropriate task manager is responsible for following the maintenance schedule and arranging for prompt service.

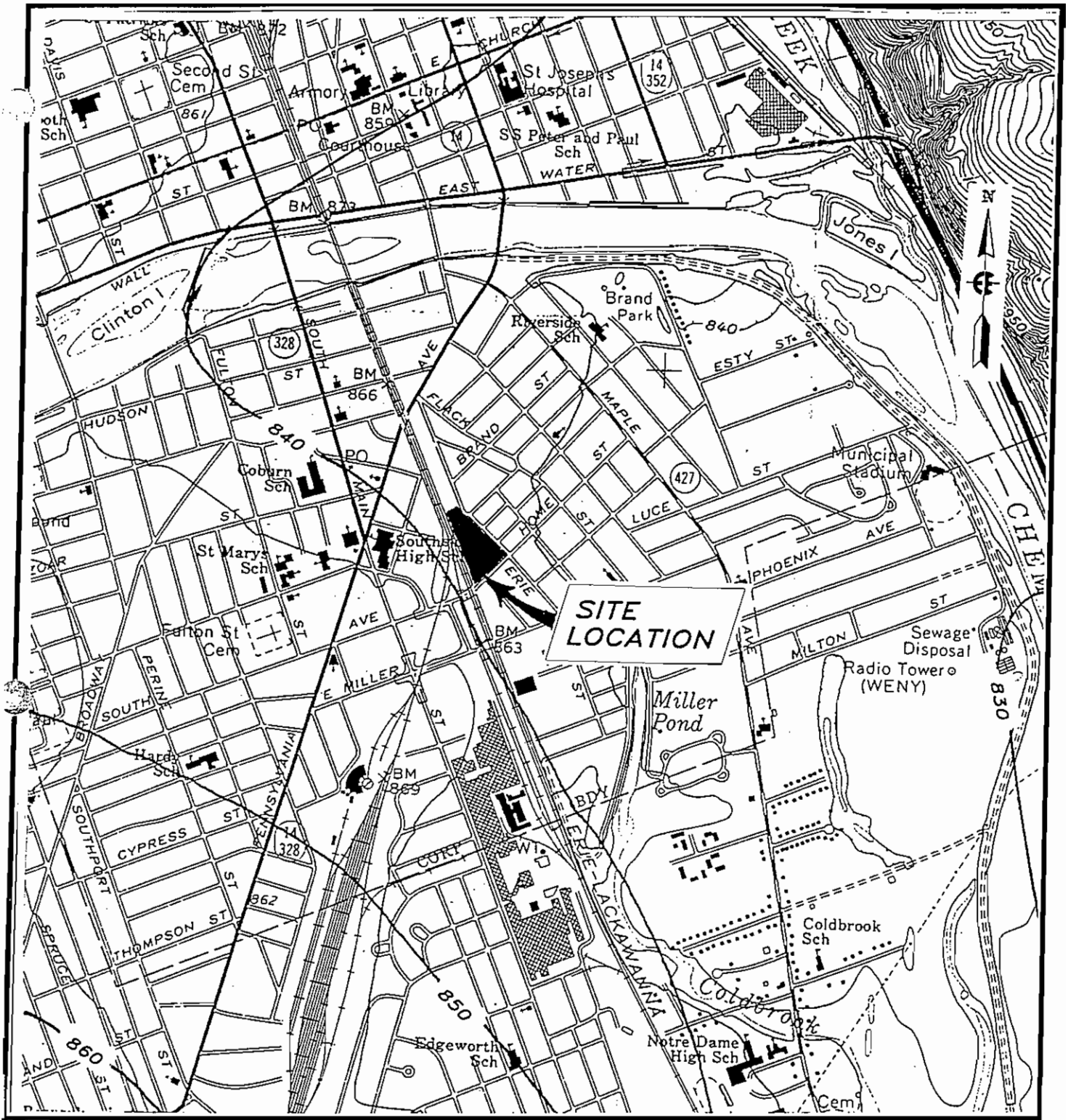
Non-operational field equipment will be either repaired or replaced. Appropriate spare parts will be maintained for field meters. Fagan is located within 1 mile of ALF site and maintains an inventory of common spare parts.

Prior to installation of the monitoring wells, an investigation of the general area will be conducted to determine if there are monitoring wells in the vicinity and the availability of historical data from these wells.

2.2 Deliverables

The Site Investigation Work Plan is designed to generate sufficient information to develop a Remedial Alternatives Report. These tasks include the following deliverables:

- ☼ Identify and Characterize Sources of Contamination,
- ☼ Describe Amount, Concentration, Persistence, Mobility, State and Characteristics of Contaminants Present,
- ☼ Evaluate Extent to which Barriers Contain Contamination,
- ☼ Define Extent of Present and Potential Migration of Contaminants & threat to Human Health and the Environment,
- ☼ Identify Potential Routes of Exposure,



AMERICAN LA FRANCE BROWNFIELDS SITE

FIGURE 3
POTENTIOMETRIC CONTOUR MAP
NOT TO SCALE

FORMER AMERICAN-LAFRANCE PROPERTY
TAX MAP # 99.12-2-1.1
ELMIRA, NEW YORK
AUGUST, 1998

FAGAN ENGINEERS
Environmental Consultants
JOB # 97.150

- ☼ Identify Populations and Environmental Receptors at Risk,
- ☼ Describe Hydrogeological Factors,
- ☼ Describe Groundwater Characteristics & Potential Use,
- ☼ Identify Private Water Supplies in Area & Include Appropriate Sampling Plan,
- ☼ Qualitatively Describe Property's Contribution to Air, Land, Water, Biota and Food Chain, and
- ☼ Determine Extent Contamination Levels Pose Unacceptable Risk to Public Health & Environment.

2.3 Sampling, Analysis, and Monitoring Plan

The SAMP describes in detail the sampling, analysis and monitoring activities that must be performed to facilitate the goals as specified in the SI Work Plan. The SAMP is provided as Appendix B to this SI Work Plan. The SAMP establishes the procedures and methods for sampling and analysis of soil gas, soil and groundwater to determine the extent of the contamination and classify such soil for the development of remedial alternatives. The SAMP includes detailed descriptions of sampling locations (both lateral and vertical) and frequency of sampling for each medium to be sampled (e.g., soil gas, soil and groundwater).

2.4 Quality Assurance Project Plan

The QAPP is prepared to provide quality assurance and maintain quality control with respect to all samples collected for the SI Work Plan.

The QAPP defines the project organization and assignment of responsibilities; quality assurance objectives; calibration procedures and frequency; laboratory's analytical methods; laboratory data reduction, validation, and reporting requirements; internal quality control checks and auditing requirements; specific routine procedures to assess data precision, accuracy and completeness; corrective action procedures; and quality assurance reporting requirements. The QAPP is included as Appendix C to this SI Work Plan.

2.5 Health and Safety/Contingency Plan

A Health and Safety/Contingency Plan (HSCP) has been submitted as Appendix D to this SI Work Plan to address the protection of the health and safety of on-site workers and the public during SI activities. In addition, the HSCP provides instruction to SI participants on how to respond to contingencies that could impact public health, safety and the environment during SI activities. The HSCP has been prepared in accordance with the requirements of the *Occupational Safety and Health Guidance for Hazardous Waste Site Activities* (October 1985, DHH 5, NIOSH Publication No. 85-115), and Occupational Safety and Health Administration (OSHA), U.S. Department of Labor requirements (e.g., 29 C.F.R. §1910.120).

2.6 Site Management Plan

The Site Management Plan (SMP) describes the provisions for access, security, contingency procedures, management responsibilities and waste disposal to be undertaken during SI field activities. This SMP includes a pollution control and mitigation plan and a remedial waste management plan. The pollution and control and mitigation plan outlines the process, procedures and safeguards that will be used to ensure that hazardous substances, pollutants, contaminants or other materials are not released off site during implementation of the site investigation. The remedial waste management plan describes the waste management and disposal activities to be conducted during SI. The SMP is included as Section 4.0 of this SI Work Plan.

2.7 Phase 2 (Additional Investigation)

The SI field work plan has been modified to incorporate the concerns and requirements of NYSDEC and NYSDOH based on comments by both parties and taking into account existing knowledge of the project site. It is anticipated that the proposed revised SI/RAR will satisfy the requirements of NYSDEC and NYSDOH. Therefore, the need for a Phase 2 SI has been eliminated with the exception that should issues be identified during the SI field work or should the data identify issues which require further delineation, said issues will be discussed with all involved agencies and parties, and a plan of action recommended.

3.0 Property Access and Approvals

This section discusses property access agreements, permits, and ancillary approvals which may be required for implementation of the Site Investigation.

3.1 Access Agreements

Access agreements will be made with the property owner (City of Elmira) and with adjacent landowners as required.

3.2 Permits

It is anticipated that no permits will be required for the on site work required for this Site Investigation.

3.3 Ancillary Approvals

Other approvals include notification of the Underground Facilities Protective Organization before monitoring well installation and Geoprobe sampling. Approval will be requested of the Chemung County Solid Waste Management District for disposal of stored drill cuttings generated from installation of monitoring wells if found nonhazardous. Approval from the Chemung County Elmira Sewer District will be requested for disposal of groundwater generated during monitoring well development and subsequent sampling.

It is not anticipated that residual soil generated during the site investigation activities will be hazardous, however, any hazardous materials generated during the site investigation will be handled in a manner acceptable and approved by the NYSDEC.

4.0 Site Management Plan

This Site Management Plan (SMP) details the provisions to be taken by SI personnel to control work area access, security, contingency procedures, management responsibilities and waste disposal during site investigation field activities.

4.1 Project Personnel Security and Access Control

It is the responsibility of the Project Manager to supervise personnel in accordance with the SMP.

4.2 Security and Access Control

The site is presently uncontrolled and will remain so during site investigation activities The site is also presently being used as a staging and field office area by NYSDOT and Coldsprings Construction Company.

Equipment remaining on site during SI activities will be secured and the responsibility of the contractor. SI personnel on site during site investigation activities will be responsible for control of unauthorized personnel.

4.3 Contingency Procedures

Contingency procedures for emergency medical situations arising from SI activities are described in the HSCP. The HSCP lists telephone numbers of emergency contacts and provides directions to the nearest medical facilities. Contingency procedures for any action which causes or threatens an accidental release of materials during SI activities, or which constitutes an emergency situation or may present an immediate threat to public health or the environment, will consist of immediate action to prevent, abate, or minimize the release or threat of release. Appropriate safety personnel will be notified to initiate any necessary emergency response. Emergency response contractors will be summoned, if necessary. Any such incident requiring contingency action will result in notification of the NYSDEC Project Coordinator, and other state and local health officials. Mr. Scott Rodabaugh, NYSDEC Spill Response Engineer will also be notified at (607) 739-0809.

4.4 Pollution Control and Mitigation Plan

Intrusive activities are limited in scope and include associated drilling for soil and groundwater sampling for delineation and contaminant concentrations of the site. Precautionary measures will be taken to ensure that hazardous substances, contaminants, or pollutants are not released in connection with SI activities. To help prevent possible downward migration of constituents, monitoring wells will be properly sealed from the surface with bentonite grout. The monitoring well installation detail is included in SAMP. In addition, soil borings will be grouted from bottom to top using a bentonite slurry by the Tremie method.

Generation of solid investigation-derived waste (IDW) will be minimized by use of small-diameter Geoprobe® sampling equipment. Solid IDW generated from delineation of site soils (e.g., soil cuttings) will be containerized in 55-gallon drums and stored for disposal. Soil cuttings will be disposed of an off site with after appropriate sampling and analysis and nonhazardous determination at an NYS permitted MSW facility (e.g., Chemung County Solid Waste Management Landfill).

Some liquid IDW will be generated in association with shallow wells installed and developed to monitor groundwater quality. Liquid IDW will be containerized in 55-gallon drums for transport to and treatment at the Chemung County Elmira Sewer District facility.

4.5 Remedial Waste Management Plan

Waste materials anticipated to be generated during the SI include drill cuttings, excess sample media, personal protective equipment (PPE) and groundwater from the development and sampling of monitoring wells. Drill cuttings from monitoring well installation and excess core sample material will be containerized in 55-gallon drums and stored for off site disposal in a sanitary landfill. PPE will be bagged, placed in an appropriate plant waste receptacle, and disposed of off site in a sanitary landfill.

Groundwater extracted for monitoring well development, decontamination of equipment and monitoring well sampling will be containerized in 55-gallon drums or high-density polyethylene carboys. The containers will be transported to the Chemung County Elmira Sewer District facility for appropriate waste water treatment.

5.0 Project Organization

The project organization for the completion of the SI and supporting documents is depicted on Table 5.1. Ms. Mary Jane Peachy, P.E., and Mr. Manmohan Mehta, P.E., are the NYSDEC Region 8 coordinator and project manager respectively. Ms. Mary Jane Peachy will represent the NYSDEC in correspondence with the City of Elmira and Fagan Engineers and will oversee NYSDEC review of submittals. Mr. Daniel Geraghty will represent the NYSDOH. Representatives for the City of Elmira will be Mr. Jeffery Lacey, Esq., of Mackenzie Smith Lewis Mitchell & Hughes, LLP, for contractual and legal matters and Ms. Cheryl Schneider, Executive Director, City of Elmira Department of Business and Housing Development for day to day coordination.

- **Project Coordinator**

  The Project Coordinator will have overall responsibility for project management to ensure that the City of Elmira and Fagan Engineers fulfills its obligations for this Site Investigation and Remedial Alternatives Report. Duties of the Project Coordinator include scheduling, agency interaction, overseeing the technical quality of the project, and ensuring that appropriate QA/QC procedures are followed. The Project Coordinator will coordinate the activities of the Project Manager and Quality Assurance Officer, and will serve as the Health and Safety Officer. Mr. Dennis Fagan, P.E., Principal of Fagan Engineers is the designated Project Coordinator.

- **Project Manager**

The Project Manager will work closely with the Project Coordinator and contractors to ensure that the technical requirements of the SI Work Plan are satisfied. The Project Manager will make recommendations to the Project Coordinator for approval, and will help coordinate SI field activities. In addition, the Project Manager is responsible for the preparation of the SI Work Plan and related submittals with input from the other SI contractors. Mr. Stephen Degerdon, Environmental Analyst for Fagan Engineers is the designated project manager. The project manager has decision-making authority on behalf of Fagan Engineers and is responsible for administering contracts and providing management of Fagan Engineers reports and submittal documents. The Project Manager will also serve as the on-site Health and Safety Representative.

- **Health and Safety Officer**

The Health and Safety Officer is responsible to see that work performed on the site is performed in accordance with the Health and Safety Contingency Plan. Mr. Dennis A. Fagan, P.E., is the designated Health and Safety Officer. The Health and Safety Representative reports directly to the Health and Safety Officer.

- **Quality Assurance Officer**

The Quality Assurance Officer will act in conjunction with the Project Manager to develop a site-specific quality assurance plan. Mr. Edward T. Tietje, III, staff engineer with Fagan Engineers is the designated Quality Assurance Officer.

- **Site Investigation Contractors**

SI contractors will be retained to install monitoring wells, provide Geoprobe services, laboratory analysis and perform any additional hydrologic investigation as needed. The site investigation contractors have not been identified to date as no contract is in place until approval of this work plan.

TABLE 5 - 1

PROJECT ORGANIZATION

The following "Project Team" consisting of representatives from the City of Elmira, NYSDEC and the City's Engineering and Legal Consultants has been established:

NYSDEC:

Ms. Mary Jane Peachy, P.E., Project Coordinator
(716) 226-2466

Mr. Manmohan Mehta, P.E., Project Manager
(716) 226-2466

Mr. Scott Rodabaugh, P.E., NYSDEC Spill Response Engineer
(607) 739-0809

NYSDOH

Mr. Daniel Geraghty, Public Health Specialist II
(518) 458-6309

CITY OF ELMIRA

Ms. Cheryl Schneider, Elmira Department of Business and Housing Development
(607) 737-5607

Mr. Jeffery T. Lacey, Esq. Legal Council for the City of Elmira
(315) 474-7571

CONSULTANT:

Mr. Dennis Fagan, P.E., Fagan Engineers, Project Coordinator
(607) 734-2165

Mr. Stephen Degerdon, Fagan Engineers, Project Manager
(607) 734-2165

Mr. Edward T. Tietje, III, Quality Assurance Officer
(607) 734-2165

Mr. Dennis A. Fagan, P.E., Health and Safety Officer
(607) 734-2165

TABLE A

ESTIMATED PROGRESS SCHEDULE

LaFRANCE BROWNFIELD SITE INVESTIGATION

TASK	ESTIMATED DATE OF COMPLETION
Work Plan and appendices	September, 1998
Site Investigation Field Work*	
Initial Start-Up	September, 1998
Surveying	November, 1998
Magnotometer	November, 1998
NYSDOH Surface Soil Samples	November, 1998
Geoprobe/Soil Gas Survey	July, 1999
Monitoring Well Installation	July, 1999
Receipt of Laboratory Deliverables	August, 1999
Data Validation	August, 1999
Reporting	
Risk Assessment	September, 1999
SI/RAR Report	November, 1999

*All field work is dependent upon weather conditions.

H:\WPDATA\97-150\TIMELINE.909

ATTACHMENT A

NYSDEC TAGM 4046

TAGM 4046
January 24, 1994
(REVISED)

New York State Department of Environmental Conservation

MEMORANDUM

TO: Regional Haz. Waste Remediation Engineers, Bureau Dirs. & Section Chiefs
FROM: Michael J. O'Toole, Jr., Director, Div. of Hazardous Waste Remediation
SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM: DETERMINATION OF SOIL CLEANUP OBJECTIVES AND CLEANUP LEVELS
DATE: JAN 24 1994

The cleanup goal of the Department is to restore inactive hazardous waste sites to predisposal conditions, to the extent feasible and authorized by law. However, it is recognized that restoration to predisposal conditions will not always be feasible.

1. INTRODUCTION:

This TAGM provides a basis and procedure to determine soil cleanup levels at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the DHWR determines that cleanup of a site to predisposal conditions is not possible or feasible.

The process starts with development of soil cleanup objectives by the Technology Section for the contaminants identified by the Project Managers. The Technology Section uses the procedure described in this TAGM to develop soil cleanup objectives. Attainment of these generic soil cleanup objectives will, at a minimum, eliminate all significant threats to human health and/or the environment posed by the inactive hazardous waste site. Project Managers should use these cleanup objectives in selecting alternatives in the Feasibility Study (FS). Based on the proposed selected remedial technology (outcome of FS), final site specific soil cleanup levels are established in the Record of Decision (ROD) for these sites.

It should be noted that even after soil cleanup levels are established in the ROD, these levels may prove to be unattainable when remedial construction begins. In that event, alternative remedial actions or institutional controls may be necessary to protect the environment.

2. BASIS FOR SOIL CLEANUP OBJECTIVES:

The following alternative bases are used to determine soil cleanup objectives:

(a) Human health based levels that correspond to a less lifetime

cancer risks of one in a million for Class A[1] and B[2] carcinogens, or one in 100,000 for Class C[3] carcinogens. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;

(b) Human health based levels for systemic toxicants, calculated from Reference Doses (RfDs). RfDs are an estimate of the daily exposure an individual (including sensitive individuals) can experience without appreciable risk of health effects during a lifetime. An average scenario of exposure in which children ages one to six (who exhibit the greatest tendency to ingest soil) is assumed. An intake rate of 0.2 gram/day for a five-year exposure period for a 16-kg child is assumed. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;

(c) Environmental concentrations which are protective of groundwater/drinking water quality; based on promulgated or proposed New York State Standards;

(d) Background values for contaminants; and

(e) Detection limits.

A recommendation on the appropriate cleanup objective is based on the criterion that produces the most stringent cleanup level using criteria a, b, and c for organic chemicals, and criteria a, b, and d for heavy metals. If criteria a and/or b are below criterion d for a contaminant, its background value should be used as the cleanup objective. However, cleanup objectives developed using this approach must be, at a minimum, above the method detection limit (MDL) and it is preferable to have the soil cleanup objectives above the Contract Required Quantitation Limit (CRQL) as defined by NYSDEC. If the cleanup objective of a compound is "non-detectable", it should mean that it is not detected at the MDL. Efforts should be made to obtain the best MDL detection possible when selecting a laboratory and analytical protocol.

The water/soil partitioning theory is used to determine soil cleanup objectives which would be protective of groundwater/drinking water quality for its best use. This theory is conservative in nature and assumes that contaminated soil and groundwater are in direct contact. This theory is based upon the ability of organic matter in soil to adsorb organic chemicals. The approach predicts the maximum amount of contamination that may remain in soil so that leachate from the contaminated soil will not violate groundwater and/or drinking water

standards.

(1) Class A are proved human carcinogens
(2) Class B are probable human carcinogens
(3) Class C are possible human carcinogens

This approach is not used for heavy metals, which do not partition appreciably into soil organic matter. For heavy metals, eastern USA or New York State soil background values may be used as soil cleanup objectives. A list of values that have been tabulated is attached. Soil background data near the site, if available, is preferable and should be used as the cleanup objective for such metals. Background samples should be free from the influences of this site and any other source of contaminants. Ideal background samples may be obtained from uncontaminated upgradient and upwind locations.

3. DETERMINATION OF SOIL CLEANUP GOALS FOR ORGANICS IN SOIL FOR PROTECTION OF WATER QUALITY

Protection of water quality from contaminated soil is a two-part problem. The first is predicting the amount of contamination that will leave the contaminated media as leachate. The second part of the problem is to determine how much of that contamination will actually contribute to a violation of groundwater standards upon reaching and dispersing into groundwater. Some of the contamination which initially leaches out of soil will be absorbed by other soil before it reaches groundwater. Some portion will be reduced through natural attenuation or other mechanism.

PART A: PARTITION THEORY MODEL

There are many test and theoretical models which are used to predict leachate quality given a known value of soil contamination. The Water-Soil Equilibrium Partition Theory is used as a basis to determine soil standard or contamination limit for protection of water quality by most of the models currently in use. It is based on the ability of organic carbon in soil to adsorb contamination. Using a water quality value which may not be exceeded in leachate and the partition coefficient method, the equilibrium concentration (Cs) will be expressed in the same units as the water standards. The following expression is used:

Allowable Soil Concentration $Cs = f \times Koc \times Cw$ . . . . (1)

Where: f = fraction of organic carbon of the natural soil medium.

Koc = partition coefficient between water and soil media. Koc can be estimated by the following equation:

log Koc = 3.64 - 0.55 log S

S = water solubility in ppm
Cw = appropriate water quality value from TOGS 1.1.1

Most Koc and S values are listed in the Exhibit A-1 of the USEPA Superfund Public Health Evaluation Manual (EPA/540/1-86/060). The Koc values listed in this manual should be used for the purpose. If the Koc value for a contaminant is not listed, it should be estimated using the above mentioned equation.

PART B: PROCEDURE FOR DETERMINATION OF SOIL CLEANUP OBJECTIVES

When the contaminated soil is in the unsaturated zone above the water table, many mechanisms are at work that prevent all of the contamination that would leave the contaminated soil from impacting groundwater. These mechanisms occur during transport and may work simultaneously. They include the following: (1) volatility, (2) sorption and desorption, (3) leaching and diffusion, (4) transformation and degradation, and (5) change in concentration of contaminants after reaching and/or mixing with the groundwater surface. To account for these mechanisms, a correction factor of 100 is used to establish soil cleanup objectives. This value of 100 for the correction is consistent with the logic used by EPA in its Dilution Attenuation Factor (DAF) approach for EP Toxicity and TCLP. (Federal Register/Vol. 55, No. 61, March 29, 1990/Pages 11826-27). Soil cleanup objectives are calculated by multiplying the allowable soil concentration by the correction factor. If the contaminated soil is very close (<3' - 5') to the groundwater table or in the groundwater, extreme caution should be exercised when using the correction factor of 100 (one hundred) as this may not give conservative cleanup objectives. For such situations the Technology Section should be consulted for site-specific cleanup objectives.

Soil cleanup objectives are limited to the following maximum values. These values are consistent with the approach promulgated by the States of Washington and Michigan.

1) Total VOCs $\leq$ 10 ppm.
2) Total Semi VOCs $\leq$ 500 ppm.
3) Individual Semi VOCs $\leq$ 50 ppm.
4) Total Pesticides $\leq$ 10 ppm.

One concern regarding the semi-volatile compounds is that some of these compounds are so insoluble that their Cs values are fairly large. Experience (Draft TOGS on Petroleum

Contaminated Soil Guidance) has shown that soil containing some of these insoluble substances at high concentrations can exhibit a distinct odor even though the substance will not leach from the soil. Hence any time a soil exhibits a discernible odor nuisance, it shall not be considered clean even if it has met the numerical criteria.

4. DETERMINATION OF FINAL CLEANUP LEVELS:

Recommended soil cleanup objectives should be utilized in the development of final cleanup levels through the Feasibility Study (FS) process. During the FS, various alternative remedial actions developed during the Remedial Investigation (RI) are initially screened and narrowed down to the list of potential alternative remedial actions that will be evaluated in detail. These alternative remedial actions are evaluated using the criteria discussed in TAGM 4030, Selection of Remedial Actions at Inactive Hazardous Waste Sites, revised May 15, 1990, and the preferred remedial action will be selected. After the detailed evaluation of the preferred remedial action, the final cleanup levels which can be actually achieved using the preferred remedial action must be established. Remedy selection, which will include final cleanup levels, is the subject of TAGM 4030.

Recommended soil cleanup objectives that have been calculated by the Technology Section are presented in Appendix A. These objectives are based on a soil organic carbon content of 1% (0.01) and should be adjusted for the actual organic carbon content if it is known. For determining soil organic carbon content, use attached USEPA method (Appendix B). Please contact the Technology Section, Bureau of Program Management for soil cleanup objectives not included in Appendix A.

Attachments

cc: T. Jorling
J. Lacey
M. Gerstman
A. DeBarbieri
E. Sullivan
T. Donovan
C. Sullivan
J. Eckl
R. Davies
R. Dana
C. Goddard
E. McCandless
P. Counterman
J. Davis
J. Kelleher
J. Colquhoun
D. Persson
A. Carlson
M. Birmingham
D. Johnson
B. Hogan
Regional Directors
Regional Engineers
Regional Solid and Haz. Waste Engrs.
Regional Citizen Participation Spec.

EPA 8260

APPENDIX A

TABLE 1

Recommended soil cleanup objectives (mg/kg or ppm)

Volatile Organic Contaminants

Contaminant	Partition coefficient Koc	Groundwater Standards/ Criteria Cw ug/l or ppb.	a Allowable Soil conc. ppm. Cs	b ** Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (ppm) Carcinogens	Systemic Toxicants	CRQL (ppb)	*** Rec.soil Clnup Objc (ppm)
Acetone	2.2	50	0.0011	0.11	N/A	8,000	10	0.2
Benzene	83	0.7	0.0006	0.06	24	N/A	5	0.06
Benzoic Acid	54*	50	0.027	2.7	N/A	300,000	5	2.7
2-Butanone MEK	4.5*	50	0.003	0.3	N/A	4,000	10	0.3
Carbon Disulfide	54*	50	0.027	2.7	N/A	8,000	5	2.7
Carbon Tetrachloride	110*	5	0.006	0.6	5.4	60	5	0.6
Chlorobenzene	330	5	0.017	1.7	N/A	2,000	5	1.7
Chloroethane	37*	50	0.019	1.9	N/A	N/A	10	1.9
Chloroform	31	7	0.003	0.30	114	800	5	0.3
Dibromochloromethane	N/A	50	N/A	N/A	N/A	N/A	5	N/A
1,2-Dichlorobenzene	1,700	4.7	0.079	7.9	N/A	N/A	330	7.9
1,3-Dichlorobenzene	310 *	5	0.0155	1.55	N/A	N/A	330	1.6
1,4-Dichlorobenzene	1,700	5	0.085	8.5	N/A	N/A	330	8.5
1,1-Dichloroethane	30	5	0.002	0.2	N/A	N/A	5	0.2
1,2-Dichloroethane	14	5	0.001	0.1	7.7	N/A	5	0.1
1,1-Dichloroethene	65	5	0.004	0.4	12	700	5	0.4
1,2-Dichloroethene(trans)	59	5	0.003	0.3	N/A	2,000	5	0.3
1,3-dichloropropane	51	5	0.003	0.3	N/A	N/A	5	0.3
Ethylbenzene	1,100	5	0.055	5.5	N/A	8,000	5	5
113 Freon(1,1,2 Trichloro-1,2,2 Trifluoroethane)	1,230*	5	0.060	6.0	N/A	200,000	5	6.0
Methylene chloride	21	5	0.001	0.1	93	5,000	5	0.1
4-Methyl-2-Pentanone	19*	50	0.01	1.0	N/A	N/A	10	1.0
Tetrachloroethene	277	5	0.014	1.4	14	800	5	1.4
1,1,1-Trichloroethane	152	5	0.0076	0.76	N/A	7,000	5	0.8
1,1,2,2-Tetrachloroethane	118	5	0.006	0.6	35	N/A	5	0.6
1,2,3-trichloropropane	68	5	0.0034	0.34	N/A	80	5	0.4
1,2,4-Trichlorobenzene	670 *	5	0.034	3.4	N/A	N/A	330	3.4
Toluene	300	5	0.015	1.5	N/A	20,000	5	1.5
Trichloroethene	126	5	0.007	0.70	64	N/A	5	0.7
Vinyl chloride	57	2	0.0012	0.12	N/A	N/A	10	0.2
Xylenes	240	5	0.012	1.2	N/A	200,000		1.2

a. Allowable Soil Concentration Cs = f x Cw x Koc

b. Soil cleanup objective = Cs x Correction Factor (CF)

N/A is not available

* Partition coefficient is calculated by using the following equation:
log Koc = -0.55 log S + 3.64, where S is solubility in water in ppm.
All other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1% , and should be adjusted for the actual soil organic carbon content if it is known.

APPENDIX A (cont.)

TABLE 2

Recommended Soil Cleanup Objectives (mg/kg or ppm)

Semi-Volatile Organic Contaminants

EPA 8270 BNA

Contaminant	Partition coefficient Koc	Groundwater Standards/ Criteria Cw ug/l or ppb.	a Allowable Soil conc. ppm. Cs	b ** Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (ppm) Carcinogens	Systemic Toxicants	CROL (ppb)	Rec.soil Clnup Obj (ppm)
Acenaphthene	4,600	20	0.9	90.0	N/A	5,000	330	50.0*
Acenaphthylene	2,056*	20	0.41	41.0	N/A	N/A	330	41.0
Aniline	13.8	5	0.001	0.1	123	N/A	330	0.1
Anthracene	14,000	50	7.00	700.0	N/A	20,000	330	50.0*
Benzo(a)anthracene	1,380,000	0.002	0.03	3.0	0.224	N/A	330	0.224 or
Benzo(a)pyrene	5,500,000	0.002(ND)	0.110	11.0	0.0609	N/A	330	0.061 or
Benzo(b)fluoranthene	550,000	0.002	0.011	1.1	N/A	N/A	330	1.1
Benzo(g,h,i)perylene	1,600,000	5	8.0	800	N/A	N/A	330	50.0*
Benzo(k)fluoranthene	550,000	0.002	0.011	1.1	N/A	N/A	330	1.1
bis(2-ethylhexyl)phthalate	8,706*	50	4.35	435.0	50	2,000	330	50.0*
Butylbenzylphthlate	2,430	50	1.215	122.0	N/A	20,000	330	50.0*
Chrysene	200,000	0.002	0.004	0.4	N/A	N/A	330	0.4
4-Chloroaniline	43 ****	5	0.0022	0.22	200	300	330	0.220 or
4-Chloro-3-methylphenol	47	5	0.0024	0.24	N/A	N/A	330	0.240 or
2-Chlorophenol	15*	50	0.008	0.8	N/A	400	330	0.8
Dibenzofuran	1,230*	5	0.062	6.2	N/A	N/A	330	6.2
Dibenzo(a,h)anthracene	33,000,000	50	1,650	165,000	0.0143	N/A	330	0.014 or
3,3'-Dichlorobenzidine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dichlorophenol	380	1	0.004	0.4	N/A	200	330	0.4
2,4-Dinitrophenol	38	5	0.002	0.2	N/A	200	1,600	0.200 or
2,6 Dinitrotoluene	198*	5	0.01	1.0	1.03	N/A	330	1.0
Diethylphthlate	142	50	0.071	7.1	N/A	60,000	330	7.1
Dimethylphthlate	40	50	0.020	2.0	N/A	80,000	330	2.0
Di-n-butyl phthalate	162*	50	0.081	8.1	N/A	8,000	330	8.1
Di-n-octyl phthlate	2,346*	50	1.2	120.0	N/A	2,000	330	50.0
Fluoranthene	38,000	50	19	1900.0	N/A	3,000	330	50.0
Fluorene	7,300	50	3.5	350.0	N/A	3,000	330	50.0
Hexachlorobenzene	3,900	0.35	0.014	1.4	0.41	60	330	0.4
Indeno(1,2,3-cd)pyrene	1,600,000	0.002	0.032	3.2	N/A	N/A	330	3.2
Isophorone	88.31*	50	0.044	4.40	1,707	20,000	330	4.4
2-methylnaphthalene	727*	50	0.364	36.4	N/A	N/A	330	36.4
2-Methylphenol	15	5	0.001	0.1	N/A	N/A	330	0.100 or
4-Methylphenol	17	50	0.009	0.9	N/A	4,000	330	0.9
Naphthalene	1,300	10	0.130	13.0	N/A	300	330	13.0
Nitrobenzene	36	5	0.002	0.2	N/A	40	330	0.200 or
2-Nitroaniline	86	5	0.0043	0.43	N/A	N/A	1,600	0.430 or
2-Nitrophenol	65	5	0.0033	0.33	N/A	N/A	330	0.330 or
4-Nitrophenol	21	5	0.001	0.1	N/A	N/A	1,600	0.100 or
3-Nitroaniline	93	5	0.005	0.5	N/A	N/A	1,600	0.500 or
Pentachlorophenol	1,022	1	0.01	1.0	N/A	2,000	1,600	1.0 or
Phenanthrene	4,365*	50	2.20	220.0	N/A	N/A	330	50.0
Phenol	27	1	0.0003	0.03	N/A	50,000	330	0.03 or
Pyrene	13,295*	50	6.65	665.0	N/A	2,000	330	50.
2,4,5-Trichlorophenol	89*	1	0.001	0.1	N/A	8,000	330	0.

EPA 8081

APPENDIX A (cont.)

TABLE 3

Recommended soil cleanup objectives (mg/kg or ppm)

Organic Pesticides / Herbicides and PCBs

Contaminant	Partition coefficient Koc	Groundwater Standards/ Criteria Cw ug/l or ppb.	a Allowable Soil conc. ppm. Cs	b ** Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (ppm) Carcinogens	Systemic Toxicants	CRQL (ppb)	*** Rec.Soil Clnup Objct (ppm)
Aldrin	96,000	ND(<0.01)	0.005	0.5	0.041	2	8	0.041
alpha - BHC	3,800	ND(<0.05)	0.002	0.2	0.111	N/A	8	0.11
beta - BHC	3,800	ND(<0.05)	0.002	0.2	3.89	N/A	8	0.2
delta - BHC	6,600	ND(<0.05)	0.003	0.3	N/A	N/A	8	0.3
Chlordane	21,305*	0.1	0.02	2.0	0.54	50	80	0.54
2,4-D	104*	4.4	0.005	0.5	N/A	800	800	0.5
4,4'-DDD	770,000*	ND(<0.01)	0.077	7.7	2.9	N/A	16	2.9
4,4'-DDE	440,000*	ND(<0.01)	0.0440	4.4	2.1	N/A	16	2.1
4,4'-DDT	243,000*	ND(<0.01)	0.025	2.5	2.1	40	16	2.1
Dibenzo-P-dioxins(PCDD) 2,3,7,8 TCDD	1709800	0.000035	0.0006	0.06	N/A	N/A	N/A	N/A
Dieldrin	10,700*	ND(<0.01)	0.0010	0.1	0.044	4	16	0.044
Endosulfan I	8,168*	0.1	0.009	0.9	N/A	N/A	16	0.9
Endosulfan II	8,031*	0.1	0.009	0.9	N/A	N/A	16	0.9
Endosulfan Sulfate	10,038*	0.1	0.01	1.0	N/A	N/A	16	1.0
Endrin	9,157*	ND(<0.01)	0.001	0.1	N/A	20	8	0.10
Endrin keytone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
gamma - BHC (Lindane)	1,080	ND(<0.05)	0.0006	0.06	5.4	20	8	0.04
gamma - chlordane	140,000	0.1	0.14	14.0	0.54	5	80	0.5
Heptachlor	12,000	ND(<0.01)	0.0010	0.1	0.16	40	8	0.10
Heptachlor epoxide	220	ND(<0.01)	0.0002	0.02	0.077	0.8	8	0.02
Methoxychlor	25,637	35.0	9.0	900	N/A	400	80	***
Mirotane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Parathion	760	1.5	0.012	1.2	N/A	500	8	1.2
PCBs	17,510*	0.1	0.1	10.0	1.0	N/A	360	1.0(Surfac 10(sub-sur
Polychlorinated dibenzo-furans(PCDF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silvex	2,600	0.26	0.007	0.7	N/A	600	330	0.7
2,4,5-T	53	35	0.019	1.9	N/A	200	330	1.9

a. Allowable Soil Concentration Cs = f x Cw x Koc

b. Soil cleanup objective = Cs x Correction Factor (CF)

N/A is not available

* Partition coefficient is calculated by using the following equation:
log Koc = -0.55 log S + 3.64, where S is solubility in water in ppm.
All other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total Pesticides < 10 ppm.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1% (5% for PCBs as per PCB guidance document), and should be adjusted for the actual soil organic Carbon content if it is known.

APPENDIX A Rev. 12/93

TABLE 4

Recommended Soil Cleanup Objectives (mg/kg or ppm) for Heavy Metals

Target Analyte List (TAL) Meta

Contaminants	Protect Water Quality ppm	Eastern USA Background ppm	CRDL mg/kg or ppm	***** Rec.soil Cleanup Objct. (ppm)
Aluminum	N/A	33,000	2.0	SB
Antimony	N/A	N/A	0.6	SB
Arsenic	N/A	3-12 **	0.1	7.5 or SB
Barium	N/A	15-600	2.0	300 or SB
Beryllium	N/A	0-1.75	0.05	0.16(HEAST) or SB
Cadmium	N/A	0.1-1	0.05	1 or SB
Calcium	N/A	130 - 35,000 **	50.0	SB
Chromium	N/A	1.5-40 **	0.1	10 or SB
Cobalt	N/A	2.5-60 **	0.5	30 or SB
Copper	N/A	1-50	0.25	25 or SB
Cyanide	N/A	N/A	0.1	***
Iron	N/A	2,000 - 550,000	1.0	2,000 or SB
Lead	N/A	****	0.03	SB****
Magnesium	N/A	100 - 5,000	50.0	SB
Manganese	N/A	50 - 5,000	0.15	SB
Mercury	N/A	0.001-0.2	0.802	0.1
Nickel	N/A	0.5-25	0.4	13 or SB
Potassium	N/A	8,500 - 43,000 **	50.0	SB
Selenium	N/A	0.1-3.9	0.05	2 or SB
Silver	N/A	N/A	0.1	SB
Sodium	N/A	6,000 - 8,000	50.0	SB
Thallium	N/A	N/A	0.1	SB
Vanadium	N/A	1-300	0.5	150 or SB
Zinc	N/A	9-50	0.2	20 or SB

Note: Some forms of metal salts such as Aluminum Phosphide, Calcium Cyanide, Potassium Cyanide, Copper cyanide, Silver cyanide, Sodium cyanide, Zinc phosphide, Thallium salts, Vanadium pentoxide, and Chromium (VI) compounds are more toxic in nature. Please refer to the USEPA HEASTs database to find cleanup objectives if such metal salts are present in soil.

SB is site background
N/A is not available

* CRDL is contract required detection limit which is approx. 10 times the CRDL for water.

** New York State background

*** Some forms of Cyanide are complex and very stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objective.

**** Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

*****Recommended soil cleanup objectives are average background concentrations as reported in a 1984 survey of reference material by E. Carol McGovern, NYSDEC.

TOTAL ORGANIC CARBON (TOC)

USE AND LIMITATIONS

Total organic carbon is a measure of the total amount of nonvolatile, volatile, partially volatile, and particulate organic compounds in a sample. Total organic carbon is independent of the oxidation state of the organic compounds and is not a measure of the organically bound and inorganic elements that can contribute to the biochemical and chemical oxygen demand tests.

Because inorganic carbon (e.g., carbonates, bicarbonates, free CO_2) will interfere with total organic carbon determinations, samples should be treated to remove inorganic carbon before being analyzed.

FIELD PROCEDURES

Collection

Samples can be collected in glass or plastic containers. A minimum sample size of 25 g is recommended. If unrepresentative material is to be removed from the sample, it should be removed in the field under the supervision of the chief scientist and noted on the field log sheet.

Processing

Samples should be stored frozen and can be held for up to 6 mo under that condition. Excessive temperatures should not be used to thaw samples.

LABORATORY PROCEDURES

Analytical Procedures

- Equipment
  - Induction furnace
    e.g., Leco WR-12, Dohrmann DC-50, Coleman CH analyzer, Perkin Elmer 240 elemental analyzer, Carlo-Erba 1106
  - Analytical balance
    0.1 mg accuracy
  - Desiccator
  - Combustion boats
  - 10 percent hydrochloric acid (HCl)
  - Cupric oxide fines (or equivalent material)
  - Benzoic acid or other carbon source as a standard.

- Equipment preparation
  - Clean combustion boats by placing them in the induction furnace at 950° C. After being cleaned, combustion boats should not be touched with bare hands.
  - Cool boats to room temperature in a desiccator.
  - Weigh each boat to the nearest 0.1 mg.

- Sample preparation
  - Allow frozen samples to warm to room temperature.
  - Homogenize each sample mechanically, incorporating any overlying water.
  - Transfer a representative aliquot (5-10 g) to a clean container.

- Analytical procedures
  - Dry samples to constant weight at 70 ± 2° C. The drying temperature is relatively low to minimize loss of volatile organic compounds.
  - Cool dried samples to room temperature in a desiccator.
  - Grind sample using a mortar and pestle to break up aggregates.
  - Transfer a representative aliquot (0.2-0.5 g) to a clean, preweighed combustion boat.
  - Determine sample weight to the nearest 0.1 mg.
  - Add several drops of HCl to the dried sample to remove carbonates. Wait until the effervescing is completed and add more acid. Continue this process until the incremental addition of acid causes no further effervescence. Do not add too much acid at one time as this may cause loss of sample due to frothing. Exposure of small samples (i.e., 1-10 mg) having less than 50 percent carbonate to an HCl atmosphere for 24-48 h has been shown to be an effective means of removing carbonates (Hedges and Stern 1984). If this method is used for sample sizes greater than 10 mg, its effectiveness should be demonstrated by the user.
  - Dry the HCl-treated sample to constant weight at 70 ± 2° C.
  - Cool to room temperature in a desiccator.
  - Add previously ashed cupric oxide fines or equivalent material (e.g., alumina oxide) to the sample in the combustion boat.
  - Combust the sample in an induction furnace at a minimum temperature of 950 ± 10° C.

- Calculations
  - If an ascarite-filled tube is used to capture CO_2, the carbon content of the sample can be calculated as follows:

$$\text{Percent carbon} = \frac{A(0.2729)(100)}{B}$$

Where:

A = the weight (g) of CO_2 determined by weighing the ascarite tube before and after combustion
B = dry weight (g) of the unacidified sample in the combustion boat
0.2729 = the ratio of the molecular weight of carbon to the molecular weight of carbon dioxide

A silica gel trap should be placed before the ascarite tube to catch any moisture driven off during sample combustion. Additional silica gel should be placed at the exit end of the ascarite tube to trap any water that might be formed by reaction of the trapped CO_2 with the NaOH in the ascarite.

If an elemental analyzer is used, the amount of CO_2 will be measured by a thermal conductivity detector. The instrument should be calibrated daily using an empty boat blank as the zero point and at least two standards. Standards should bracket the expected range of carbon concentrations in the samples.

QA/QC Procedures

It is critical that each sample be thoroughly homogenized in the laboratory before a subsample is taken for analysis. Laboratory homogenization should be conducted even if samples were homogenized in the field.

Dried samples should be cooled in a desiccator and held there until they are weighed. If a desiccator is not used, the sediment will accumulate ambient moisture and the sample weight will be overestimated. A color-indicating desiccant is recommended so that spent desiccant can be detected easily. Also, the seal on the desiccator should be checked periodically and, if necessary, the ground glass rims should be greased or the "O" rings should be replaced.

It is recommended that triplicate analyses be conducted on one of every 20 samples, or on one sample per batch if less than 20 samples are analyzed. A method blank should be analyzed at the same frequency as the triplicate analyses. The analytical balance should be inspected daily and calibrated at least once per week. The carbon analyzer should be calibrated daily with freshly prepared standards. A standard reference material should be analyzed at least once for each major survey.

DATA REPORTING REQUIREMENTS

Total organic carbon should be reported as a percentage of the dry weight of the unacidified sample to the nearest 0.1 unit. The laboratory should report the results of all samples (including QA replicates, method

blanks, and standard reference measurements) and should note any problems that may have influenced sample quality. The laboratory should also provide a summary of the calibration procedure and results (e.g., range covered, regression equation, coefficient of determination).

a. Allowable Soil Concentration Cs = f x Cw x Koc
b. Soil cleanup objective = Cs x Correction Factor (Cf)

N/A is not available
MDL is Method Detection Limit

* Partition coefficient is calculated by using the following equation:
log Koc = -0.55 log S + 3.64, where S is solubility in water in ppm. Other Koc values are experimental values.

** Correction Factor (Cf) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm., Total Semi-VOCs < 500 ppm. and Individual Semi-VOCs < 50 ppm.

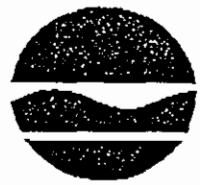
**** Koc is derived from the correlation Koc = 0.63 Kow (Determining Soil Response Action Levels..... EPA/540/2-89/057). Kow is obtained from the USEPA computer database 'HAIN'.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1%, and should be adjusted for the actual soil organic carbon content if it is known.

ATTACHMENT B

GC STANDARD OPERATING PROCEDURE

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010



John P. Cahill
Commissioner

Division of Environmental Remediation
QC Guidelines for GC Field Screening Methods

The Standard Operating Procedure (SOP) for the GC field method must be included in the project work plan and submitted to the Quality Assurance Unit (QAU) for review. The SOP must include:

- A detailed step-by-step procedure for the analysis method.
- A 3-point Initial Calibration.
  Quality Control (QC) criteria: correlation co-efficient ≥ 0.95
- A mid-point calibration every 10 samples or daily, whichever is more frequent.
  QC criteria: Relative Percent Difference (RPD) ≤ 30 percent
- A blank run after calibration standards.
  QC criteria: Peak area for target compounds less than half the area of the reporting detection limit
- Duplicate analysis on 10 percent of the samples.
- Laboratory confirmation, by a NYSDOH ELAP certified laboratory, on 10 percent of the samples.

The resume of the Field Analyst, including relevant experience and education, must also be submitted for review by the QAS.

Contact Christine McGrath (518) 457-9280 with any questions on using GC Field Screening Methods.

STANDARD OPERATING PROCEDURE FOR FIELD GC ANALYSIS OF SOIL SAMPLES

1.0 Summary of Procedure

This Standard Operating Procedure (SOP) is the field screening procedure to be followed for the soil gas and volatile chlorinated solvent survey of the soil samples from the remediation sites to be conducted by Fagan Engineers. The method entails dynamic headspace sampling followed by direct syringe injection high resolution gas chromatographic separation with sequential ECD/PID detection (electron capture /photoionization detectors). The target compounds and those upon which the calibration is based are those listed in EPA Method TO-14. All methodology and procedural steps are aimed at assuring compliance with the New York State Department of Environmental Conservation's requirements under 'Division of Environmental Remediation Quality Control for GC Field Screening Methods'.

2.0 General Outline of the Remainder of the Procedure

3.0 Apparatus & Materials

3.1 GC Unit: HNU Model 311D-GC Portable Gas Chromatograph with Dual Detector Configuration (ECD/11.7eV PID)
3.2 GC Column: 30 meter DB-624 column; 0.53 mm ID; 3.0 um film thickness (J&W Scientific #145-1334)
3.3 Calibration Std.: Scott TO-14 Calibration Mix 1 (Supelco Chromatography Products #5-09981)
3.4 Large Syringe: Hamilton
3.5 Several 5-ml gas-tight syringes
3.6 Tedlar bags: 1-liter
3.7 Carrier Gas: Ultrahigh purity Nitrogen
3.8 Carrier Gas Flow Meter
3.9 Vacuum Pump
3.10 Heated Water Bath (for sampling in <0°C temperatures)

4.0 HNU Model 311D-GC Set-up

4.1 Connect the instrument to line power and turn on.
4.2 At the keypad request, input the proper date and time at the keypad.
4.3 Carrier Gas Supply

The on-board carrier gas cylinder must be filled to 1000 psi (max) with ultrahigh purity nitrogen (or other suitable carrier gas) using the HNU 'Carrier Gas Fill Adapter'. See instrument manual for instructions on this procedure.

4.3.1 Connect carrier gas tubing to the 'Carrier' fitting on top of the GC.
4.3.2 Open carrier gas cylinder 'Main Shut-Off Valve' completely.
4.3.3 Adjust pressure regulator valve to 70 psi.
4.3.4 With the nitrogen gas flow meter attached to the detector vent line, open the 'Column Pressure Adjust' knob on the GC to adjust the column nitrogen flow rate to 20 cc/minute.

4.4 With the RS-232 adapter cord connected from the computer to the proper RS-232 port on the GC, start the Peakworks program by double clicking on the Peakworks icon on the computer screen.
4.5 Under the 'File' Menu, open the job file: TO14.job. This will load the proper method for the chromatographic analysis.

The run conditions for this method can be viewed in the 'Edit' Submenu of the 'Method' Menu. Verify that the parameters are the following:

1.	Initial Oven Temperature:	40°C
2.	Injector/Detector Temperature:	180°C
3.	Analysis Time:	23 minutes
4.	Ramping:	ON
5.	Hold Time 1:	1 minute
6.	Ramp 1:	8°C/minute
7.	Hold Time 2:	3 minutes
8.	Hold Temperature 2:	200°C
9.	Syringe Inject:	ON
10.	Ramp2; Hold Time2, Hold Temp.2:	0

The Detector A & B parameters can be viewed under those selection in the 'Method' Menu. Verify that the parameters for both detectors are:

1.	Noise & Baseline time:	0:01
2.	Noise & Baseline length:	0:03
3.	Detect Method:	Area
4.	Area Reject:	100
5.	Peak Algorithm:	Tangent Skimming
6.	Range:	10
7.	Plot Attenuation:	1
8.	Segment Width:	10
9.	Units:	ppm

5.0 Preparation of Calibration Standards

An initial three point calibration is required prior to the performance of any sample analyses. Instead of purchasing three costly high purity standards, a high level NIST traceable standard can be diluted to provide additional accurate standards for the initial three-point calibration. The primary calibration standard will be 'Scott TO-14 Calibration Mix 1' (Supelco Chromatographic Products; Catalog #5-09981; NIST traceable). This standard contains each of the 39 compounds listed under the EPA TO-14 Method at a level of 1 ppm (in nitrogen). It will be diluted with ultrahigh purity nitrogen to the 250-ppb and 500-ppb level.

5.1 Dilutions & Filling Tedlar bags

The standard dilutions are performed on a volume basis by the following procedure. A cylinder of high purity nitrogen, a vacuum pump, a 500 ml Hamilton syringe with a swagelock fitting, and a Tedlar bag with a swagelock fitting are interconnected with the necessary teflon or metal tubing and shut off valves so that any portion of the system can be evacuated with the vacuum pump or filled with either the nitrogen or high level calibration standard. With the proper placing of shut-off valves any portion of the system should also be able to be shut off from the rest of the system. The only restriction on the tubing lengths is that the tubing between the Hamilton syringe and the Tedlar bag should be as short as possible to minimize errors in dilution of the calibration standard. A 3 mm diameter septum should be placed on each Tedlar bag and secured with double-sided tape in order to sample from the bag once it is filled with a standard.

5.2 1-ppm Calibration Standard

Tedlar bag samples of this standard for syringe injection can be made by:

5.2.1 Evacuating a Tedlar bag
5.2.2 Filling the bag directly with sample from the 'Scott TO-14 Calibration Mix 1'

5.3. 250-ppb Calibration Standard

5.3.1 Evacuate a 1-liter Tedlar bag with the vacuum pump.
5.3.2 Fill the large Hamilton Syringe with 250 ml of the 'Scott TO-14 Calibration Mix 1'.
5.3.3 Inject that 250 ml of 1-ppm standard into the Tedlar bag using the appropriate valves.
5.3.4 Shut off the Tedlar bag valve from the system and evacuate the rest of the system.
5.3.5 Fill the Hamilton syringe with nitrogen and inject it into the Tedlar bag. Follow this with a 250 ml nitrogen injection into the bag so that a total of 1-liter has been added to the bag (including the 250 ml of calibration mix).
5.3.6 This Tedlar bag contains 250 ppb each of the compounds of interest in nitrogen.

5.4 500-ppb Calibration Standard

5.4.1 Evacuate a 1-liter Tedlar bag with the vacuum pump.
5.4.2 Fill the large Hamilton Syringe with 500 ml of the 'Scott TO-14 Calibration Mix 1'.
5.4.3 Inject that 500 ml of 1-ppm standard into the Tedlar bag using the appropriate valves.
5.4.4 Shut off the Tedlar bag valve from the system and evacuate the rest of the system.
5.4.5 Fill the Hamilton syringe with 500 ml nitrogen and inject it into the Tedlar bag so that a total of 1-liter has been added to the bag (including the 500 ml of calibration mix).
5.4.6 This Tedlar bag contains 500 ppb each of the compounds of interest in nitrogen.

6.0 Calibration of the HNU 311D Chromatograph

6.1 Initial Calibration

6.1.1 Check that the proper method (TO14.job) is loaded in Peakworks.
6.1.2 Using a clean gas-tight 5-ml syringe remove 1ml of gas from the 1-ppm calibration standard through the septum on the Tedlar bag.
6.1.3 Select 'Calibration 1 Acquire' from the Run Menu of the Peakworks program.
6.1.4 The run will be initiated with a auditory beep after ~10 seconds and on the beep inject the sample into the injection port.
6.1.5 When the run is complete, based upon the known elution order for the compounds (see EPA Method TO-14), go to the 'Components' Submenu of the 'Methods' Menu and input the name of the compound under the 'Component Name' heading, the retention time in minutes under 'Peak RT', and an appropriate retention time window width (~0.05

minutes to start). Also, check the on/off button for each compound. This information should be input for both detectors. Note that each detector is specific for different compounds and that the number of compounds observed and their areas will vary between the two detectors.

6.1.5.1 Retention Time Window Determination

The retention time window should be as narrow as possible to prevent misidentification of chromatographic peaks. During the course of the initial three-point calibration care should be taken to observe the general window within which most peaks fall. Usually analyst experience can determine a suitable window. A more rigorous method, if necessary, would be to make three injections of a calibration standard over the course of a 72-hour period. For each component the retention time window would be plus or minus 3 times the standard deviation the three absolute retention times. At each mid-point calibration below it should be checked to be sure that each compound has fallen within its proper retention time window. Enlarge the window for any component that falls outside the present window.

6.1.6 Go to the 'Standards' Submenu of the 'Methods' Menu and input the value 1.00 (for 1.00 ppm) in the 'Standard 1' column for each of the compounds that was observed on the respective detectors. The values for the 500 ppb and 250 ppb calibration standards (0.50 and 0.25 ppm) should be input at this time for each of the compounds under the heading 'Standard 2' and 'Standard 3', respectively. Before leaving this menu, select a single reference compound for each detector (benzene for PID detector and carbon tetrachloride for the ECD detector are suitable choices).

6.1.7 Using a clean 5-ml gas-tight syringe remove 1ml of gas from the 500 ppb calibration standard through the septum on the Tedlar bag.

6.1.8 Select 'Calibration 2 Acquire' from the Run Menu of the Peakworks program.

6.1.9 Again, when the beep sounds, inject the sample into the injection port.

6.1.10 Using a clean 5-ml gas-tight syringe remove 1ml of gas from the 250 ppb calibration standard through the septum on the Tedlar bag.

6.1.11 Select 'Calibration 3 Acquire' from the Run Menu of the Peakworks program.

6.1.12 Again, when the beep sounds, inject the sample into the injection port.

6.1.13 When all three calibration standards have been analyzed, the Peakworks software will determine the least squares best fit for the three standards and compute a correlation coefficient for each compound. Verify that each coefficient is >0.95. If any coefficient is <0.95:

6.1.13.1 Look at the plot for that compound to determine visually if any calibration standard appears to be off the best fit line more than the others. If so, reanalyze this calibration standard and verify that all coefficients are now >0.95. If there is still not compliance:

6.1.13.2 Reanalyze all three calibration standards and verify that all coefficients are now >0.95. If there is still not compliance:

6.1.13.3 Prepare fresh calibration standards as described in section 5.0 above and perform the entire initial three point calibration as described in section 6.1. When compliance with the minimum 0.95 correlation coefficient is made, save this multi-point calibration by selecting 'Save Multi-point Calibration Results' under the 'Run' Menu. Additional, save the entire method by selecting 'Save' under the 'Methods' Menu and under the 'File' Menu. The proper retention times and calibration are now input into the method and should only be modified if a change in method is made.

6.1.13.4 The information for the three calibration runs should be plotted out with retention times, area counts, and ppm levels and retained as hard copies for future reference. Any major deviation in subsequent calibrations from these values may indicate deterioration of the standard, loss of sensitivity of one of the detectors, inadvertent

changes in injection technique, and may be the hint for corrective or maintenance action.

6.2 Changes in Calibration Standards

Ideally the samples being analyzed should all fall within the confines of the lowest and highest concentration calibration standards used in the calibration procedure described above. If it is found that the samples contain target compound concentrations that are higher or lower than the calibration standard concentrations, the calibration range should be widened with the use of lower and higher concentration standards. The initial calibration procedure in 6.1 should be followed with a new set of three calibration standards. Any new desirable standards that are lower in concentration than the traceable 1-ppm standard can be diluted from it according to the method in 5.0, provided the minimum correlation coefficients values are met for each compound of interest. If higher concentration standards are necessary, a new traceable standard should be sought.

6.3 Prevention of Syringe Contamination

Syringes should be flushed numerous times with air after each use to prevent cross contamination and carry over problems. This applies to the routine sample analysis as well as during the calibration process. Particular care should be taken in cleaning the syringe after a sample with a high concentrations of any particular component has been injected. A blank should be injected with the syringe as described in 8.0 prior to a sample analysis if there is believed to be the possibility of such contamination. Having several clean syringes on hand in the field is useful.

7.0 **Midpoint calibrations**

In order to monitor the accuracy of the calibration method, a recalibration with the mid-point calibration standard, the 500 ppb standard, should be made no less often than after every 10 samples or on a daily basis, whichever yields the more frequent calibrations. This should be performed using the 'Calibration 2 Acquire' selection from the 'Run' Menu. When the run is completed, there should be a Relative Percent Difference (RPD) of no greater than 30% for the concentration reported for each compound compared to the concentrations from the initial 3-point calibration for this standard. The RPD is defined as:

$$RPD = (R_1 - R_2)/R_1 * 100$$

where:

R_1 = Concentration of the midpoint calibration standard based upon the best fit curve from the initial three-point calibration

R_2 = Concentration of the midpoint calibration from any succeeding analyses

If the RPD for any midpoint calibration is within the 30% criteria, the midpoint calibration should be saved as a single-point calibration and used for the next series of samples until the next midpoint calibration is performed. Save this calibration by selecting 'Save Single-point Calibration Results' under the 'Run' Menu.

If the RPD is greater than this, the following actions should be taken:

7.1 Reanalyze the same calibration standard and determine if an acceptable RPD is obtained. If so, continue to section 8.0.

7.2 If not, the detectors may have become dirty. Clean by the following procedure:

7.3.1 PID lamp - Turn the lamp off and remove the lamp from the housing. After allowing the lamp to cool, clean with the proper solvent (Freon or non-water soluble chlorinated organic solvents) and return to the housing. Turn the lamp on.

7.3.2 ECD detector - Increase the Injector/Detector temperature to 250°C and maintain at this temperature for 1hour. Return to 180°C.

7.3.3 Reanalyze the same calibration standard and determine if an acceptable RPD is obtained. If so, continue to section 8.0.

7.3 If not, make a fresh 500 ppb calibration standard from the 1-ppm calibration standard as described in section 5.4 above. Reanalyze this standard and determine if an acceptable RPD is obtained. If so, continue to section 8.0.

7.4 If not, the initial three point calibration should be performed as described in section 6.1above. Sample analyses can continue after this.

8.0 **Blank Runs**

8.1 After each calibration analysis, a blank shot should be run to verify that the peak areas for the target compounds are less than half the area of the reporting detection limit. This sample should be 1 ml of nitrogen from glass sample vial that has been purged with ultrahigh purity nitrogen for several minutes then tightly sealed. If the area for any compound exceeds this criteria, the following steps should be taken:

8.1.1 Ramp the oven temperature to 200°C and bake out the column for 1 hour.

8.1.2 Return the oven temperature to the normal operating temperature.

8.1.3 Shoot another blank to determine if the criteria is met. If so, continue to 8.4. If not, continue to 8.6.

8.1.4 Reanalyze the mid-point calibration standard.

8.1.5 Reanalyze the blank to verify compliance with this criteria.

8.1.6 If the criteria is still not met, take one of the following corrective measures:

8.1.6.1 The sample volume may be too large and the column is becoming overloaded, so shoot lower smaller amounts of sample until compliance is met over a series of calibration/blank analyses

8.1.6.2 Change the column to one with a thicker phase (higher capacity) and verify compliance.

8.1.6.3 Raise the level of the reporting detection limit to meet the results being obtained.

8.2 Detection limits

The minimum detection limits are determined by the concentration from a calibration standard at which the signal-to-noise ratio is found to be 3. This detection limit may vary with compound and instrument.

9.0 **Sample Collection**

9.1 At each location selected for analysis obtain a representative soil sample using the hand auger or trowel.
9.2 Clean/decontaminate the sample collection tool after each use by cleaning with detergent, rinsing with water or methanol, followed by multiple rinses with distilled water.
9.3 Fill a clean 16-ounce glass laboratory vial one-half full with the sample. The vial should be shaken lightly to insure compactness of the sample so that all samples contain reasonably equivalent volumes.
9.4 Seal the laboratory vial tightly to minimize diffusion.
9.5 The sample should be prepared and analyzed no less than 30 minutes after collection.
9.6 For samples that are to be stored for later shipment (see section 13.0) a field blank sample should be prepared by filling a clean glass sample vial one-half full with distilled water. This sample should be carried through the same sampling, shipment, storage, and handling procedures as the actual sample.

10. Sample Preparation

10.1 If the ambient temperature is below 0°C, place the vial in a water bath at 25°C or in a heated location and allow it to equilibrate for 15 minutes. Otherwise, proceed immediately to 10.2.
10.2 Shake the sample vigorously for 30 seconds.
10.3 Examine the inside of the vial for any soil attached to the underside of the septum in the vial. Tap any soil or solid material off the septum. No soil should come in contact with the syringe during headspace sampling.
10.4 Let the vial sit for 15 seconds as a headspace vapor development period.

11.0 Sample Analyses

11.1 Immediately after the 15 second vapor development period of the sample preparation step, the sample should be analyzed.
11.2 Using the 5-ml gas-tight syringe, take a 1 ml sample from the vial.
11.3 Initiate the sample run with the 'Acquire Run' selection in the 'Run' Menu.
11.4 When the run has ended, select 'Edit Run' from the 'Run' Menu. In the comment box give a description of the sample and any pertinent details for documentation.

12.0 Sample Duplications

Ten percent of all samples analyzed must be done so in duplicate. Every 10^{th} sample should be analyzed twice, the duplication immediately following the initial run for best agreement.

13.0 Outside Laboratory Confirmation of Samples

Ten percent of all samples must be reanalyzed by a NYSDOH ELAP certified laboratory. Beginning with the 5^{th} sample all sample numbers ending in 5, after analysis by the above procedures, should be checked for seal tightness and set aside in a refrigerator at ~0°C to await transport to such a facility. To minimize possible diffusion in or out of the sample vial, shipment should be made as soon as possible after sample taking and analysis by the certified laboratory should be made as soon as possible. See section 9.6 for suggestions on a blank field sample to accompany these retained samples to the confirmation laboratory.

14.0 Analysis Sequence

Unless quality control considerations indicate additional calibrations, blank runs, etc, the following would be the GC runs performed and their order of performance.

14.1 Calibration Standard - 1ppm
14.2 Blank run

14.3 Calibration Standard - 500 ppb
14.4 Blank Run
14.5 Calibration Standard - 250 ppb
14.6 Run Blank
14.7 Sample 1-Sample 10 (Setting aside Sample 5 for NYSDOH ELAP certified laboratory confirmation)
14.8 Duplicate Analysis of Sample 10
14.9 Midpoint Calibration - 500 ppb
14.10 Blank run
14.11 Repeat 14.7-14.10 with the next 10 samples until all samples are analyzed or until quality control dictates additional injections (Every sample number ending in 5 being set aside for outside laboratory confirmation & every sample number ending in 0 being run in duplicate. These numbering choices are arbitrary)

15.0 **Quality Control**

The quality control activities and requirements are interspersed throughout the procedure and corrective & maintenance actions are provided whenever any quality control criteria is not met.

Whenever an analysis indicates that the calibration or instrument functioning is not in compliance with a quality control criteria, then those samples which are suspect due this noncompliance should be reanalyzed.

16.0 **Documentation**

All data including computer files and hard copy chromatograms and concentration tables should be retained.

ATTACHMENT C

CITIZEN PARTICIPATION PLAN

Citizen Participation Plan

for the

American LaFrance NYS DEC Brownfield Project
Chemung Foundry NYS DEC Brownfield Project

(Site Name)

100 E. LaFrance Street and
500-512 Erie Street

(Location)

Prepared by:

City of Elmira, New York

(Municipality)

Date:

August 27, 1998

NOTICE

The mailing list included in Section 9 of this Citizen Participation Plan includes all property owners and occupants in the area shown on the map in Section 8. This list will be used to mail information about these sites and the status of the investigation to residents, elected officials, and other interested parties. Please check to see if your name is on the list.

If your name is not on the list and you would like to be added to it, please call:

Cheryl B. Schneider
Director of Community Development
317 E. Church Street
Elmira, New York 14901

(607) 737-5691

(607) 737-5696 (fax)

TABLE OF CONTENTS

Introduction

What is a Citizen Participation Plan?

A Citizen Participation Plan, or CP Plan, provides interested citizens like you with information on events that will happen during the process of investigating and/or remediating (cleaning up) a brownfield site. The plan is also used by municipal officials to track public involvement activities they conduct.

Who creates the plan?

The CP plan is put together by the municipality conducting a brownfield investigation, in consultation with the New York State Department of Environmental Conservation. At some sites, consultants for the municipality may put together a plan.

What documents are included in this plan?

- Information about the site and site investigations
- Information about the brownfield program
- Information about the document repositories and the documents available there
- A list of who to contact for more information
- A list of people interested or involved with the site ("Mailing List")
- A glossary of terms and acronyms you may encounter while learning about the site
- The Citizen Participation Record.

The plan is periodically updated to include new fact sheets, additions to the mailing list, and any changes in planned citizen involvement activities.

What is a Citizen Participation Record?

The Citizen Participation Record is a series of documents designed to help municipalities ensure they perform the necessary citizen involvement activities. The Record is included in the CP plan to provide citizens with an overview of when public involvement activities will happen during the investigation and possible cleanup of the brownfield site. It also serves as a record of completed citizen participation activities.

NEW YORK STATE
DEPARTMENT OF

ENVIRONMENTAL
CONSERVATION

FACT SHEET

Investigation to Begin at Former American LaFrance Site

September 1998

CITY OF ELMIRA

The New York State Department of Environmental Conservation (DEC) and the City of Elmira, in conjunction with the New York State Department of Health (DOH), want to inform you about an upcoming environmental investigation at the former American LaFrance site. This site is being investigated as part of the State's brownfield program (see sidebar). DEC and the City of Elmira are providing this fact sheet to explain highlights of the planned investigation, why the investigation is happening and how to get more information.

About the Brownfield Program

A brownfield is an abandoned or under-used property where re-development is complicated by real or perceived environmental contamination. The Clean Water/Clean Air Bond Act of 1996 provides $200 million to help municipalities that own brownfields but are not responsible for the contamination to investigate and clean up these sites.

A municipality must apply for money to investigate contamination at a site. If the investigation reveals contamination that requires clean up, the municipality can apply for money to help with the clean up. The State will reimburse the municipality for up to 75% of eligible costs associated with an investigation or clean up.

About the Former American LaFrance Site:

The former American LaFrance brownfield site is located at 100 East LaFrance Street in Elmira (see map). From the early 1900s until 1980, the former American LaFrance Fire Engine Company produced fire engines and other fire fighting products at the site. There were five factory buildings on the site, which included a foundry area, painting areas, paint spray booths and machine shops. The City of Elmira acquired the site in the 1980s through tax foreclosure. In 1984 the city demolished all the site buildings. The site is currently vacant.

In 1983, the NYSDEC supervised a cleanup of an area known to be contaminated with polychlorinated biphenyls (PCBs). In December 1996, the City completed a preliminary environmental investigation of the site. The study identified several areas requiring further investigation, including one area where liquid tar was found on the ground. These areas will be the subject of the current detailed investigation.

The Current Investigation:

The City of Elmira has been awarded a grant from the 1996 Clean Water/Clean Air Bond Act to cover up to 75% of eligible costs of the investigation. To determine the extent of contamination on the site, the City of Elmira will:

- survey the site to look for buried drums and underground storage tanks (The survey will use an instrument called a magnetometer to look for large metal objects under the ground surface);

- collect soil gas samples (soil gas is air trapped between soil particles);
- collect 18 subsurface and 4 surface soil samples from various areas on the site;
- collect 4 subsurface soil samples in the area where the previous PCB cleanup occurred (limited surface soil samples will also be collected if necessary);
- install and sample three groundwater monitoring wells.

Additional soil samples will be taken from off-site locations to compare conditions in the surrounding area (background conditions) with conditions on the site. All samples will be sent to a certified laboratory for testing. The investigation is scheduled to begin this month and should be completed by summer 1999. The investigation will cost an estimated $169,245.

What Happens Next:

After the investigation is complete, the City of Elmira will submit a report on the investigation to NYSDEC. The report may include recommendations for cleanup actions. If cleanup actions are necessary, the NYSDEC will propose a cleanup plan and present it to the public at a public meeting. Additionally, there will be a 45-day public comment period on the plan. The City of Elmira could apply for additional funds from the 1996 Bond Act to help pay for any necessary cleanup.

Community Participation:

The City of Elmira has developed a Citizen Participation Plan for the former American LaFrance brownfield site. This plan describes activities that will occur at different stages of the site investigation and cleanup process, including opportunities for public input into the process. The plan also includes a glossary of terms and other helpful information. We encourage you to review the Citizen Participation Plan and the work plan for the investigation available at the locations listed below. (The Citizen Participation Plan is Attachment C of the work plan.) We encourage anyone with helpful information about the site to notify the City of Elmira personnel listed at the end of this fact sheet.

For More Information:

The work plan for the investigation and the citizen participation plan are available for review at:

Department of Community Development
Elmira City Hall - Armory Annex
317 East Church Street
Elmira, NY 14901
(607) 737-5691
Hours: 8:30- 4:30 Monday -Friday
Contact: Cheryl B. Schneider

NYS Department of Environmental Conservation
Region 8 Office
6274 E Avon-Lima Rd.
Avon, NY 14414
(716) 226-2466
Hours: 8:30- 4:45 Monday-Friday
Contact: Meaghan Boice-Green

If you have any questions or comments, please do not hesitate to contact any of the following people:

City of Elmira:

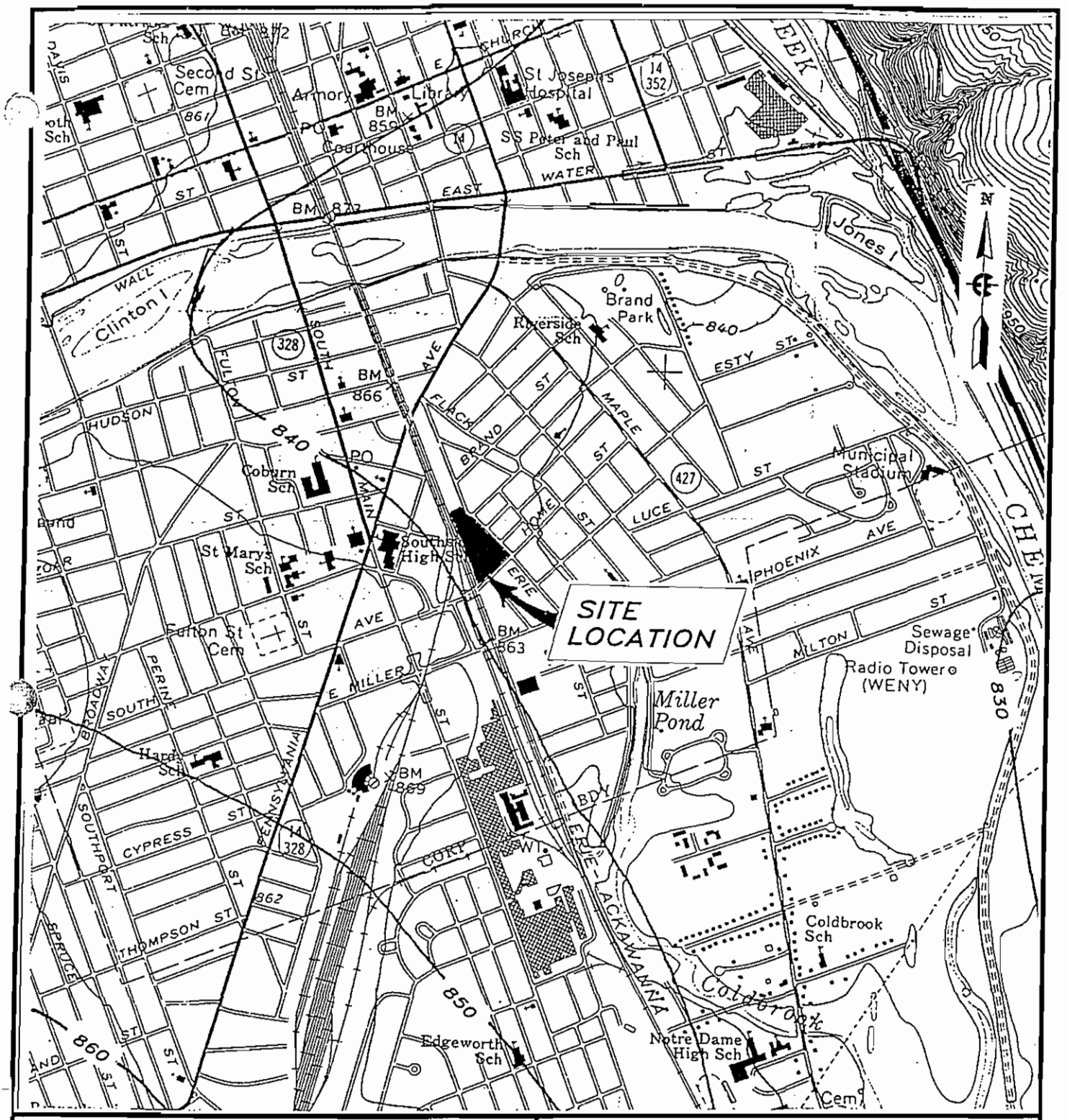
Ronald Hawley, Director of Public Services
or
Cheryl Schneider, Director of Community Development
City Hall- Armory Annex
317 E Church Street
Elmira, NY 14901
(607) 737-5679 (Mr. Hawley)
(607) 737-5691 (Ms. Schneider)

New York State Department of Environmental Conservation:

M.D. Mehta, P.E., Project Manager
6274 E. Avon-Lima Rd.
Avon, NY 14414
(716) 226-2466
or 1-800-342-9296 (leave a message and someone will return your call)

New York State Department of Health:

Daniel Geraghty
2 University Place
Albany, NY 12203
1-800-458-1158 ext. 6309



AMERICAN LA FRANCE BROWNFIELDS SITE

FIGURE 3
POTENTIOMETRIC CONTOUR MAP
NOT TO SCALE

FORMER AMERICAN-LAFRANCE PROPERTY
TAX MAP # 99.12-2-1.1
ELMIRA, NEW YORK
AUGUST, 1998

FAGAN ENGINEERS
Environmental Consultants
JOB # 97.150

NEW YORK STATE
DEPARTMENT OF

ENVIRONMENTAL
CONSERVATION

FACT SHEET

Investigation to Begin at Former Chemung Foundry Site

September 1998

CITY OF ELMIRA

The New York State Department of Environmental Conservation (DEC) and the City of Elmira, in conjunction with the New York State Department of Health (DOH), want to inform you about an upcoming environmental investigation at the former Chemung Foundry site. This site is being investigated as part of the State's brownfield program (see sidebar). DEC and the City of Elmira are providing this fact sheet to explain highlights of the planned investigation, why the investigation is happening and how to get more information.

About the Brownfield Program

A brownfield is an abandoned or under-used property where re-development is complicated by real or perceived environmental contamination. The Clean Water/Clean Air Bond Act of 1996 provides $200 million to help municipalities that own brownfields but are not responsible for the contamination to investigate and clean up these sites.

A municipality must apply for money to investigate contamination at a site. If the investigation reveals contamination that requires clean up, the municipality can apply for money to help with the clean up. The State will reimburse the municipality for up to 75% of eligible costs associated with an investigation or clean up.

About the Former Chemung Foundry:

The former Chemung Foundry is located at 500-512 Erie Street in Elmira (see map). The original 3.86-acre site has been sub-divided for the Elmira Arterial Project. The site was split by a .27 acre parcel taken for the arterial, leaving a .3857 acre parcel, and a 2.2-acre parcel that will be the subject of this investigation. The Chemung Foundry Corporation operated the site from 1925 until 1988. The site owners abandoned the site, leaving behind debris piles, foundry sand and several drums inside the facility. The City of Elmira then acquired the site through tax foreclosure. In 1996, the City demolished buildings on the site. The site is currently vacant.

In 1990 the city conducted a pre-demolition testing program on on-site soils and on seven debris piles within the facility. The testing found that soil just below the ground surface on the site contained elevated levels of lead, cadmium, chromium and phenols. The New York State Department of Transportation performed environmental investigations in 1990 and 1994 on the portion of the site used for the Elmira Arterial Project. Following the investigations, waste foundry sand, dry paint wastes, and drums containing hazardous and non-hazardous materials were removed and properly disposed of off-site.

Based on these investigations and what is known about foundry operations, additional investigation is needed to determine the nature (type) and extent of contamination at the site.

The Current Investigation:

The City of Elmira has been awarded a grant from the 1996 Clean Water/ Clean Air Bond Act to cover 75% of eligible costs of the investigation. To determine the extent of contamination on the site, the City of Elmira will:

- survey the site to look for buried drums and underground storage tanks (The survey will use an instrument called a magnetometer to look for large metal objects under the ground surface);
- collect soil gas samples (soil gas is air trapped between soil particles);
- collect subsurface and surface soil samples from various areas on the site;
- install and sample three groundwater monitoring wells.

Additional soil samples will be taken from off-site locations to compare conditions in the surrounding area (background conditions) with conditions on the site. All samples will be sent to a certified laboratory for testing. The investigation is scheduled to begin this month and should be completed by summer 1999. The investigation will cost an estimated $153,920.

What Happens Next:

After the investigation is complete, the City of Elmira will submit a report on the investigation to NYSDEC. The report may include recommendations for cleanup actions. If cleanup actions are necessary, the NYSDEC will propose a cleanup plan and present it to the public at a public meeting. Additionally, there will be a 45-day public comment period on the plan. The City of Elmira could apply for additional funds from the 1996 Bond Act to help pay for any necessary cleanup.

Community Participation:

The City of Elmira has developed a Citizen Participation Plan for the former Chemung Foundry brownfield site. This plan describes activities that will occur at different stages of the site investigation and cleanup process, including opportunities for public input into the process. The plan also includes a glossary of terms and other helpful information. We encourage you to review the Citizen Participation Plan and the work plan for the investigation available at the locations listed below. (The Citizen Participation Plan is Attachment C of the work plan.) We encourage anyone with helpful information about the site to notify the City of Elmira personnel listed at the end of this fact sheet.

For More Information:

The work plan for the investigation and the citizen participation plan are available for review at:

Department of Community Development
Elmira City Hall - Armory Annex
317 East Church Street
Elmira, NY 14901
(607) 737-5691
Hours: 8:30- 4:30 Monday -Friday
Contact: Cheryl B. Schneider

NYS Department of Environmental Conservation
Region 8 Office
6274 E Avon-Lima Rd.
Avon, NY 14414
(716) 226-2466
Hours: 8:30- 4:45 Monday-Friday
Contact: Meaghan Boice-Green

If you have any questions or comments, please do not hesitate to contact any of the following people:

City of Elmira:

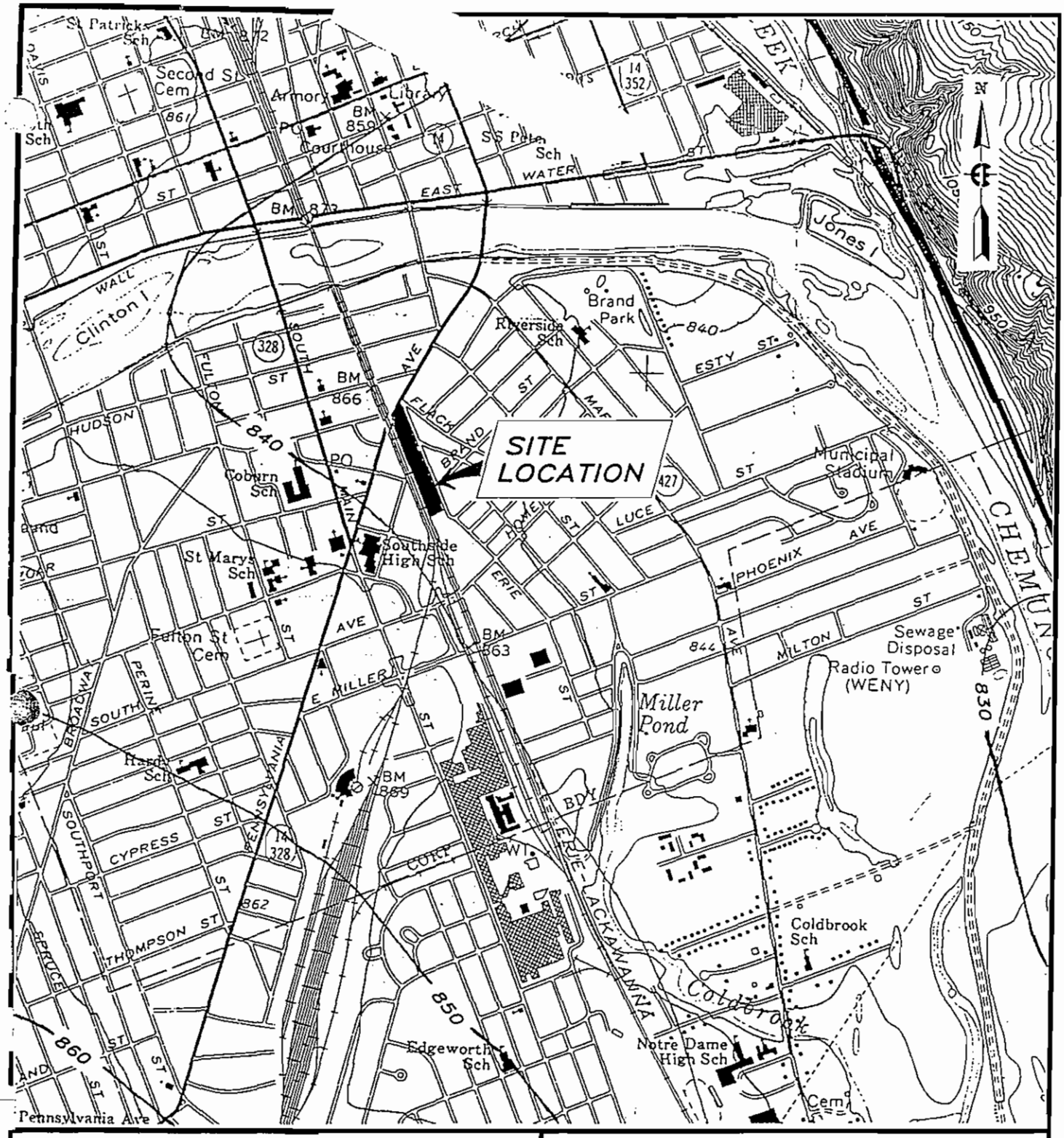
Ronald Hawley, Director of Public Services
or
Cheryl Schneider, Director of Community Development
City Hall- Armory Annex
317 E Church Street
Elmira, NY 14901
(607) 737-5679 (Mr. Hawley)
(607) 737-5691 (Ms. Schneider)

New York State Department of Environmental Conservation:

M.D. Mehta, P.E., Project Manager
6274 E. Avon-Lima Rd.
Avon, NY 14414
(716) 226-2466
or 1-800-342-9296 (leave a message and someone will return your call)

New York State Department of Health:

Daniel Geraghty
2 University Place
Albany, NY 12203
-800-458-1158 ext. 6309



CHEMUNG FOUNDRY BROWNFIELDS SITE

FORMER CHEMUNG FOUNDRY PROPERTY
ELMIRA, NEW YORK
AUGUST, 1998

FIGURE 3
POTENTIOMETRIC CONTOUR MAP

NOT TO SCALE

FAGAN ENGINEERS
Environmental Consultants
JOB # 97.151

Index of Available Documents and Document Repositories

for American LaFrance and Chemung Foundry Brownfields Project

(Site name)

Copies of important documents related to site investigations are available at these locations for the public to review:

Name: City of Elmira, Department of Community Development
Address: City Hall - Armory Annex
317 East Church Street
Elmira, New York 14901

Phone: (607) 737-5691
Contact Person: Cheryl B. Schneider
Hours: 8:30 a.m. - 4:30 p.m. Monday - Friday

NYS Department of Environmental Conservation
Region 8 Offices
6274 East Avon-Lima Road
Avon NY 14414
(716) 226-2466
Hours: Mon-Fri 8:30 - 4:45
Contact: Meaghan Boice-Green, Citizen Participation Specialist

The following documents are available for review at the repositories:

Document	Date
Citizen Participation Plan	September 1998
American LaFrance Work Plan	September 1998
Chemung Foundry Work Plan	September 1998

Additional documents will be placed in the repositories and their availability will be announced to the public as they are developed. The documents are meant to remain at the repository so that anyone who is interested in the site can have access to them.

List of Project Contacts

For American LaFrance and Chemung Foundry NYS DEC

(Site Name) Brownfields Project

Ms. Cheryl B. Schneider
Director of Community Development
City of Elmira
City Hall - Armory Annex
317 E. Church Street
Elmira, New York 14901

(607) 737-5691
(607) 737-5696 (fax)

Mr. Ronald S. Hawley
Director of Public Services
City of Elmira
City Hall- Armory Annex
317 E. Church Street
Elmira, New York 14901

(607) 737-5679
(607) 737-5824 (fax)

New York State Department of Environmental Conservation:

M. D. Mehta, P.E., Project Manager
Meaghan Boice-Green, Citizen Participation Specialist
6274 E Avon-Lima Rd.
Avon, NY 14414-9519
(716) 226-2466
1-800-342-9296

New York State Department of Health:

Daniel Geraghty, Project Manager
2 University Place Room 205
Albany NY 12203
1-800-458-1158, ext. 6309

Nina Knapp, Community Outreach Unit
2 University Place Room 240
Albany NY 12203
1-800-458-1158 ext. 6402

Citizen Participation Record
for the Environmental Restoration Project
At:

American LaFrance - Chemung Foundry

(Site)

100 E. LaFrance Street - 500-512 Erie Street

(Location)

1. Citizen Participation Activities

To enable citizens to participate more fully in brownfield projects, the City of Elmira will offer several opportunities for citizen involvement during the investigation and possible clean up of this site. These activities are described in the table below. The adjacent time line indicates when each activity was completed or is scheduled to be completed at this site.

Citizen Participation Activities			
The Municipality will:	**At this Point in the Investigation:**	**The Activity is Scheduled to be Completed:**	**The Activity was Completed:**
Set up Document Repositories, where citizens can review site-related documents, at a public location near the site.	Before the start of the Investigation.	August 1998	August 1998
Create a list of people ("Contact List") interested in the site, including residents, government representatives, media, and any interested civic, environmental or business groups.	Before the start of the investigation.	August 1998	August 1998
Create a Citizen Participation Plan and place it in the Document Repositories.	Before the start of the investigation.	Sept. 1998	Sept. 1998
Mail a fact sheet to the Contact List describing investigation activities proposed for the site.	At the start of the investigation.	Sept. 1998	
If Cleanup is Required:			
The Municipality will:	**At this point in the Process:**	**The Activity is Scheduled to be Completed:**	**The Activity was Completed:**
Mail a fact sheet to the contact list announcing the availability of a Proposed Remedial Action Plan (PRAP). Place the PRAP at the document repositories.	After the PRAP is written.	Within 30 days of knowledge that the PRAP is available.	
Allow the public 45 days to comment on the proposed clean up plan (PRAP).	After fact sheet announcing the PRAP is mailed.		

Continued. . .

The Municipality will:	At this point in the Process:	The Activity is Scheduled to be Completed:	The Activity was Completed:
Prepare a responsiveness summary addressing public comments about the PRAP. Include the responsiveness summary in the Record of Decision, which outlines the final clean up remedy.	When the Record of Decision is being written.		
Mail fact sheet to the Contact List describing the selected remedy and providing responses to significant comments received during the comment period. Place the Record of Decision, which outlines the final clean up remedy, in the document repository.	When the Record of Decision is signed.		

2. Additional Citizen Participation Activities

A. Technical Assistance for Community Members

equested, the City of Elmira will provide additional technical assistance to community members. This assistance could include: meetings between technical staff and interested community members to discuss technical information about the project, a public availability session in which project staff would answer questions on a one-on one basis, or other appropriate activities. If you wish to request such assistance, please contact Ms. Cheryl B. Schneider, Director Community Development
(Contact person)

B. Other Citizen Participation Activities

The City of Elmira may also conduct more citizen participation activities, such as holding additional public meetings or mailing additional fact sheets to interested citizens. The City of Elmira will base additional activities on the amount of citizen interest shown at the site. Community involvement is important to ensure that The City of Elmira satisfies the needs of those living and working near the site.

If a public meeting is held, any reports or other information that may be discussed at the meeting will be ut in the document repositories at least 15 days before the meeting. Meetings will be announced through mailing to the contact list at least 15 days in advance. Any additional activities that are currently planned for this site are listed in the table below.

Continued. . .

ADDITIONAL CITIZEN PARTICIPATION ACTIVITIES

The Municipality will:	This activity is scheduled to be completed:	This activity was completed:

3. Site Program Profile
Former American LaFrance Site
100 E. LaFrance Street

a. Below is a list of highlights of the investigation that will be performed at the site. Additional activities may be planned based on the results of initial sampling or as new information is received.

Based on previous studies, it is possible that subsurface contamination could have occurred when the facility was operating, due to materials being placed in building floor drains and other associated drains which may have discharged directly into the ground.

To determine the extent of contamination on the site, the City of Elmira will:

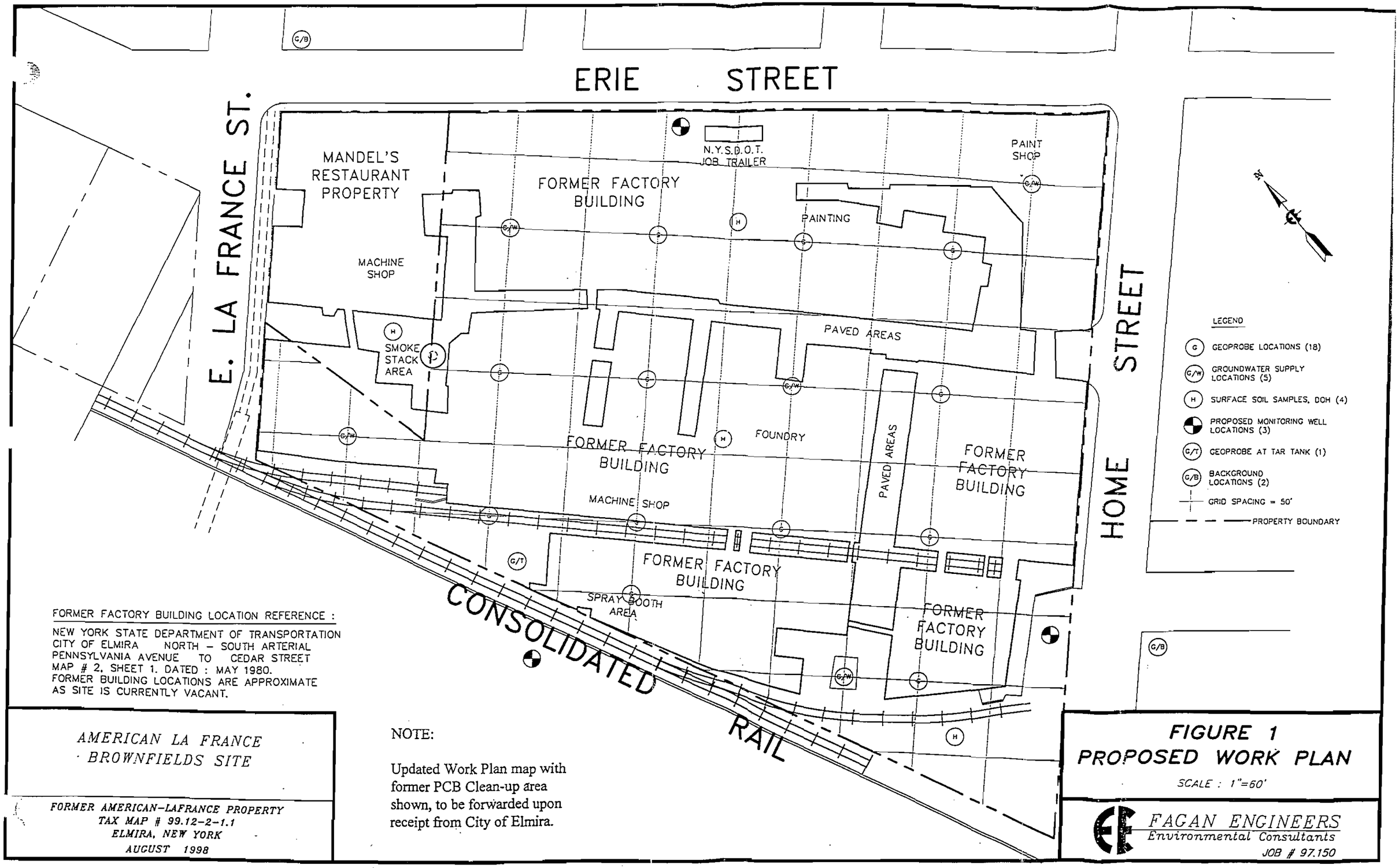
- survey the site to look for buried drums and underground storage tanks (The survey will use an instrument called a magnetometer to look for large metal objects under the ground surface);
- collect soil gas samples (soil gas is air trapped between soil particles);
- collect 18 subsurface and 4 surface soil samples from various areas on the site;
- collect 4 subsurface soil samples in the area where the previous PCB cleanup occurred (limited surface soil samples will also be collected if necessary);
- install and sample three groundwater monitoring wells.

Four additional soil samples will be taken from locations off the site to compare conditions in the surrounding area (background conditions) with conditions on the site. All samples will be sent to a certified laboratory for testing. Based on information from previous studies, the main contaminants that may be found are semi-volatile organic compounds (see glossary) and solvents that contain chlorine. Samples from specific areas of the site will be tested for metals and PCBs. The tar-like substance found at the site may be coming from an underground storage tank. The magnetometer survey should reveal if an underground tank is present.

Attached is a map showing the proposed sampling and well locations.

b. Below is a list of site clean up (remediation) activities that will be performed at the site. (Note: This list will not be included in this citizen participation plan unless a remedial plan is deemed necessary and is finalized):

No remediation activities have been identified to date. Property owners in the target area and others asking to be added to the list in accordance with this plan will be notified of remediation activities when and if such activities are deemed necessary.



FORMER FACTORY BUILDING LOCATION REFERENCE :

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
CITY OF ELMIRA NORTH – SOUTH ARTERIAL
PENNSYLVANIA AVENUE TO CEDAR STREET
MAP # 2, SHEET 1. DATED : MAY 1980.
FORMER BUILDING LOCATIONS ARE APPROXIMATE AS SITE IS CURRENTLY VACANT.

AMERICAN LA FRANCE BROWNFIELDS SITE

FORMER AMERICAN–LAFRANCE PROPERTY
TAX MAP # 99.12–2–1.1
ELMIRA, NEW YORK
AUGUST 1998

NOTE:

Updated Work Plan map with former PCB Clean-up area shown, to be forwarded upon receipt from City of Elmira.

FIGURE 1
PROPOSED WORK PLAN

SCALE : 1"=60'

FAGAN ENGINEERS
Environmental Consultants
JOB # 97.150

3. Site Program Profile
Former Chemung Foundry Site
500-512 Erie Street

a. Below is a list of highlights of the investigation that will be performed at the site. Additional activities may be planned based on the results of initial sampling or as new information is received.

To determine the extent of contamination on the site, the City of Elmira will:

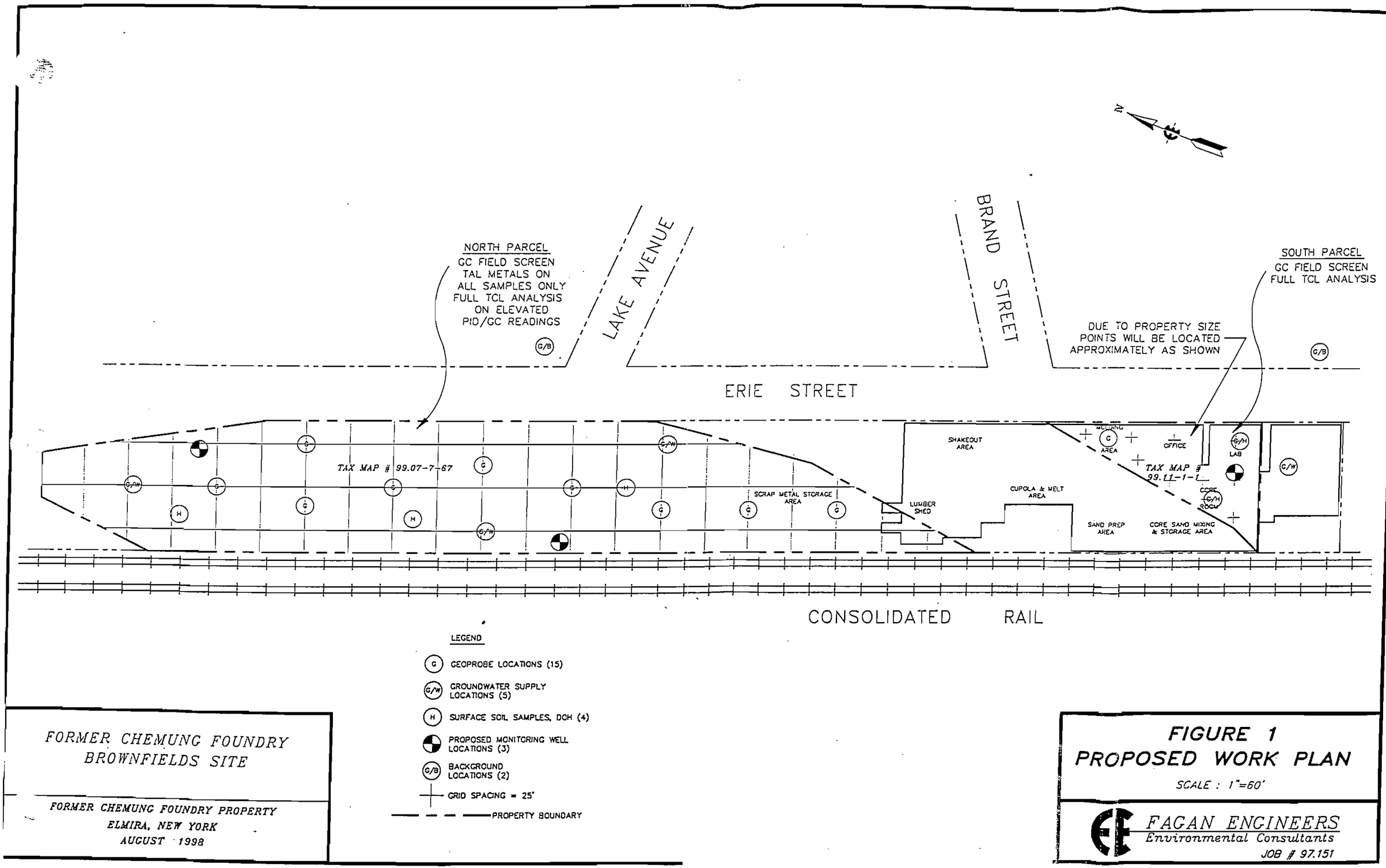
- survey the site to look for buried drums and underground storage tanks (The survey will use an instrument called a magnetometer to look for large metal objects under the ground surface);
- collect soil gas samples (soil gas is air trapped between soil particles);
- collect subsurface and surface soil samples from various areas on the site;
- install and sample three groundwater monitoring wells.

Four additional soil samples will be taken from locations off the site to compare conditions in the surrounding area (background conditions) with conditions on the site. All samples will be sent to a certified laboratory for testing. Based on information from previous studies, the main contaminants that may be found are metals, semi-volatile organic compounds (see glossary) and phenolic compounds. Soil samples from the 2.2-acre parcel north of the foundry building location will be tested only for metals unless field screening tests suggest other chemicals may be present. Samples from the .3857-acre parcel south of the foundry building will be tested for a full range of chemicals.

Attached is a map showing the proposed sampling and well locations.

b. Below is a list of site clean up (remediation) activities that will be performed at the site. (Note: This list will not be included in this citizen participation plan unless a remedial plan is deemed necessary and is finalized):

No remediation activities have been identified to date. Property owners in the target area and others asking to be added to the list in accordance with this plan will be notified of remediation activities when and if such activities are deemed necessary.



LEGEND

- (G) GEOPROBE LOCATIONS (15)
- (G/W) GROUNDWATER SUPPLY LOCATIONS (5)
- (H) SURFACE SOIL SAMPLES, DCH (4)
- PROPOSED MONITORING WELL LOCATIONS (3)
- (G/B) BACKGROUND LOCATIONS (2)
- GRID SPACING = 25'
- PROPERTY BOUNDARY

FORMER CHEMUNG FOUNDRY BROWNFIELDS SITE

FORMER CHEMUNG FOUNDRY PROPERTY
ELMIRA, NEW YORK
AUGUST 1998

FIGURE 1
PROPOSED WORK PLAN

SCALE : 1"=60'

FAGAN ENGINEERS
Environmental Consultants
JOB # 97.151

4. Site Issues and Information Scoping Sheet
American LaFrance &
Chemung Foundry Sites

a. Below is a list of major issues that the City of Elmira is aware are of interest to the community surrounding the site.

The City of Elmira understands that the adjoining community would like to see the former American LaFrance and former Chemung Foundry sites improved, remediated (if necessary) and restored to productive use. No specific use is contemplated at the present time for either site. This investigation work, and subsequent remediation (if necessary) will enable the City to market this property for redevelopment. It is anticipated that the sites will be redeveloped for commercial or light manufacturing purposes.

b. Below is a list of information the City of Elmira needs from the community to assist with the site investigation and determination of an appropriate clean up.

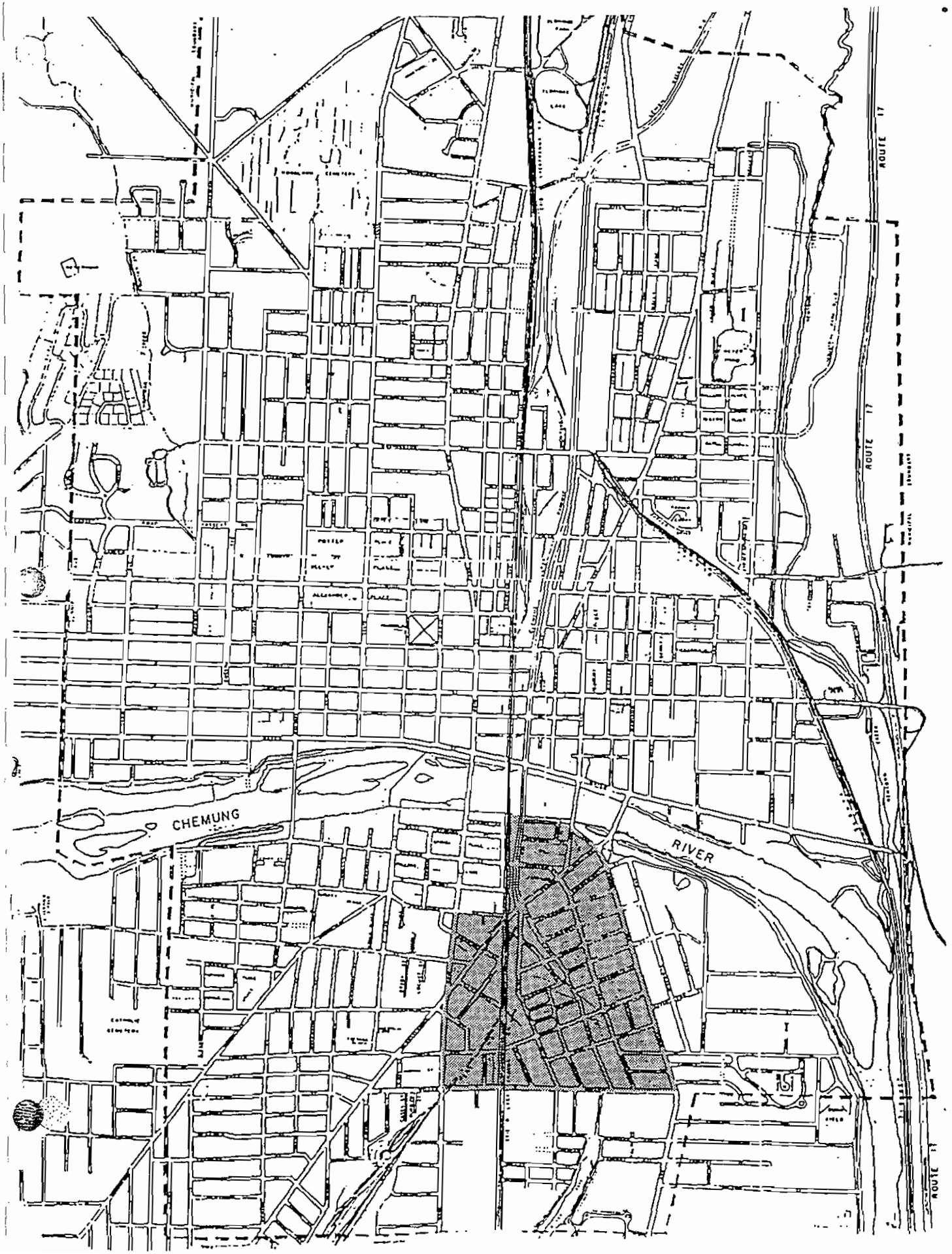
The City and its consultant, Fagan Engineers, have reviewed available records to identify those issues which might be found at each site and developed the Proposed Work Plan accordingly. Citizens are encouraged to review the maps included herewith with respect to the scope of work and advise the City if they are aware of any areas not adequately covered. Information could best be provided by former employees of these foundries or long-term residents of the project area who may have observed operations at the time.

C. Below is a list of information the City of Elmira wants to communicate to the community through the Citizen Participation Program.

The City of Elmira will be mailing an informational letter and fact sheet to all property owners and occupants identified in the mailing list included herewith once the contract with the State of New York Dept. Of Environmental Conservation is signed and work is about to begin. Periodically, throughout the investigation phase, additional mailings will be sent to (i) inform the adjacent community of the progress and (ii) to specifically ask for input to help clarify issues uncovered during the investigation. During the process of investigation, or upon the request of residents, public meetings may be held to further involve the immediate neighborhood or other concerned groups.

RESERVED

MAILING LIST COVERAGE AREA



Media

JOHN HERRICK NEWS DIRECTOR
WENY-TV 36
PO BOX 208
ELMIRA NY 14902

JEFF STONE ASSIGNMENT EDITOR
WETM-TV 18
1 BROADCAST CENTER
ELMIRA NY 14901

NEWS DIRECTOR
WELM-AM/WLVY-FM
1705 LAKE ST
ELMIRA NY 14901

JOHN HERRICK NEWS DIRECTOR
WENY-AM
PO BOX 208
ELMIRA NY 14902

NEWS DIRECTOR
WWLZ-AM/WPGI-FM
2205 COLLEGE AVENUE
ELMIRA NY 14903

DON FORDHAM
2152 W GENESEE ST
AUBURN NY 13021

BOB JAMISON METRO EDITOR
STAR-GAZETTE
201 BALDWIN ST
PO BOX 285
ELMIRA NY 14902-9921

JOHN KELLEHER CITY EDITOR
THE LEADER
34 W PULTENEY ST
CORNING NY 14830

MARTHA HORTON NEWS EDITOR
CHEMUNG VALLEY REPORTER
PO BOX 474
HORSEHEADS NY 14845-0474

Local & Elected Officials

THE HONORABLE AMORY HOUGHTON
UNITED STATES HOUSE OF
REPRESENTATIVES
32 DENISON PKWY W
CORNING NY 14830

THE HONORABLE ALFONSE M D'AMATO
UNITED STATES SENATE
304 FEDERAL BLDG
100 STATE ST
ROCHESTER NY 14614

THE HONORABLE DANIEL P MOYNIHAN
UNITED STATES SENATE
28 CHURCH ST
SUITE 203
BUFFALO NY 14202

THE HONORABLE JAMES G BACALLES
NYS ASSEMBLY
103 GANESVOORT ST
BATH NY 14810

THE HONORABLE JOHN R KUHL JR
NYS SENATE
18 BUELL ST
PO BOX 153
BATH NY 14810

JOHN A FLORY CHAIRPERSON
CHEMUNG COUNTY LEGISLATURE
PO BOX 588
ELMIRA NY 14902-0588

CATHERINE K HUGHES
CHEMUNG COUNTY CLERK
PO BOX 588
ELMIRA NY 14902-0588

LARRY BOWMAN EXECUTIVE DIRECTOR
CHEMUNG CO CHAMBER OF COMMERCE
215 E CHURCH ST
ELMIRA NY 14901

LEE HANLE YOUNG CONSULTANT
CHEMUNG COUNTY EMC
425 PENNSYLVANIA AVE
PO BOX 588
ELMIRA NY 14904-0588

G THOMAS TRANTER JR
CHEMUNG COUNTY EXECUTIVE
PO BOX 588 205 LAKE ST
ELMIRA NY 14902-0588

ROBERT PAGE ACTING DIRECTOR
CHEMUNG COUNTY HEALTH DEPARTMENT
HERITAGE PARK - JOHN ST
PO BOX 588
ELMIRA NY 14901

GEORGE MINER EXECUTIVE DIRECTOR
CHEMUNG COUNTY IDA
PO BOX 251
ELMIRA NY 14902

NDY J OLTHOF
LANNING COMMISSIONER
HEMUNG COUNTY PLANNING BOARD
O BOX 588
ELMIRA NY 14902-0588

ROBERT J FISCHER
628 WHISPERING PINES CIRCLE
ROCHESTER NY 14612

LINDA LISZEWSKI
62 WEST AMY LANE
ROCHESTER NY 14626-3773

THOMAS WALSH
JAECKLE FLEISCHMANN & MUGEL
39 STATE STREET
CHESTER NY 14614-1310

Interested Parties

DIANE HEMINWAY
CITIZENS' ENVIRONMENTAL COALITION
WESTERN NEW YORK OFFICE
339 N MAIN ST STE A
MEDINA NY 14103

FINGER LAKES COMMUNITY COLLEGE
JOHN VAN NIEL
NAT RES CONSERVATION INSTRUCTOR
4355 LAKE SHORE DR
CANANDAIGUA NY 14424-8395

WILLIAM D HESS EXECUTIVE DIRECTOR
SOUTHERN TIER CENTRAL REGIONAL
PLANNING & DEVELOPMENT BOARD
145 VILLAGE SQ
PAINTED POST NY 14870-1320

State Agency Officials

MEAGHAN BOICE-GREEN
NYSDEC
6274 E AVON-LIMA RD
AVON NY 14414

LARRY ENNIST
NYSDEC
50 WOLF RD
ALBANY NY 12233

M D MEHTA PE
NYSDEC
6274 E AVON-LIMA RD
AVON NY 14414

MARY JANE PEACHEY PE
NYSDEC
6274 E AVON-LIMA RD
AVON NY 14414

CAPT WILLIAM V POWELL
NYSDEC
6274 E AVON-LIMA RD
AVON NY 14414

DANIEL GERAGHTY
NYS DEPARTMENT OF HEALTH
2 UNIVERSITY PL
ROOM 205
ALBANY NY 12203

NINA KNAPP
NYS DEPARTMENT OF HEALTH
2 UNIVERSITY PL
ROOM 240
ALBANY NY 12203

Residents

D Benton
210 Mechanic St
Elmira, NY 14904-1829

B Bowes
210 Brand St
Elmira, NY 14904-1810

A L Boynton
212 Brand St
Elmira, NY 14904-1810

Edward Brown
216 La France St
Elmira, NY 14904-1823

M Brown
210 La France St
Elmira, NY 14904-1823

Paul W Burns
220 Brand St
Elmira, NY 14904-1810

Clara M Butler
215 Brand St
Elmira, NY 14904-1809

Gerald Compton
212 La France St
Elmira, NY 14904-1823

Guy Cowan
205 Rathbun St
Elmira, NY 14904-1833

D M V Tire
641 Erie St
Elmira, NY 14904-1840

Henry Decker
208 Rathbun St
Elmira, NY 14904-1834

Leonard Fenton Sr
218 La France St
Elmira, NY 14904-1823

P Francisco
219 Brand St
Elmira, NY 14904-1809

K Hicks
209 Rathbun St
Elmira, NY 14904-1833

Michael House
208 Mechanic St
Elmira, NY 14904-1829

La France Equipt Corp
516 Erie St
Elmira, NY 14904-1813

H E Lauper
102 Boardman St
Elmira, NY 14904-1764

Tina Mattison
207 Home St
Elmira, NY 14904-1819

Donald E Mc Garry
505 Erie St
Elmira, NY 14904-1812

Mr Bs Family Inn
501 Erie St
Elmira, NY 14904-1812

Toni Salter
207 La France St
Elmira, NY 14904-1822

Pauline C Shelley
205 Mechanic St
Elmira, NY 14904-1828

Southside Community Ctr
Boardman
Elmira, NY 14904

Swarthouts Bait Shop
200 Lake Ave
Elmira, NY 14904-1824

F & F REALTY
113 E CHEMUNG PL
ELMIRA NY 14904

PARSONS GAYLE A
158 W THIRD ST
ELMIRA NY 14901

WOUGHTER LARRY J
304 FULTON ST
ELMIRA NY 14904

OLSZOWY ALEXANDER C JR
808 MAPLE AVE
ELMIRA NY 14904

INTERNATIONAL BROTHERHOOD
317 E CHURCH ST
ELMIRA NY 14901

CITY OF ELMIRA
CITY HALL
ELMIRA NY 14901

INTNTL B HOOD OF T
129 E CHEMUNG PL
ELMIRA NY 14904

HOWELL FM & CO
79-95 PENNSYLVANIA AVE
ELMIRA NY 14904

F M HOWELL & COMPANY
79 PENNSYLVANIA AVE
ELMIRA NY 14904

HOWELL FM & CO
79-95 PENNSLYVANIA AVE
ELMIRA NY 14904

HOWELL FM & CO
79-95 PENNSYLVANIA AVE
ELMIRA NY 14904

BARRA NICHOLAS J &
71 PLEASANT ST
CORNING NY 14830

DUMAS CONSTANTINE T
100 PENNSYLVANIA AVE
ELMIRA NY 14904

CANTANDO NICHOLAS F & D L
106 PENNA AVE
ELMIRA NY 14904

F M HOWELL & COMPANY
79 PENNSYLVANIA AVE
ELMIRA NY 14904

SWARTHOUT DUANE S
77 COMFORT RD
PINE CITY NY 14871

F M HOWELL & COMPANY
79 PENNSYLVANIA AVE
ELMIRA NY 14904

LEUPELT GUSTAVE E
215 FAR ROCKWAY RD
PINE CITY NY 14871

ZEIGLER BARBARA D
129 E HUDSON ST
ELMIRA NY 14904

SHOEMAKER JERRY L &
MATKOSKY STEVEN M
902 BROADWAY
ELMIRA NY 14904

GREEN ROBERT T &
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

GREEN ROBERT T &
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

EXCALIBUR RENTALS
1336 MOUNTAIN VIEW CIR
PINE CITY NY 14871

RUPERT DAVID P
115 E HUDSON ST
ELMIRA NY 14904

THEETGE ROY SR & SHIRLEY
111 E HUDSON ST
ELMIRA NY 14904

SECHRIST DARRELL W
109B E HUDSON ST
ELMIRA NY 14904

MASLINSKI LOUISE
107 E HUDSON ST
ELMIRA NY 14904

WATERS MARIAN I ET AL
110 A E CHEMUNG PL
ELMIRA NY 14904

PARSONS GAYLE A
158 W THIRD ST
ELMIRA NY 14901

FLEMING CLARENCE E &
377 BIRD CREEK RD
PINE CITY NY 14871

NY STATE ASSOCIATION FOR
CHEMUNG COUNTY CHAPTER
711 SULLIVAN ST
ELMIRA NY 14901

JOYNER SHEA M
124 E CHEMUNG PL
ELMIRA NY 14904

MCCARTHY L M & M
126 E CHEMUNG PL
ELMIRA NY 14904

ANDRUS SHARON M
% MARGARET F LILLY
128 E CHEMUNG PL
ELMIRA NY 14904

WATTS MARK E
351 MAPLE AVE
ELMIRA NY 14904

WATTS HAROLD & WINIFRED
1561 CEDAR ST
ELMIRA NY 14904

BRANT JAMIE LEE
136 E CHEMUNG PL
ELMIRA NY 14904

OVERACKER BLAINE & SHARON
241 MIDDLE RD
HORSEHEADS NY 14845

OVERACKER BLAINE & SHARON
241 MIDDLE RD
HORSEHEADS NY 14845

LAGERSTEDT KARL
112 E HUDSON ST
ELMIRA NY 14904

LABAUVE MARION M &
114 E HUDSON ST
ELMIRA NY 14904

LIVINGSTON JOHN
620 CAROLINE DR
LINDLEY NY 14858

WARD EARL & NEVA ET AL
% CAMPBELL RICHARD
555 LYON ST
ELMIRA NY 14904

MANNING MICHELE S
188 MAIN ST
WELLSBURG NY 14894

VERUTO RUDY A
BOX 4151
ELMIRA NY 14904

VERUTO GAIL E
PO BOX 4151
ELMIRA NY 14904

VERUTO GAIL E
981 HUDSON ACRES DR
PINE CITY NY 14871

CREATIVE ORTHOTICS &
310 PENNA AVE
ELMIRA NY 14904

CITY OF ELMIRA
317 E CHURCH ST
ELMIRA NY 14901

PYKONEN JOHN
359 PENNA AVE
ELMIRA NY 14904

HARDER ASSOCIATES INC
432 BORNT HILL RD
ENDICOTT NY 13760

SECRETARY OF HOUSING AND
LAFAYETTE COURT
465 MAIN ST STE 500
BUFFALO NY 14203

O'HART SALLY KAY
2229 RIDGE ROAD
LOWMAN NY 14861

TOMPKINS STEPHEN R
100 BOARDMAN ST
ELMIRA NY 14904

HARDER ASSOCIATES INC
300 BORNT HILL RD
ENDICOTT NY 13760

RICHARDSON ROBERT & MAE
%LORRAINE MASON, POA
3285 MUIRFIELD DR
CHAMBERSBURG PA 17201

TAMMARO ALFRED S &
371 PENNA AVE
ELMIRA NY 14904

LEWIS HERMAN & CORALEA
369 PENNA AVE
ELMIRA NY 14904

WILK MARY ANN
367 PENNA AVE
ELMIRA NY 14904

OSGOOD BRYAN H
368 PENNA AVE
ELMIRA NY 14904

OSGOOD BRYAN H
368 PENNA AVE
ELMIRA NY 14904

RICKARD JEROME & LOIS
156 BOARDMAN ST
ELMIRA NY 14904

SECRETARY OF HOUSING AND
LAFAYETTE COURT
465 MAIN ST STE 500
BUFFALO NY 14203

VERUTO GAIL E
981 HUDSON ACRES DR
PINE CITY NY 14871

TAYLOR LARRY & ANDREA
BOX 280
RD 2
ELMIRA NY 14901

MAFFEI FRANK C JR &
419 BROAD ST
WAVERLY NY 14892

MICKNICH MICHAEL & MAVIS
168 BOARDMAN ST
ELMIRA NY 14904

BAILEY THEODORE & MARILYN
914 ORCHARD PARK RD
PINE CITY NY 14871

BAILEY THEODORE O &
59 ORCHARD PARK RD
PINE CITY NY 14871

BAILEY THEODORE &
914 ORCHARD PARK RD
PINE CITY NY 14871

EATON RICHARD E
357 S MAIN ST
ELMIRA NY 14904

SIEDMAN JOHN & JOANN
403 W FIRST ST
ELMIRA NY 14901

GIRAGOSIAN FRANK G &
55 HOFFMAN ST
ELMIRA NY 14905

NICHOLS HELEN M
123 PARTRIDGE ST
ELMIRA NY 14904

MOORE CORNELIUS & THERESA
28 COLONIAL DR
HORSEHEADS NY 14845

SPARLING ROBERT W SR &
MARGARET S GREEN
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

FULLER CHARLES & DONNA
PO BOX 515
PRATTSBURG NY 14873

HOWELL FM & CO
PO BOX 286
ELMIRA NY 14902

F M HOWELL & COMPANY
79 PENNSYLVANIA AVE
ELMIRA NY 14904

F M HOWELL & COMPANY
79 PENNSYLVANIA AVE
ELMIRA NY 14904

CHEMUNG COUNTY IDA
%FM HOWELL & COMPANY
PO BOX 286
ELMIRA NY 14902

F M HOWELL & COMPANY
79 PENNSYLVANIA AVE
ELMIRA NY 14904

SWARTHOUT JAMES A
441 VETERAN HILL RD
HORSEHEADS NY 14845

ELMIRA URBAN RENEWAL
317 E CHURCH ST
ELMIRA NY 14901

AUGUST-AUGUST & LANE OF
%MONRO MUFFLER/BRAKE #33
200 HOLLEDER PKWY
ROCHESTER NY 14615

WILSON GEORGE JR &
514 BUDD ST
ELMIRA NY 14904

LAMBERTI LISA
306 SPAULDING ST
ELMIRA NY 14904

MARTELLI DIANE
%ADULT PROTECTIVE SERVICE
PO BOX 588
ELMIRA NY 14902

BROWN HOWARD K & ALICE L
310 SPAULDING ST
ELMIRA NY 14904

BANKERS TRUST COMPANY OF
101 E MAIN ST STE 400
LOUISVILLE KY 40202

PROKOPEC GARY B
1324 S BROADWAY BOX 137
WELLSBURG NY 14894

BARTON JULIAN & BONNIE
821 SOUTHPORT ST
ELMIRA NY 14904

TRAVERS JOHN A
651 PARK PL
ELMIRA NY 14901

KRAUSS KENT D & ROSALIE D
315 MT ZOAR ST
ELMIRA NY 14904

CAMPBELL NANCY J &
%ARLENE KINTZ
261 LORMORE ST
ELMIRA NY 14904

SWAN MILDRED
259 LORMORE ST
ELMIRA NY 14904

COLE MARSHALL & DONNA
1468 COUNTY LINE RD
KENDALL NY 14476

SWARTHOUT JAMES A
441 VETERAN HILL RD
HORSEHEADS NY 14845

SULLIVAN MICHAEL & MARY
255 LORMORE ST
ELMIRA NY 14904

PIERCE FREDERICK &
412 STACIA DR
ELMIRA NY 14904

FORD DEBORAH & JACQUELINE
251 LORMORE ST
ELMIRA NY 14904

MCCLELLAND GLENN &
117 NOTTINGHAM WAY
ELMIRA HEIGHTS NY 14903

GEROW LAWRENCE JR &
256 LORMORE ST
ELMIRA NY 14904

PRICE HENRY J
453 FAIRWAY AVE
ELMIRA NY 14904

SHOEMAKER BLAKE A &
256 BREED HOLLOW RD
HORSEHEADS NY 14845

DURFEE DONALD & LYNNE
264 LORMORE ST
ELMIRA NY 14904

BAILEY THEODORE & MARILYN
914 ORCHARD PARK RD
PINE CITY NY 14871

LUTHER LANCE & NGUYET
268 LORMORE ST
ELMIRA NY 14904

TAYLOR ALFRED & JEAN
270 LORMORE ST
ELMIRA NY 14904

CONKLIN DAVID F &
%RUTH CONKLIN-LIFE USE
274 LORMORE ST
ELMIRA NY 14904

TADDER WILLIAM &
563 LUCE ST
ELMIRA NY 14904

COMFORT DAVID E &
3156 WATKINS RD
HORSEHEADS NY 14845

DOMBROSKE AUGUST M &
%VIRGINIA CASIL, EXECUTOR
3794 WATKINS RD LOT 41
MILLPORT NY 14864

THORNELEY JOHN & MARTHA
275 CALDWELL AVE
ELMIRA NY 14904

SISKIN MARIAN
271 CALDWELL AVE
ELMIRA NY 14904

STONER PHILIP & PENELOPE
269 CALDWELL AVE
ELMIRA NY 14904

JOLLEY ROBERT & JEAN
RR #1 BOX 2115
GILLETT PA 16925

AFFELDT ALBERT & CYNTHIA
263 CALDWELL AVE
ELMIRA NY 14904

ROBINSON ELWIN B
465 RACE ST
ELMIRA NY 14904

CROWNINGSHIELD CHARLES A
253 CALDWELL AVE
ELMIRA NY 14904

EDMISTER ISAAC &
300 CATHERINE ST
ELMIRA NY 14904

SHERMAN DANIEL J
444 BECKWITH RD
PINE CITY NY 14871

GRATKOWSKI ALBIN &
97 CHEMUNG ST
SAYRE PA 18840

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

BEAUGEZ KEVIN J
%GARY FREDERICKS
505 S MAIN ST
HORSEHEADS NY 14845

LANNING RAYMOND S &
6261 CAYUTAVILLE RD
ALPINE NY 14805

TH&M PROPERTY DEVELOPMENT
9890 82ND ST N
LARGO FL 34647

LAUX MARK J
603 W FIRST ST
ELMIRA NY 14901

WILSON ELIZABETH J
959 WALNUT ST
ELMIRA N Y 14901

PARSONS JOSEPH & GAYLE
158 W THIRD ST
ELMIRA N Y 14901

REROB LLC
6567 KINNE RD
DEWITT NY 13214

WATTS HAROLD & WINIFRED
1561 CEDAR ST
ELMIRA NY 14904

DEMUYNCK GARY M
319 CATHERINE ST
ELMIRA NY 14904

SHARK CORPORATION
PO BOX 2064
220 EAST 14TH ST
ELMIRA HGTS NY 14903

BENTLEY HARRY E
85 DURLAND AVE
ELMIRA NY 14905

SHERMAN LAUREL SLOAN-
1523 W WATER ST
ELMIRA N Y 14905

SAPP WILLIE & OLINDA
PO BOX 4035
ELMIRA NY 14904

HENDERSON RUSS B &
94 PEACEFIELD RD
PINE CITY NY 14871

MCLAUGHLIN SHIRLEY I
305 CATHERINE ST
ELMIRA NY 14904

HOLLY ALBERT & MAUREEN
LANGDON PLAZA #205
ELMIRA NY 14901

SHAW WILLIAM E & M L
301 CATHERINE ST
ELMIRA N Y 14904

BELLOMA MICHAEL A
207 SPAULDING ST

NICHOLS DAVID & KATHERINE
209 SPAULDING ST
ELMIRA NY 14904

VERUTO REALTY INC
128 E HUDSON ST
ELMIRA NY 14904

SAVEY ELLA
300 CATHERINE ST
ELMIRA N Y 14904

WILLIAMS HEZEKIAH &
302 CATHERINE ST
ELMIRA N Y 14904

JONES EVELYN
304 CATHERINE ST
ELMIRA NY 14904

COUNTY OF CHEMUNG
%CHEMUNG COUNTY TREASURER
320 E MARKET ST
ELMIRA NY 14901

FORGENSI ALBERT & YOLANDA
% CHARLES & CAROL LEWIS
308 CATHERINE ST
ELMIRA NY 14904

DONAHUE MARY F
310 CATHERINE ST - APT B
ELMIRA N Y 14904

COLLINS RITA M
PO BOX 76
CORNING NY 14830

EAMES MICHAEL SR & GERRI
314 CATHERINE ST
ELMIRA NY 14904

WATTS HAROLD & WINIFRED
1561 CEDAR ST
ELMIRA NY 14904

KEEBLER LEO C
RD 1 PINE ACRES RD
PINE CITY NY 14871

BADIA DAN & SHIRLEY
DBA D&S REALTY
4 YORK COURT
NORTHPORT NY 11768

MARINE MIDLAND BANK
2929 WALDEN AVE
DEPEW NY 14043

ROBINSON ELWIN B
465 RACE ST
ELMIRA N Y 14904

BRADY PATRICK J & STEPHEN
210 FULTON ST
ELMIRA NY 14904

SMITH DONALD & ELIZABETH
46 WOODLAND WAY
HORSEHEADS NY 14845

MILLS JOHN G
BOX 2847
1720 SOUTH EADS ST
ARLINGTON VA 22202

SKINNER JEFFREY & MARYANN
4585 E OVERLOOK DR
WILLIAMSVILLE NY 14221

WOODWARD WAYNE R
169 BLAKESLEE HILL RD
NEWFIELD NY 14867

THRASHER GARY P &
9890 82ND ST N
LARGO, FL 34647

VERUTO GAIL E
PO BOX 4151
ELMIRA NY 14904

AHO DONALD
1015 PINEWOOD DR
PINE CITY NY 14871

MCINNES TERRY &
169 BLAKESLEE HILL RD
NEWFIELD NY 14867

WOODWARD WAYNE R
169 BLAKESLEE HILL RD
NEWFIELD NY 14867

HAGER ALLAN E SR & A
304 LORMORE ST
ELMIRA N Y 14904

DESANTIS JOSEPH
%ROBERT MORGAN SR
MBE LANGDON PLAZA # 323
ELMIRA NY 14901

751 HOLDING CORP
158 W THIRD ST
ELMIRA NY 14901

CAPUS P DAVID
410 FOSTER AVE
ELMIRA N Y 14905

PETERS CHARLES A & MARY M
RD 1 RT 352 BOX 386
CORNING NY 14830

CHEMUNG HOUSING ASSOCIATE
%GARY FREDERICKS-MGR
505 S MAIN ST
HORSEHEADS, NY 14845

BENNETT ROBERT C
103 DURLAND AVE
ELMIRA NY 14905

BRODERICK JAMES E
404 MAPLE AVE
ELMIRA N Y 14904

HICKEY THEO & DORCELIA
408 MAPLE AVE
ELMIRA N Y 14904

WATTS HAROLD K & WINIFRED
833 MAPLE AVE
ELMIRA NY 14904

CARTWRIGHT CHRISTOPHER &
46 PINE HILLS DR
PINE CITY NY 14871

LAMBERT BERNARD & J
311 CALDWELL AVE
ELMIRA N Y 14904

DURFEE GARY R
309 CALDWELL AVE
ELMIRA N Y 14904

HOLDEN MARGARET A
KNEALE RD
PINE CITY NY 14871

OSBORN GEORGE & CLARA
305 CALDWELL AVE
ELMIRA N Y 14904

GOLDSMITH CHARLES ROBERT
303 CALDWELL AVE
ELMIRA N Y 14904

BEAUGEZ KEVIN J
23 E HARRISON AVE
BABYLON NY 11702

CLARK FOSTER & PEARL
%STEPHEN CLARK, EXECUTOR
PO BOX 1094
ELMIRA N Y 14902

SPARLING ROBERT W SR
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

WANDELL PAUL S &
221 BRAND ST
ELMIRA NY 14904

ROWE THOMAS W & LYNETTE J
202 LAKE AVE
ELMIRA NY 14904

PECKHAM ERVIN O
602 1/2 BROADWAY
ELMIRA NY 14904

VERUTO GAIL E
128 E HUDSON ST
ELMIRA NY 14904

ELMIRA SAVINGS BANK FSB
333 E WATER ST
ELMIRA N Y 14901

WHITE ELEANOR M
254 CALDWELL AVE
ELMIRA N Y 14904

WHITE ELEANOR M
256 CALDWELL AVE
ELMIRA N Y 14904

KOMER WALTER & DOROTHY
258 CALDWELL AVE
ELMIRA N Y 14904

SECRETARY OF HOUSING AND
465 MAIN ST
BUFFALO NY 14203

HOLLOWAY ELIZABETH
514 W WATER ST
ELMIRA NY 14905

SMITH SAMUEL & ROSANNA
264 CALDWELL AVE
ELMIRA N Y 14904

ROCCHI ANTHONY F & A
266 CALDWELL AVE
ELMIRA N Y 14904

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

MCINNES TERRY M
%CRAIG BARAVALLE
PO BOX 430
BIG FLATS NY 14814

HEYWARD JULIUS ETAL
%ROSENA G HEYWARD
460 SPAULDING ST
ELMIRA N Y 14904

BECRAFT SCOTT & RECECCA
206 GROVE ST
ELMIRA N Y 14905

BECRAFT SCOTT & REBECCA
206 GROVE ST
ELMIRA N Y 14905

EMANUEL GEORGE & HELEN
265 BRAND ST
ELMIRA N Y 14904

FROST KENNETH & CONNIE
BOX 36
FREEVILLE NY 13068

JOHANNEMAN GUSTAVE &
261 BRAND ST
ELMIRA N Y 14904

GREEN ROBERT T
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

TURNER JACK & MARLEE
577 CHAMBERS RD
HORSEHEADS NY 14845

SPALLONE MARJORIE C
255 BRAND ST
ELMIRA N Y 14904

BEILING STEVEN R
253 BRAND ST
ELMIRA NY 14904

GAGLIARDI PAUL
457 FALCK ST
ELMIRA N Y 14904

BOWERS DONALD J
514 S WILLIAM ST
ELMIRA, NY 14904

STRONG DAVE
254 BRAND ST
ELMIRA N Y 14904

RUMMINGS ROBERT & MARY
256 BRAND ST
ELMIRA NY 14904

CORNISH BLANCHE C
258 BRAND ST
ELMIRA N Y 14904

TRAVERS JOHN A
PO BOX 1242
ELMIRA N Y 14902

BECKER MARK
264 BRAND ST
ELMIRA N Y 14904

TAYLOR HARVEY B
504 SPAULDING ST
ELMIRA N Y 14904

HERBERT EILEEN M &
337 ROE AVE
ELMIRA NY 14901

GRISWOLD LUCINDA
512 SPAULDING ST
ELMIRA N Y 14904

WALKER LEONARD L
516 SPAULDING ST
ELMIRA NY 14904

JERNBERG MICHAEL A &
257 HORNER ST
ELMIRA NY 14904

BELLINGER JOSEPH
55 HICKORY LANE
PINE CITY NY 14871

WILLIAMS INELL T
253 HORNER ST
ELMIRA N Y 14904

ELMIRA GLOVE HOUSE INC
251 HORNER ST
ELMIRA NY 14904

CITY OF ELMIRA
CITY HALL
ELMIRA N Y 14901

KRINER GERALD A & JUDITH
723 SOUTHPORT ST
ELMIRA NY 14904

APPIER JAMES R
87 HILLVIEW DR
BIG FLATS NY 14814

HUGHEY MARY
306 CALDWELL AVE
ELMIRA NY 14904

PICARAZZI ROCCO J &
1265 MAPLE AVE
ELMIRA NY 14904

OAKLEY JEANNETTE A
312 CALDWELL AVE
ELMIRA NY 14904

HARDING DONALD T &
%AL WATERS
220 COOPER HILL RD
VAN ETTEN NY 14889

HARPER STEVEN D
316 CALDWELL AVE
ELMIRA N Y 14904

MURPHY TODD & CLIFFORD
467 MILTON ST
ELMIRA N Y 14904

APPIER JAMES R
87 HILLVIEW DR
BIG FLATS NY 14814

SCHILL KENNETH & DORIA
458 MAPLE AVE
ELMIRA N Y 14904

STATLER HORACE & DELMIRA
460 MAPLE AVE
ELMIRA, NY 14904

ROBINSON LINDA A
504 MAPLE AVE
ELMIRA NY 14904

O'BRIEN B ALICE
460 E MARKET ST
ELMIRA NY 14901

PIPER BEA MARY
514 MAPLE AVE
ELMIRA N Y 14904

TOWNSEND DAVID C
315 HORNER ST
ELMIRA NY 14904

NEILEY RUSSELL & PAULINE
318 HORNER ST
ELMIRA N Y 14904

NEELEY RUSSELL & PAULINE
318 HORNER ST
ELMIRA N Y 14904

GUBLO FRANK & LORNA TRUST
%FRANCIS WOODARD
1263 SHANNON AVE
ELMIRA NY 14904

GUBLO FRANK & LORNA TRUST
%MARCIA DICKINSON
307 HORNER ST
ELMIRA NY 14904

GUBLO FRANK & LORNA TRUST
%FRANCIS WOODARD
1263 SHANNON AVE
ELMIRA NY 14904

KOHOUT PATRICIA A
600 STACIA DR
ELMIRA N Y 14904

NICHOLS LINDA J &
PO BOX 2261
ELMIRA HGTS NY 14903

KEEBLER LEO C
RD 1 PINE ACRES RD
PINE CITY NY 14871

MORGAN ROBERT D SR &
SUITE 323
MBE LANGDON PLAZA
ELMIRA N Y 14901

NICHOLS LINDA J &
PO BOX 2261
ELMIRA HGTS NY 14903

MORGAN ROBERT D SR &
SUITE 323
MBE LANGDON PLAZA
ELMIRA NY 14901

THOMAS JOHNNIE C
567 MAPLE AVE
ELMIRA N Y 14904

ROWE WILLIE C
308 BRAND ST
ELMIRA NY 14904

KASPER ELDON C
826 LARCHMONT RD
ELMIRA N Y 14905

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

MCKAMEY ELIZABETH J
31 SITZER RD
PINE CITY NY 14871

JESMORE ROBERT
325 HIGHLAND AVE
ELMIRA NY 14905

GEORGE CHARLES & ROBERT
%LOTTIE BANK
311 BRAND ST
ELMIRA NY 14904

WILKENS JAYNE L
309 A BRAND ST
ELMIRA N Y 14904

THRASHER GARY P
9890 82ND ST N
LARGO, FL 34647

KARPINSKI JOSEPH K
305 BRAND ST
ELMIRA NY 14904

KEEBLER LEO C
RD 1 PINE ACRES RD
PINE CITY NY 14871

ROY CLIFFORD & MELVA
459 SPAULDING ST
ELMIRA NY 14904

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

VAN DEBOGART DONNA C
528 BAYLOR RD
ELMIRA NY 14904

BORTON CAROL A DAVIS
252 HORNER ST
ELMIRA N Y 14904

ALDRICH HARRY B
%THOMAS & SHIRLEY WHITE
254 HORNER ST
ELMIRA N Y 14904

PRUNIER PAUL R & EILEEN A
711 SPAULDING ST
ELMIRA NY 14904

HOLLENBECK DAVID L SR &
258 HORNER ST
ELMIRA, NY 14904

DONALDSON DAVID &
260 HORNER ST
ELMIRA, NY 14904

DIVERIS KOSMAS & BETTY
465 MAPLE AVE
ELMIRA N Y 14904

DIVERIS KOSMAS & BETTY
465 MAPLE AVE
ELMIRA N Y 14904

DOANE ARTHUR N
3349 LOWER MAPLE AVE
ELMIRA N Y 14904

KEMMER RAYMOND E SR &
554 SPAULDING ST
ELMIRA NY 14904

HOLLENBECK DAVID L SR &
258 HORNER ST
ELMIRA NY 14904

TAYLOR HARVEY & D
504 SPAULDING ST
ELMIRA N Y 14904

TERWILLIGER MERRILL R
% FRANCES M TERWILLIGER
200 SEGAR RD
HORSEHEADS NY 14845

JOHNSON JOSEPHINE S
257 MAGNOLIA ST
ELMIRA N Y 14904

THRASHER GARY P & BONNIE
D/B/A TH & M PROPERTY DEV
9890 82ND ST N
LARGO, FL 34647

WILLIAMS ROBERT & SHARON
302 BATY ST
ELMIRA N Y 14904

SMITH RAYMOND E
304 HORNER ST
ELMIRA N Y 14904

RICHARDS KAREN S &
308 HORNER ST
ELMIRA NY 14904

PALMER ROBERT C & ELLA M
310 HORNER ST
ELMIRA N Y 14904

MARKS EDWARD J III &
1293 HOFFMAN HOLLOW RD
LOWMAN NY 14861

NEILEY RUSSELL & PAULINE
318 HORNER ST
ELMIRA N Y 14904

NEILEY PAULINE S
318 HORNER ST
ELMIRA N Y 14904

HARPER FRANCIS W &
322 HORNER ST
ELMIRA N Y 14904

EDMISTER JOHN G & BRENDA
552 MAPLE AVE
ELMIRA N Y 14904

DRAKE WINFIELD S III &
554 MAPLE AVE
ELMIRA NY 14904

DAVIS ROBERT & ANN
556 MAPLE AVE
ELMIRA N Y 14904

BATROUNEY SOPHIA J
558 MAPLE AVE
ELMIRA N Y 14904

MILLER PAUL & VELMA
313 MAGNOLIA ST
ELMIRA NY 14904

HURLEY FRANCIS & SHIRLEY
311 MAGNOLIA ST
ELMIRA NY 14904

AVERY STEVEN M
309 MAGNOLIA ST
ELMIRA NY 14904

BAILEY PAUL SR & MACHELL
307 MAGNOLIA ST
ELMIRA N Y 14904

BRIDGES NOLA
305 MAGNOLIA ST
ELMIRA NY 14904

RIVERSIDE UNITED
559 SPAULDING ST
ELMIRA N Y 14904

KEETCH JAMES A &
1627 MT ZOAR HILL RD
PINE CITY NY 14871

WEBSTER LEWIS & PHYLLIS
306 MAGNOLIA ST
ELMIRA N Y 14904

PATTERSON DOTTY JEAN &
308 MAGNOLIA ST
ELMIRA NY 14904

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

VAN ATTA DALE & ROSE
312 MAGNOLIA ST
ELMIRA N Y 14904

FRAWLEY ROBERT & MARY
711 W SECOND ST
ELMIRA NY 14905

HELM PATRICIA A
316 MAGNOLIA ST
ELMIRA NY 14904

GENERAS ALICE
318 MAGNOLIA ST
ELMIRA N Y 14904

CARLSON ALEDA L
560 MAPLE AVE
ELMIRA N Y 14904

WHEELER SHARON W
562 MAPLE AVE
ELMIRA N Y 14904

KINSMAN AGNES D
%KAREN KINSMAN
64 MARSHALLS CORNER
WOODSVILLE ROAD
HOPEWELL NJ 08525

MCLAUGHLIN WILLIAM E &
659 COLLEGE AVE
ELMIRA NY 14901

HESS GERALD J & GINA M
584 MAPLE AVE
ELMIRA N Y 14904

MANEY VINCENT & JOAN
313 HOME ST
ELMIRA N Y 14904

URKEWICH JAMES S
311 HOME ST
ELMIRA N Y 14904

OSTERHOUDT JAMES & LUCILL
% JOSEPH & JOAN LEVESQUE
309 HOME ST
ELMIRA NY 14904

KIRTON ROGER W
307 HOME ST
ELMIRA NY 14904

REYES CARLOS F DELOS &
305 HOME ST
ELMIRA N Y 14904

CURTIN BRENDAN & VIRGINIA
603 SPAULDING ST
ELMIRA NY 14904

MALONE THOMAS J & MARY A
607 SPAULDING ST
ELMIRA N Y 14904

SCOTT JAMES III & SANDRA
609 SPAULDING ST
ELMIRA N Y 14904

FRITZ JOHN A
611 SPAULDING ST
ELMIRA N Y 14904

SCHEUERMAN BONNIE L
613 SPAULDING ST
ELMIRA N Y 14904

WINTERMUTE PAUL H &
303 HOME ST
ELMIRA NY 14904

WEMPLE EDGAR

REYNOLDS HUGH
135 BROWN RD
VESTAL NY 13850

COLE ELMER E & ESTHER B
159 BOARDMAN ST
ELMIRA NY 14904

TOWNSAND LINDA J
RD#1 BOX 206
WELLSBURG NY 14894

751 HOLDING CORP
158 W THIRD ST
ELMIRA NY 14901

BENTLEY HARRY E & NOEMI V
85 DURLAND AVE
ELMIRA NY 14905

STASCH JUDITH W
374 PENNSYLVANIA AVE
ELMIRA NY 14904

PRICE SHERRY & HENRY
448 FAIRWAY AVE
ELMIRA NY 14904

TR EMMANUEL EPIS CH
380 PENNA AVE
ELMIRA NY 14904

EMANUEL EPISCOPAL CHURCH
380 PENNA AVE
ELMIRA NY 14904

LUTHER MAI
2403 ROUTE 352
ELMIRA NY 14903

CALLAS JAMES P
379 A S MAIN ST
ELMIRA NY 14904

COUNTY OF CHEMUNG
%CHEMUNG COUNTY TREASURER
320 E MARKET ST
ELMIRA NY 14901

WALES G DONALD & J
BOX 43 RD 1
MILLERTON PA 16936

BRADLEY ARTHUR L &
375 PENNA AVE
ELMIRA NY 14904

VAN GAASBECK JON D
515 W WATER ST
ELMIRA NY 14905

PARKER ERNEST E &
383 PENNA AVE
ELMIRA NY 14904

MALONEY JAMES
1080 WASHINGTON ST
SPENCERPORT NY 14559

HALLAHAN MARK
403 PENNSYLVANIA AVE
ELMIRA NY 14904

CARROLL WILLIAM P &
773 MT ZOAR ST
ELMIRA NY 14904

FADDOUL CHAFIC E & GLADYS
407 B PENNA AVE
ELMIRA NY 14904

CLARK ROBERT W SR
411 PENNA AVE
ELMIRA NY 14904

MCCARTHY MARGARET M
413 PENNA AVE
ELMIRA NY 14904

MCCARTHY MARGARET M
413 PENNA AVE
ELMIRA NY 14904

CITY OF ELMIRA
CITY HALL
ELMIRA NY 14901

POWELL STREET HOUSING
215 E CHURCH ST
ELMIRA NY 14901

CITY OF ELMIRA
CITY HALL
ELMIRA NY 14901

COLE & SON INC
PO BOX 887
ELMIRA NY 14902.

SANDERS RICHARD
403 S MAIN ST
ELMIRA NY 14904

SKILLMAN GEORGE JR
426 HERRICK ST
ELMIRA NY 14904

STANTON MARK A &
402 PENNA AVE
ELMIRA NY 14904

MARINE MIDLAND BANK NA
FACILITIES MGMT - 10TH FL
ONE MARINE MIDLAND CENTER
BUFFALO NY 14203

RICE LEONARD J & HELEN
% CASSETTA ALBERT P
1307 MAPLE AVE
ELMIRA NY 14904

RICE LEONARD J & HELEN
% CASSETTA ALBERT P
1307 MAPLE AVE
ELMIRA NY 14904

MUSKI DIMITRY
RR3 BOX 221
WATERCURE HILL RD
ELMIRA NY 14901

DERITO NICHOLAS
438 PENNA AVE
ELMIRA NY 14904

WHEELER A JR & D
% CASSETTA ALBERT
1307 MAPLE AVE
ELMIRA NY 14904

BACON JOHN C
204 FRANKLIN ST
ELMIRA NY 14904

MELNYK ROBERT C
104 COLLEGE AVE
ELMIRA NY 14901

SEYMOUR RONALD & BJ
208 FRANKLIN ST
ELMIRA NY 14904

ST ATHANASIOS GREEK
210 FRANKLIN ST
ELMIRA NY 14904

MCCARTHY ROSE E
212 FRANKLIN ST
ELMIRA NY 14904

SECRETARY OF HOUSING AND
LAFAYETTE COURT
465 MAIN ST
BUFFALO NY 14203

ROSENQUEST CHARLES W JR &
216 FRANKLIN ST
ELMIRA NY 14904

ELMIRA GLOVE HOUSE INC
510 W CHURCH ST
ELMIRA NY 14905

ELMIRA GLOVE HOUSE INC
510 W CHURCH ST
ELMIRA NY 14905

ST MARY'S CHURCH SOCIETY
224 FRANKLIN ST
ELMIRA NY 14904

COUNTY OF CHEMUNG
PO BOX 588
320 E MARKET ST
ELMIRA NY 14902

ELMIRA CITY SCHOOL DIST
951 HOFFMAN ST
ELMIRA NY 14905

MOORE RONALD K
307 SCENIC DR
HORSEHEADS NY 14845

AUSTIN MERLE J
68 FRANKLIN ST
ELMIRA NY 14904

TAYLOR HELEN J
66 FRANKLIN ST
ELMIRA NY 14904

SHORT EARL & MABEL
64 FRANKLIN ST
ELMIRA NY 14904

PIPER BEA MARY
% ALLAN N & M BARDT
62 FRANKLIN ST
ELMIRA NY 14904

SCHULTZ ROBERT J
465 THALIA RD
VIRGINIA BEACH VA 23452

STRADER TIMOTHY M &
35 KINGSLEY RD
PINE VALLEY NY 14872

JOHNSON MARY L
56 FRANKLIN ST
ELMIRA NY 14904

CORNELL TRACY & KATHLEEN
1642 PENNA AVE
PINE CITY NY 14871

DEPUE DORINE L
%RAYMOND & GEPPINA DEPUE
102 SOUTH AVE
ELMIRA NY 14904

COOKLIN FRED R
6352 31ST TERRACE NORTH
ST PETERSBURG FL 33710

MORRIS ROBERT A
108 SOUTH AVE
ELMIRA NY 14904

MORROW MICHAEL & L
61 FRANKLIN ST
ELMIRA NY 14904

MORROW MICHAEL J
61 FRANKLIN ST
ELMIRA NY 14904

STALICA JANE & KENNETH
7 EDGEWOOD DR
HORSEHEADS NY 14845

TEMPLE SCOTT K
101 FRANKLIN ST
ELMIRA NY 14904

DEAN TERRANCE P
827 ERIE ST
ELMIRA NY 14904

DORA R HESS TRUST
215 COLEMAN AVE
ELMIRA NY 14903

COSTELLO STEPHEN J &
543 S MAIN ST
ELMIRA NY 14904

COUNTY OF CHEMUNG
%CHEMUNG COUNTY TREASURER
320 E MARKET ST
ELMIRA NY 14901

MCCABE FREDERICK J &
549 S MAIN ST
ELMIRA NY 14904

OSTRANDER CAROL A
551 S MAIN ST
ELMIRA NY 14904

MOORE JEFFREY & JAMES
132 PARK TERRACE DRIVE
HORSEHEADS NY 14845

KELSEY RICHARD L
1055 COLLEGE AVE
ELMIRA NY 14901

CITY OF ELMIRA
CITY HALL
ELMIRA NY 14901

FRISBIE CONNIE
409 SIMKIN RD
ELMIRA NY 14901

MOLINA DIXIE & TIA
505 ERIE ST
ELMIRA NY 14904

SCRIP NICHOLAS & E E
509 ERIE ST
ELMIRA NY 14904

LEWIS BETTINA L
RR #3 BOX 354
GILLETT PA 16925

RUBIN NED
190 PRESCOTT AVE
ELMIRA HGTS NY 14903

SCRIP NICHOLAS J
208 BRAND ST
ELMIRA NY 14904

PASSOS PATRA
57 W GLENWOOD DR
LATHAM NY 12110

SMITH RICHARD W
83 SUTTON RD
HORSEHEADS NY 14845

TOTEM TAXI INC
105 W THIRD ST
ELMIRA NY 14901

BURNS PAUL W & ROSE M
1201 CHARLES ST
ELMIRA NY 14904

MCKINNEY DALE
760 FALCK ST
ELMIRA NY 14904

GILBERT DONALD & GLORIA
510 LAKE AVE
ELMIRA NY 14904

POLEY SIGRID J
223 E LAFRANCE ST
ELMIRA NY 14904

JONES ALBERT L JR &
5394 COUNTY RT 8
AVOCA NY 14809

SHAYLOR JONATHON G
219 E LA FRANCES ST
ELMIRA NY 14904

VARKATZAS KANSTANTINOS
217 E LAFRANCE ST
ELMIRA NY 14904

RICE WILLIAM H SR
1120 OAK ST
ELMIRA NY 14901

BLACK DONALD & JANIET
213 E LAFRANCE ST
ELMIRA NY 14904

FREEMAN ROGER H
209 E LAFRANCE ST
ELMIRA NY 14904

SECRETARY OF HOUSING AND
LAFAYETTE COURT
465 MAIN ST
BUFFALO NY 14203

GUSH PHILIP R
351 E WASHINGTON AVE
ELMIRA NY 14904

COLUNIO ROSALIE
206 E LAFRANCE ST
ELMIRA NY 14904

BELL KATHERINE M
PO BOX 1304
ELMIRA NY 14902

RANDOLPH CLAYTON & SELMA
513 ERIE ST
ELMIRA NY 14904

MORSE THOMAS D
169 HILLCREST RD
ELMIRA NY 14905

MORSE THOMAS D
169 HILLCREST RD
ELMIRA NY 14905

CITY HALL
ELMIRA NY 14901

MANDELLS TAVERN INC
601 ERIE ST
ELMIRA NY 14904

MANDELL ROSALIE A
1116 PENNA AVE
ELMIRA NY 14904

BARNARD MARY K
202 E LAFRANCE ST
ELMIRA NY 14904

SAGINARIO LENA V
206 E LAFRANCE ST
ELMIRA NY 14904

FERRIS MARGARET M
208 E LAFRANCE ST
ELMIRA NY 14904

MARKS EDWARD J III &
RD #1 BOX 167
HOFFMAN HOLLOW RD
LOWMAN NY 14861

HUGHES KENNETH W
1000 CHARLES ST
ELMIRA NY 14904

ROBERTS MAJOR J
232 DEVONSHIRE DR
ELMIRA HEIGHTS NY 14903

WRIGHT FRANK J & BARBARA
% RICHARD A MARVIN
408 W FOURTH ST
ELMIRA NY 14901

WARRICK DAVID A & JANEEN
409 WISTERIA WAY
HORSEHEADS NY 14845

PETERSON MURLE A
604 HOWARD ST
ELMIRA NY 14904

DESERA JOYCE
%STANLELY/MARILYN KAMINSK
43 PONCKHOCKIE ST
KINGSTON NY 12401

MALDONADO SANDRA M &
211 MECHANIC ST
ELMIRA NY 14904

CONRAD JOHN W & FRANCES M
209 MECHANIC ST
ELMIRA NY 14904

MALDANARDO C & S
207 MECHANIC ST
ELMIRA NY 14904

REINHART DIANNA
%BEVERLY HELM
605 ERIE ST
ELMIRA NY 14904

HESS STANLEY M TRUST
%RONALD HESS
215 COLEMAN AVE
ELMIRA NY 14903

BIGGS JAMES R
PO BOX 4110
ELMIRA NY 14904

HOUSE GLENN M & JANET E
451 SOUTH AVE
ELMIRA NY 14904

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

SMITH JESSICA M
212 MECHANIC ST
ELMIRA NY 14904

ALLEN BETTY E
608 HOWARD ST
ELMIRA NY 14904

HORTON JOSEPH M
610 HOWARD ST
ELMIRA NY 14904

TERZIAN DOLORES &
%CHARLES/YOLANDA FORGENSI
901 E MARKET ST
ELMIRA NY 14901

MALINOWSKI MARY J
207 RATHBUN ST
ELMIRA NY 14904

COWAN GUY S & THELMA L
BOX 241
WAYNE NY 14893

DANKO JAMES G & DEBORAH L
%JOHN LOVELL
663 ERIE ST
ELMIRA NY 14904

ZUKAS WILLIAM J
1491 PENNA AVE
PINE CITY NY 14871

ZUKAS WILLIAM & A
1491 PENNA AVE
PINE CITY NY 14871

MELENS MARGARET A
212 JOHN ST
HORSEHEADS NY 14845

UPDIKE RAYMOND & DIANA
614 HOWARD ST
ELMIRA NY 14904

SPRAGUE CURTIS & HELEN
2045 GRAND CENTRAL AVE
HORSEHEADS NY 14845

CHAMPION DANIEL L &
215 HOME ST
ELMIRA NY 14904

GOODWIN ROY ESTATE OF
%CONNIE GOODWIN
702 1/2 BROADWAY
ELMIRA NY 14904

WALBURN DONALD K & JANET
203 HOME ST
ELMIRA NY 14904

WALBURN DONALD K
203 HOME ST
ELMIRA NY 14904

WALBURN DONALD & JANET
203 HOME ST
ELMIRA NY 14904

CITY OF ELMIRA
CITY HALL
ELMIRA NY 14901

SOKOLOWSKI ALEX
232 E LAFRANCE ST
ELMIRA NY 14904

ROHDE WALTER J
565 ROBINSON ST
ELMIRA NY 14904

MARKFERDING THOMAS L &
17 FAIRWAY LANE
HORSEHEADS NY 14845

STEVENS MARJORIE K
%LOIS WHIATE
606 FALCK ST
ELMIRA NY 14904

NEILY TINA J
608 FALCK ST
ELMIRA NY 14904

DIEG RUIDGER &
235 NEWHALL ST
ELMIRA NY 14904

VANG SCOTT E
231 NEWHALL ST
ELMIRA NY 14904

LAVELLE ALYCE & CRAWFORD
%WILLIAM H ATKINSON
229 NEWHALL ST
ELMIRA NY 14904

PARSONS JOSEPH & GAYLE
158 W THIRD ST
ELMIRA NY 14901

TURNER BILL & LINDA
653 HOWARD ST
ELMIRA NY 14904

DOVE GARY K & NANCY A
109 SAGE ST
HORSEHEADS NY 14845

SPENCER SHIRELY R
232 NEWHALL ST
ELMIRA NY 14904

MATHEWS MARGARET O &
234 NEWHALL ST
ELMIRA NY 14904

BUNT RICHARD S & JUDY A
236 NEWHALL ST
ELMIRA NY 14904

MELENS MARGARET A
212 JOHN ST
HORSEHEADS NY 14845

NOVAKOWSKI CHARLES A &
612 FALCK ST
ELMIRA NY 14904

SHAFF MARJORIE J
310 HARMON ST
ELMIRA NY 14904

MANDELL DANIEL J JR &
239 HOME ST
ELMIRA NY 14904

NEW YORK STATE ELECTRIC &
PO BOX 3287
ITHACA NY 14852

HENNESSY JAMES W JR
233 HOME ST
ELMIRA NY 14904

O'HANRAHAN JAMES J &
235 HOME ST
ELMIRA NY 14904

DAVENPORT JAMES & DONNA
225 HOME ST
ELMIRA NY 14904

TIPTON HERBERT E & CLARA
%ANNE PUCHOSIC
226 HOME ST
ELMIRA NY 14904

VAN HORN ANNE M
228 HOME ST
ELMIRA NY 14904

ANDERSON MARTIN E
232 HOME ST
ELMIRA NY 14904

KAPNOLAS MARIA
236 HOME ST
ELMIRA NY 14904

PARSONS MICHAEL J &
904 SING SING RD
HORSEHEADS NY 14845

ZACK HELEN K
242 HOME ST
ELMIRA NY 14904

MANIKOWSKI ANNEMARIE
704 FALCK ST
ELMIRA NY 14904

JOSLIN MAUREEN
706 FALCK ST
ELMIRA NY 14904

WERT WILLIAM & REGINA
708 FALCK ST
ELMIRA NY 14904

HAVENS CLIFFORD G & RITA
710 FALCK ST
ELMIRA NY 14904

KENNEDY MARSHALL L &
408 TIFFT AVE
HORSEHEADS NY 14845

SQUIRES JAMES H &
714 FALCK ST
ELMIRA NY 14904

THOMAS LORRAINE A
235 MID AVE
ELMIRA NY 14904

ZEISER WILBERT VAULT INC
COR MID AVE & HOWARD ST
ELMIRA NY 14904

DECKER BEN CLINTON JR
8 JACKSON ST
NASHUA NH 03060

ZEISER WILBERT VAULT INC
659 HOWARD ST
ELMIRA NY 14904

TOWNSAND KENNETH P
250 MAGNOLIA ST
ELMIRA NY 14904

HOUGH RUTH E
252 MAGNOLIA ST
ELMIRA NY 14904

SENKOW PAMELA L
215 PARK AVE
ELMIRA NY 14901

O'MALLEY MICHAEL J JR &
600 SPAULDING ST
ELMIRA NY 14904

BIGG REBECCA F
80 COUNTRY ESTATES DR
HORSEHEADS NY 14845

GLOVER PEGGY
604 SPAULDING ST
ELMIRA NY 14904

MILAZZO RICHARD C &
%RICHARD/DOROTHY MILAZZO
(LIFE USE)
606 SPAULDING ST
ELMIRA NY 14904

GOODWIN ROY ESTATE OF
%CONNIE GOODWIN
702 1/2 BROADWAY
ELMIRA NY 14904

CAPOZZA NICHOLAS & MARY
610 SPAULDING ST
ELMIRA NY 14904

PETRIWSKY MAYROSE K ET AL
%MAYROSE C KENNY-LIFE USE
612 SPAULDING ST
ELMIRA NY 14904

KOZAK JOSEPH G & SUZANNE
702 SPAULDING ST
ELMIRA NY 14904

ZYWICKI THEODORE & IRENE
706 SPAULDING ST
ELMIRA NY 14904

STRAWN EDNA E
708 SPAULDING ST
ELMIRA NY 14904

TRAVERS JOHN A
PO BOX 1242
ELMIRA NY 14902

GREEN ROBERT & MARGARET S
1336 MOUNTAIN VIEW CIR
PINE CITY NY 14871

GREEN ROBERT T &
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

GREEN ROBERT T &
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

LADOUE DONALD & CAROLYN
715 FALCK ST
ELMIRA NY 14904

BULLOCK GEORGE F &
711 FALCK ST
ELMIRA NY 14904

SAGE JOHN T & SUSAN
707 FALCK ST
ELMIRA NY 14904

ROBYCK JOHN J
705 FALCK ST
ELMIRA NY 14904

ROHDE MARGARET E
252 HOME ST
ELMIRA NY 14904

CHAMBERS JOHN
RD 3 BOX 188
COLUMBIA CROSSROADS PA 16914

VANRIPER FRANCES G
260 HOME ST
ELMIRA NY 14904

STERMER EDWARD V
255 HOME ST
ELMIRA NY 14901

HANNON ELMER & JEAN
253 HOME ST
ELMIRA NY 14904

MILAZZO RICHARD
606 SPAULDING ST
ELMIRA NY 14904

MASLINSKI STANLEY &
609 SCHUYLER AVE
ELMIRA NY 14904

MILAZZO RICHARD C &
%RICHARD/DOROTHY MILAZZO
606 SPAULDING ST
ELMIRA NY 14904

LYON IRENE V
701 SPAULDING ST
ELMIRA NY 14904

KIRTON GORDON HENRY &
305 HOME ST
ELMIRA NY 14904

MCCLELLAND GLENN &
117 NOTTINGHAM WAY
ELMIRA HGTS NY 14903

LYNCH JOSEPH A JR &
44 SUNNYSIDE DR
ELMIRA NY 14905

FRIES TIMOTHY F & DONNA W
332 HOME ST
ELMIRA NY 14904

HIBBARD JONATHAN
600 MAPLE AVE
ELMIRA NY 14904

BURT ELSIE
9295 E COUNTY RD 9
COHOCTON NY 14826

GRESSEL ROBERT L & ALICE
608 MAPLE AVE
ELMIRA NY 14904

HARRIS JOHN E &
308 GLEN AVE
ELMIRA NY 14904

PEOPLE OF N Y S
612 MAPLE AVE
ELMIRA NY 14904

LUTZ HARRIETT O
702 MAPLE AVE
ELMIRA NY 14904

GONZALEZ AMADA
704 MAPLE AVE
ELMIRA NY 14904

LIDDICK MICHAEL & E
706 MAPLE AVE
ELMIRA NY 14904

ZAWKO ROBERT J & LUANN Z
319 MID AVE
ELMIRA NY 14904

SHEEHE MICHAEL & VIRGINIA
315 MID AVE
ELMIRA NY 14904

VANPATTEN RALPH
615 FAIRFIELD AVE
ELMIRA NY 14904

OSTEEN FRANCES
609 FAIRFIELD AVE
ELMIRA NY 14904

LLOYD LISA
605 FAIRFIELD AVE
ELMIRA NY 14904

TOLBERT SCOTT M &
604 FAIRFIELD AVE
ELMIRA NY 14904

UNWIN EUGENE
708 FAIRFIELD AVE
ELMIRA NY 14904

VRZAL JEFFREY V
710 FAIRFIELD AVE
ELMIRA NY 14904

PERRY EUGENE
712 FAIRFIELD AVE
ELMIRA NY 14904

BURNHAM LEONE
307 MID AVE
ELMIRA NY 14904

HANLEY LAURENCE A
305 MID AVE
ELMIRA NY 14904

THOMPSON HAZEL M
304 MID AVE
ELMIRA NY 14904

SWEET DAVID G & BARBARA
306 MID AVE
ELMIRA NY 14904

SOWERS JAMES M & RAMONA A
308 MID AVE
ELMIRA NY 14904

MELENS BERNARD D & CINDY
312 MID AVE
ELMIRA NY 14904

COSTELLO STEPHEN & GLORIA
314 MID AVE
ELMIRA NY 14904

SHERWOOD JAMES G &
316 MID AVE
ELMIRA NY 14904

PETRO THOMAS B JR &
726 MAPLE AVE
ELMIRA NY 14904

MILLER RICHARD C &
728 MAPLE AVE
ELMIRA NY 14904

BROOKS LUCINDA D
730 MAPLE AVE
ELMIRA NY 14904

COUNTY OF CHEMUNG
%CHEMUNG COUNTY TREASURER
320 E MARKET ST
ELMIRA NY 14901

COLE SCOTT C & REBECCA L
734 MAPLE AVE
ELMIRA NY 14901

HEE HELEN O
736 MAPLE AVE
ELMIRA NY 14904

ROBINSON WAYNE E &
738 MAPLE AVE
ELMIRA NY 14904

PIERCE JAMES R & KLYDA K
740 MAPLE AVE
ELMIRA NY 14904

BARNES CLARK A & BETTY J
313 LUCE ST
ELMIRA NY 14904

PALMIERI IRENE D
311 LUCE ST
ELMIRA NY 14904

DE LUCAS ALMA
309 LUCE ST
ELMIRA NY 14904

FULKROD GORDON E & SUSAN
307 LUCE ST
ELMIRA NY 14904

LANINGER CAROL M
303 LUCE ST
ELMIRA NY 14904

SOWERS ROBERT W
301 LUCE ST
ELMIRA NY 14904

ERHARD JOANN H
727 SPAULDING ST
ELMIRA NY 14904

HUNEKE TIM K & SHARRON L
725 SPAULDING ST
ELMIRA NY 14904

HUNEKE TIM K
725 SPAULDING ST
ELMIRA NY 14904

KNIFFIN FRANCIS J &
717 SPAULDING ST
ELMIRA NY 14904

HOLLERAN DAVID & DENISE
403 PARTRIDGE ST
ELMIRA NY 14904

RUSSELL BARBARA J
1833 W WATER ST
ELMIRA NY 14905

PRUNIER PAUL R & EILEEN A
711 SPAULDING ST
ELMIRA NY 14904

WOOD DONALD R & KATHY L
709 SPAULDING ST
ELMIRA NY 14904

STEVENS BARBARA R &
707 SPAULDING ST
ELMIRA NY 14904

TURNER MARSHA D
705 SPAULDING ST
ELMIRA NY 14904

MCMURRAY WILLIAM J
1244 W THIRD ST
ELMIRA NY 14905

OVERACKER BLAINE & SHARON
601 KEEFE ST
ELMIRA NY 14904

JACKSON RICHARD A
603 KEEFE ST
ELMIRA NY 14904

ORIOLES RICHARD T &
605 KEEFE ST
ELMIRA NY 14904

CUEVAS GILBERTO TORRES
607 KEEFE ST
ELMIRA NY 14904

PETREY EARL W
609 KEEFE ST
ELMIRA NY 14904

MICRO CERAMICS INC
PO BOX 242
ELMIRA NY 14902

MANZARI VITO
953 OAK HILL DR
ELMIRA NY 14905

MANZARI VITO
953 OAK HILL RD
ELMIRA NY 14905

MORRIS JAMES M
113 E MILLER ST
ELMIRA NY 14904

CHURCH OF APPLIED
407 W CHURCH ST
ELMIRA NY 14901

GIRARDI LUSIOUS J & DONNA
109 E MILLER ST
ELMIRA NY 14904

MANZARI VITO
105 E MILLER ST
ELMIRA NY 14904

MANZARI VITO
953 OAK HILL DRIVE
ELMIRA NY 14905

MERRONE JOHN A
1264 MAPLE AVE
ELMIRA NY 14904

CITY OF ELMIRA
CITY HALL
ELMIRA NY 14901

TYLER WAYNE E
703-711 ERIE ST
ELMIRA NY 14904

ZEISER WILBERT VAULT INC
MED AVE & HOWARD STS
ELMIRA NY 14904

CHEMUNG HOUSING ASSOCIATE
%GARY FREDERICKS
505 S MAIN ST
HORSEHEADS NY 14845

EISENHOWER HOWARD A &
RAVERT (SAM RAVERT-L.U.)
211 E MILLER ST
ELMIRA NY 14904

EISENHOWER BEATRICE I &
207 E MILLER ST
ELMIRA NY 14904

SPRAGUE MELVIN L JR &
203 E MILLER ST
ELMIRA NY 14904

GIRAGOSIAN FRANK G &
55 HOFFMAN ST
ELMIRA NY 14905

GREEN ROBERT T &
1336 MT VIEW CIRCLE
PINE CITY NY 14871

SPARLING ROBERT W SR
1336 MOUNTAIN VIEW CIRCLE
PINE CITY NY 14871

HEPFNER MARGARET A &
2191 GRAND CENTRAL AVE
HORSEHEADS NY 14845

ROHDE WALTER J
565 ROBINSON ST
ELMIRA NY 14904

YORKE HOWARD & E
715 ERIE ST
ELMIRA NY 14904

COUNTY OF CHEMUNG
%CHEMUNG COUNTY TREASURER
320 E MARKET ST
ELMIRA NY 14901

DALORA JENNIE & ANTHONY
%ADELINE ROSENHECK
7 HAMPTON RD
ELMIRA NY 14904

MANGES RICHARD P
716 ERIE ST
ELMIRA NY 14904

TORRENCE ROBERT & MARIAN
718 ERIE ST
ELMIRA NY 14904

GUBLO JACK
722 ERIE ST
ELMIRA NY 14904

WELLINGTON REGGIE
726 ERIE ST
ELMIRA NY 14904

BESLEY CHARLES H
159 E MILLER ST
ELMIRA NY 14904

MARTELLI BERNICE M
157 E MILLER ST
ELMIRA NY 14904

PERRIGO NANCY C &
157 E CORNING RD
CORNING NY 14830

FRUTCHEY CHARLES J
151 E MILLER ST
ELMIRA NY 14904

FOSTER FREDERICK L JR &
717 JUNCTION ST
ELMIRA NY 14904

FOSTER FREDERICK L JR &
717 JUNCTION ST
ELMIRA NY 14904

ROSE LAVERNE D &
PO BOX 1048
ELMIRA NY 14902

ZEISER WILBERT VAULT INC
753 HOWARD ST
ELMIRA NY 14904

RIPLEY RONALD L & JOYCE
750 FALCK ST
ELMIRA NY 14904

FAIRCHILD WILLIAM E &
752 FALCK ST
ELMIRA NY 14904

LEONARDI LORENZO & ESTHER
1277 HENDY CREEK RD
PINE CITY NY 14871

PENTECOSTAL TABERNACLE
235 MILLER ST
ELMIRA NY 14904

ELMIRA CHRISTIAN CENTER
235 E MILLER ST
ELMIRA NY 14904

DUNLAP RAYMOND F
755 FALCK ST
ELMIRA NY 14904

O'ROURKE JAMES B
753 FALCK ST
ELMIRA NY 14904

RHODE MARY M
345 BREESPORT RD
LOWMAN NY 14861

VERUTO GAIL E
981 HUDSON ACRES DR
PINE CITY NY 14871

STERMER ALBERT V
724 SPAULDING ST
ELMIRA NY 14904

MCCANN SANDRA L
726 SPAULDING ST
ELMIRA NY 14904

GUILD DONALD P & ROSE D
728 SPAULDING ST
ELMIRA NY 14904

SCHAUS ERIC A & LYNN A
730 SPAULDING ST
ELMIRA NY 14904

BOLLOW THOMAS & PATRICIA
752 SPAULDING ST
ELMIRA NY 14904

QUINN LEO & HELEN
756 SPAULDING ST
ELMIRA NY 14904

CORRADINI RICHARD &
758 SPAULDING ST
ELMIRA NY 14904

ARMSTRONG F J & M E
760 SPAULDING ST
ELMIRA NY 14904

PETERSON MELISSA A
762 SPAULDING ST
ELMIRA NY 14904

WILLIAMS MARILYN M
764 SPAULDING ST
ELMIRA NY 14904

TOLBERT WILLIAM P
PO BOX 4052
ELMIRA NY 14904

HORTON JAY J
768 SPAULDING ST
ELMIRA NY 14904

WILSON JAMES & JOAN
259 E MILLER ST
ELMIRA NY 14904

HEYWARD JULIUS & BARBARA
257 E MILLER ST
ELMIRA NY 14904

KEEFE JOSEPH & PRISCILLA
255 E MILLER ST
ELMIRA NY 14904

GEROW LAWRENCE C & BETTY
253 E MILLER ST
ELMIRA NY 14904

PENTACOSTAL TABERNACLE
%REV JOHN BEDZYK
235 E MILLER ST
ELMIRA NY 14904

PENTECOSTAL TABERNACLE
235 E MILLER ST
ELMIRA NY 14904

PENTECOSTAL TABERNACLE
237 E MILLER ST
ELMIRA NY 14904

PENTECOSTAL TABERNACLE
235 E MILLER ST
ELMIRA NY 14904

PENTECOSTAL TABERNACLE
235 E MILLER ST
ELMIRA NY 14904

BLAKE JAMES & JOSEPHINE
751 SPAULDING ST
ELMIRA NY 14904

DANIELS LEOTA M
753 SPAULDING ST
ELMIRA NY 14904

WHEELER PHILIP &
755 SPAULDING ST
ELMIRA NY 14904

BADIA DAN
4 YORK COURT
NORTHPORT NY 11768

STANTON CAROLE J
306 LUCE ST
ELMIRA NY 14904

KELLER AGNES O
308 LUCE ST
ELMIRA NY 14904

TULLER DAVID G
42 BRIARCLIFF DR
HORSEHEADS NY 14845

KARDOULIAS GEORGE &
12132 OAK ST
LARGO FLA 34644

VAN ATTA MICHELE LEE
316 LUCE ST
ELMIRA NY 14904

SEYMOUR RANDY & LINDA
318 LUCE ST
ELMIRA NY 14904

MARTIN GARY G
750 MAPLE AVE
ELMIRA NY 14904

WOOD LAURIE A & NANCY L
526 GAINES ST
ELMIRA NY 14904

REDFIELD DAVID
200 OVERLAND ST
ELMIRA NY 14904

DIEHR STEVEN J
756 MAPLE AVE
ELMIRA NY 14904

DERENZO ALBERT J
758 MAPLE AVE
ELMIRA NY 14904

REDFIELD DAVID
200 OVERLAND ST
ELMIRA NY 14904

BROWN CARL J & WENDY A
317 SYLVESTER PL
ELMIRA NY 14904

STERLING THOMAS E &
315 SYLVESTER PL
ELMIRA NY 14904

ROUPP HOLLY E & TIMOTHY L
%DIANE FUSARE
612 W WATER ST
ELMIRA NY 14905

BROOKS WILLIAM D &
309 SYLVESTER PL
ELMIRA NY 14904

COPPOLA RALPH & MELISSA
BECKWITH RD
PINE CITY NY 14871

CHEM-STEUBEN PROPERTIES
PO BOX 430
BIG FLATS NY 14814

HARRIS STANLEY C
303 SYLVESTER PL
ELMIRA NY 14904

BECKER JACK & JOYCE
757 SPAULDING ST
ELMIRA NY 14904

CLEVELAND DANA
302 SYLVESTER PL
ELMIRA NY 14904

WHIPPLE CHARLES & ALICE
304 SYLVESTER PL
ELMIRA NY 14904

MEHOLCZO ALEXANDER P &
308 SYLVESTER PL
ELMIRA NY 14905

DERICO NICHOLAS J &
310 SYLVESTER PL
ELMIRA NY 14904

REILY WILLIAM & MARY ROSE
312 SYLVESTER PL
ELMIRA NY 14904

WALKER SHERRI S
314 SYLVESTER PL
ELMIRA NY 14904

CARNEGIE WILLIAM C
318 SYLVESTER PL
ELMIRA NY 14904

CLOKE EDWARD & SHARON
776 MAPLE AVE
ELMIRA NY 14904

WOODS CHARLES M & SUSAN R
778 MAPLE AVE
ELMIRA NY 14904

SCARPA JULIAN J & SYBIL
653 PENNA AVE
ELMIRA NY 14904

PIPER JAMES E & CAROL H
319 E MILLER ST
ELMIRA NY 14904

HUMMER JOHN E & ROSEMARY
228 CANNERY DR
LARKSVILLE PA 18704

SHAW PATTI JO &
315 E MILLER ST
ELMIRA NY 14904

PRITCHARD DALE E
313 E MILLER ST
ELMIRA NY 14904

MORGAN NANCY C
309 E MILLER ST
ELMIRA NY 14901

MORGAN NANCY C
309 E MILLER ST
ELMIRA NY 14904

KELLOGG JAMES
305 E MILLER ST
ELMIRA NY 14904

KELLOG JAMES
305 E MILLER ST
ELMIRA NY 14904

RUMSEY JOYCE A
980 WINSOR TERRACE
ELMIRA NY 14905

BALDWIN ROBERT & FRANCES
109 SOUTH AVE
ELMIRA NY 14904

TULL ANGEL L & FELICITA
107 SOUTH AVE
ELMIRA NY 14904

DYER BRUCE R & PATRICIA M
430 BREESPORT RD
HORSEHEADS NY 14845

ROBINSON WILLIAM A &
769 SPAULDING ST
ELMIRA NY 14904

CHESEBRO STEVEN J & JOAN
301 E MILLER ST
ELMIRA NY 14904

BAILEY JAMES L & TERESA M
RD 2
MILLERTON PA 16936

MAROSEK VIRGINIA SUE &
5709 PHELPS LUCK DR
COLUMBIA MD 21045

DELBRIDGE DANIEL L &
2393 ST RT 352
ELMIRA NY 14903

PARK OUTDOOR ADVERTISING
301 E STATE ST
PO BOX 6477
ITHACA NY 14851

TULLER DAVID G
42 BRIARCLIFF DR
HORSEHEADS NY 14845

CADY LARRY E
610 PENNSYLVANIA AVE
ELMIRA NY 14904

CORNELL LORRAINE S
603 S MAIN ST
ELMIRA NY 14904

Clean Water/Clean Air Bond Act of 1996
Environmental Restoration Projects
Brownfields Program

Brownfields are abandoned, idled, or under-used properties where expansion or redevelopment is complicated by real or perceived environmental contamination. They are typically former industrial or commercial properties where improper operations may have resulted in soil and/or groundwater contamination. They often pose not only environmental, but legal and financial burdens on communities. The passage of the Clean Water/Clean Air Bond Act of 1996 established a $200 million Environmental Restoration Projects fund. Known as the Brownfields Program, the fund provides financial assistance to municipalities to investigate and/or remediate brownfield properties. These properties may then be marketed for redevelopment by the municipality or used by the municipality for a variety of activities including industrial, commercial, residential or public use.

In January of 1998, the Department forwarded to all municipalities a copy of the final Technical and Administrative Guidance Memorandum (TAGM) entitled, "Environmental Restoration Projects." This document is for use by municipalities in applying for state assistance brownfield grants. The guidance document includes an application form, a procedures handbook, an example of a municipal authorization format and a standard state assistance contract. This document outlines the application process, the state assistance contract, the use of professional consultants, site investigation/remedial alternatives reporting, citizen participation and liability issues.

In January of 1998, regulations were finalized addressing the provisions of state financial assistance to municipalities to carry out the Brownfields Program. The Department adopted subpart 375-4 of 6 NYCRR Part 375 to facilitate the administration and implementation of the state assistance program.

Eligibility

- NYS municipalities. Municipality includes counties, cities, towns and villages as well as local public authorities, public benefit corporations, school and supervisory districts and improvement districts.
- Municipality must own the property and cannot be responsible for the contamination.
- Purpose must be to investigate or remediate hazardous substances or petroleum on the property.
- The property cannot be listed as a Class 1 or 2 site on the NYS Registry of Inactive Hazardous Waste Disposal Sites.

Projects are evaluated based upon four criteria defined in the Bond Act:

1. benefit to the environment;
2. economic benefit to the State;
3. potential for public or recreational use of the cleaned up property; and
4. availability of other funding sources to pay for the project.

Two Types Of Grants:

1. Investigation Grants

- The purpose is to determine the nature and extent of contamination and then determine the appropriate remedy.
- Investigations follow the same process as a Remedial Investigation/Feasibility Study used in the State Superfund Program.
- Includes public input on the selection of the cleanup remedy and ends with a Record of Decision

(ROD).

- Investigation applications are handled on a first come, first served basis.

2. Remediation Grants:

- Remediation includes the Design and Construction of the cleanup selected in the ROD.
- Projects are prioritized using a priority ranking score based on the four Bond Act criteria:
  1. benefit to the environment;
  2. economic benefit to the State;
  3. potential for public or recreational use of the cleaned up property; and
  4. availability of other funding sources to pay for the project.
- Remediation applications are reviewed, scored, ranked and approved on a periodic basis.

Reimbursement of Costs

- Municipalities may submit requests for payment for any costs that they have paid to a contractor and/or vendor, plus any costs they have been billed but not yet paid. Payments may be submitted quarterly, or more frequently.

Liability Limitation

- The municipality and all successors in title, lessees, and lenders are released from remedial liability for hazardous substances that were on the property prior to the grant.
- The State indemnifies these same persons in the amount of any settlements/judgements obtained regarding an action relating to hazardous substances that were on the property prior to the grant.
- Such person shall be entitled to representation by the State Attorney General.

Public Participation

- There are two primary public participation requirements:
  1. The municipality must prepare and implement a public participation plan.
  2. A 45-day comment period must be provided on the proposed remedy.

State Environmental Quality Review (SEQR)

- Investigation projects are Type II actions and therefore exempt from SEQR.
- Remediation projects require compliance with SEQR. The municipality must submit either a negative declaration or a Findings Statement. It is strongly recommended that the municipality coordinate lead agency status with DEC prior to conducting its SEQR review.

Cost Recovery

- The State is obligated to make all reasonable efforts to recover costs from responsible parties.
- The municipality is only obligated to assist the State in cost recovery efforts by providing the information obtained as a result of the project and to identify responsible parties.
- Any monies received by the municipality from the Federal Government, responsible parties, other private parties, or the sale or lease of the property are handled in the following hierarchy:
  1. The first monies recovered are split 75%/25% between the State and the municipality to reimburse the project costs.
  2. If the monies recovered exceed the project costs, the municipality may take any of its cost of the property including any back taxes owed to the municipality.
  3. Any profit after one and two is split 50/50 between the-State and the municipality. The funds returned to the State are used for additional Brownfield projects.

Glossary and Acronyms

GLOSSARY

This glossary defines some terms associated with New York's brownfield site program. Words in **bold** in the definitions are defined elsewhere in the glossary. A list of acronyms often used in the program follows the glossary.

Administrative Record — Part of a site's **Record of Decision** which lists and defines documents used in the development of the State's decision about selection of a remedial action.

Availability Session — A scheduled gathering of program staff and members of the public in a casual setting, without a formal presentation or agenda but usually focusing on a specific aspect of a site's investigation or remedial process.

Bond Act — See **1996 Clean Water/Clean Air Bond Act.**

Brownfield — An abandoned, idled, or under-used property where expansion or redevelopment is complicated by real or perceived environmental contamination. Brownfields are typically former industrial or commercial properties where improper operations may have resulted in soil and/or groundwater contamination.

Citizen Participation — A program of planning and activities to encourage communication among people affected by or interested in **brownfield** sites and the government and municipal agencies responsible for investigating and remediating them.

Citizen Participation Plan — A document which must be developed at a site's investigation stage. A CP Plan describes the citizen participation activities that will be conducted during a site's investigation and remedial process.

Citizen Participation Record — A document that describes the citizen participation activities to be conducted during the investigation and/or remedial process. A Citizen Participation Record also directs a scoping process to determine if additional citizen participation activities are appropriate and feasible.

Citizen Participation Specialist — A staff member from a NYSDEC central office or regional office who has specialized training and experience to assist with a site-specific citizen participation program.

1996 Clean Water/ Clean Air Bond Act — Often referred to as "the Bond Act," this Act authorized a $200 million fund for the cleanup of environmental restoration or **brownfield** projects. This is different from the 1986 Environmental Quality Bond Act, which funds the State's inactive hazardous waste disposal site remediation program.

Comment Period — A time period for the public to review and comment about various documents and actions. For example, a 45-day comment period is provided when a **Proposed Remedial Action Plan (PRAP)** is issued for a **brownfield** site.

Consent Order — A legal and enforceable agreement negotiated between NYSDEC and a municipality or other party. The order sets forth agreed upon terms by which a party will undertake site investigation and/or cleanup, or pay for the costs of those activities. The order includes a description of the actions to be taken by the party with NYSDEC oversight, and a schedule for implementation.

Division of Environmental Remediation — Formerly the Division of Hazardous Waste Remediation, a major program unit within the New York State Department of Environmental Conservation that conducts the **brownfield** program. Staff include: engineers, geologists, chemists, attorneys, citizen participation specialists, environmental program specialists and support staff.

Document Repository — A file of documents pertaining to a site's investigation, remedial and citizen participation programs which is made available for public review. The file generally is maintained in a public building near the **brownfield** site to provide access at times and a location convenient to the public.

Groundwater — Water found beneath the earth's surface that fills pores between soil particles or that fills cracks in bedrock. "Well water" is groundwater.

Inorganic — Substances that do not contain carbon. Metals such as zinc and lead are inorganic substances.

Interim Remedial Measure (IRM)

A discrete action which can be conducted at a site relatively quickly to reduce the risk to people's health and the environment from a well-defined contamination problem. An IRM can involve removing contaminated soil and drums, providing alternative water supplies or securing a site to prevent access.

Mailing List

Names, addresses and/or telephone numbers of individuals, groups, organizations, government officials and media affected by or interested in a particular **brownfield** site. The size of a mailing list and the categories included are influenced by population density, degree of interest in a site, the stage of the investigation or remedial process and other factors.

Monitoring Well

A hole drilled into the soil or bedrock which enables officials to collect samples of groundwater at a specific horizontal and vertical location. The samples can then be tested to look for contaminants.

New York State Department of Health

Agency within the executive branch of New York State government which: performs health-related inspections at suspected hazardous waste sites; conducts health assessments to determine potential risk from environmental exposure; reviews Risk Assessments prepared during site investigations; conducts health-related community outreach around sites; and reviews remedial actions to assure that public health concerns are adequately addressed.

Permeability

The extent to which a liquid or gas can move through a substance. For example, water moves easily through sandy soil (a high permeability soil) and slowly through clay (a low permeability soil).

Plume

An area of chemicals moving away from its source in a feather-like (hence the name, plume) shape. For example, a plume can be a column of smoke drifting away from a chimney or an area of dissolved chemicals moving with groundwater.

PPB/PPM

The concentration of a substance in air, water, or soil. The abbreviations stand for part per billion (ppb) and part per million (ppm). One ppb means there is one part of a substance for every billion parts of the air, water or soil in which it is measured. One ppb is 1,000 times less than 1 ppm.

Project Manager	An NYSDEC staff member within the **Division of Environmental Remediation** (usually an engineer, geologist or hydro geologist) responsible for oversite of **brownfield** projects. The Project Manager works with legal, health, **citizen participation** and other staff to accomplish site-related goals and objectives.
Proposed Remedial Action Plan (PRAP)	A document outlining the State's preferred remedial (cleanup) actions for a **brownfield** site and explaining why the Stte prefers those actions (or no action) over others. The PRAP is created based on information developed during the site's investigation. The PRAP is reviewed by the public and other state agencies.
Public Meeting	A scheduled gathering of agency staff and the public to give and receive information, ask questions and discuss concerns about a site's investigation or remedial program. A public meeting, unlike an **availability session**, generally features a formal presentation and a detailed agenda.
Record of Decision (ROD)	A document which provides a definitive record of the cleanup alternative that will be used to remediate a **brownfield** site. The ROD is based on information developed during the **Site Investigation** and public comment period.
Remedial Construction	The physical development, assembly and implementation of the remedial alternative selected to remediate a site. Construction follows the **Remedial Design** stage of a site's remedial program.
Remedial Design	The process following finalization of a **Record of Decision** in which plans and specifications are developed for the **Remedial Construction** of the alternative selected to remediate a site.
Responsiveness Summary	A written summary of major oral and written comments received during the **comment period** for a **Proposed Remedial Action Plan**, and responses to those comments.
Semi-Volatile Organic Compounds	A group of chemicals similar to **Volatile Organic Compounds** that do not evaporate as easily.

Site Investigation/ Remedial Alternatives Report

The Site Investigation defines and characterizes the type and extent of contamination at the site. The Remedial Alternatives Report uses information developed during the Site Investigation to examine alternative remedial actions to eliminate or reduce the threat of contamination to public health and the environment.

Soil Boring

A circular hole made in the ground by a drill to collect soil samples deep in the ground. Samples are collected for testing to see if the subsoil has been contaminated. Sometimes these borings are converted into groundwater **monitoring wells.**

Soil Gas Survey

A method for investigating the underground distribution of **volatile organic compounds** by looking for their vapors in the soil gas (air trapped between soil particles). In a soil gas survey, a small amount of soil gas is collected from various locations and tested for the presence of contaminants.

Volatile Organic Compounds (VOCs)

A group of chemicals that contain carbon and evaporate easily. These chemicals include substances such as industrial cleaning solvents and gasoline.

ACRONYMS

AG	--	New York State Attorney General's Office
AST	--	Above-Ground Storage Tank
C & D	--	Construction and Demolition Debris
CERCLA	--	Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Federal "Superfund"Law)
CO	--	Consent Order
CP	--	Citizen Participation
CPS	--	Citizen Participation Specialist
DEC	--	Department of Environmental Conservation (New York State)
DER	--	Division of Environmental Remediation (NYSDEC)
DOH	--	Department of Health (New York State)
DOL	--	Department of Law (New York State)
ENB	--	Environmental Notice Bulletin
EQBA	--	1986 Environmental Quality Bond Act (New York State "Superfund")
EPA	--	United States Environmental Protection Agency
FOIL	--	Freedom of Information Law
GPM	--	Gallons Per Minute
HeLP	--	Health Liaison Program (NYS Department of Health)
IRM	--	Interim Remedial Measure
mg/kg	--	milligrams per kilogram
MW	--	Monitoring Well
NAPL	--	Non-Aqueous Phase Liquid
ND	--	Not Detected
NPL	--	National Priorities List
NYSDEC	--	New York State Department of Environmental Conservation
NYSDOH	--	New York State Department of Health
O & M	--	Operation and Maintenance
OSHA	--	United States Occupational Safety and Health Administration
OU	--	Operable Unit
PAHs	--	Poly-Aromatic Hydrocarbons
PCBs	--	Poly-Chlorinated Biphenyls
POTW	--	Publicly Owned Treatment Works (sewage treatment plant)
ppm/ppb/ppt	--	parts per million/parts per billion/parts per trillion
PRAP	--	Proposed Remedial Action Plan
PRP	--	Potentially Responsible Party
RA	--	Remedial Action
RAR	--	Remedial Alternatives Report
RCRA	--	Resource Conservation and Recovery Act (Federal Law)
RD	--	Remedial Design
RHWRE	--	Regional Hazardous Waste Remediation Engineer

ROD	--	Record of Decision
SCGs	--	Standards, Criteria and Guidance Values
SEQR	--	State Environmental Quality Review Act
SI	--	Site Investigation
SI/RAR	--	Site Investigation/Remedial Alternatives Report
SSF	--	State Superfund
STARS	--	Spill Technology and Remediation Series
SVOCs	--	Semi-Volatile Organic Compounds (chemicals)
TAGM	--	Technical and Administrative Guidance Memorandum
TCLP	--	Toxicity Characteristic Leaching Procedure
TSDF	--	Treatment, Storage and Disposal Facility
ug/l	--	Micrograms per liter
USGS	--	U.S. Geological Service
UST	--	Underground Storage Tank
VOCs	--	Volatile Organic Compounds (chemicals)

APPENDIX A

PHASE I ENVIRONMENTAL ASSESSMENT REPORT

PHASE I ENVIRONMENTAL ASSESSMENT

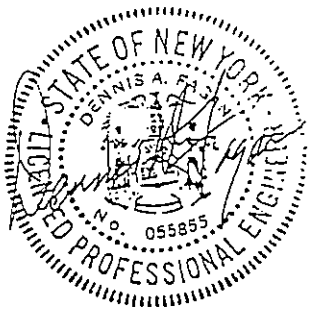
FORMER AMERICAN LAFRANCE PROPERTY

100 EAST LAFRANCE STREET (TAX MAP #99.12-2-1.1)

ELMIRA, NEW YORK

PREPARED FOR:

CITY OF ELMIRA



PREPARED BY:

FAGAN ENGINEERS
Environmental Consultants
113 East Chemung Place
Elmira N.Y. 14904
(607) 734-2165

DECEMBER, 1996
FE JOB# 96.147

PHASE I ENVIRONMENTAL ASSESSMENT

AMERICAN LAFRANCE PROPERTY

ELMIRA, NEW YORK

TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

1. SUMMARY

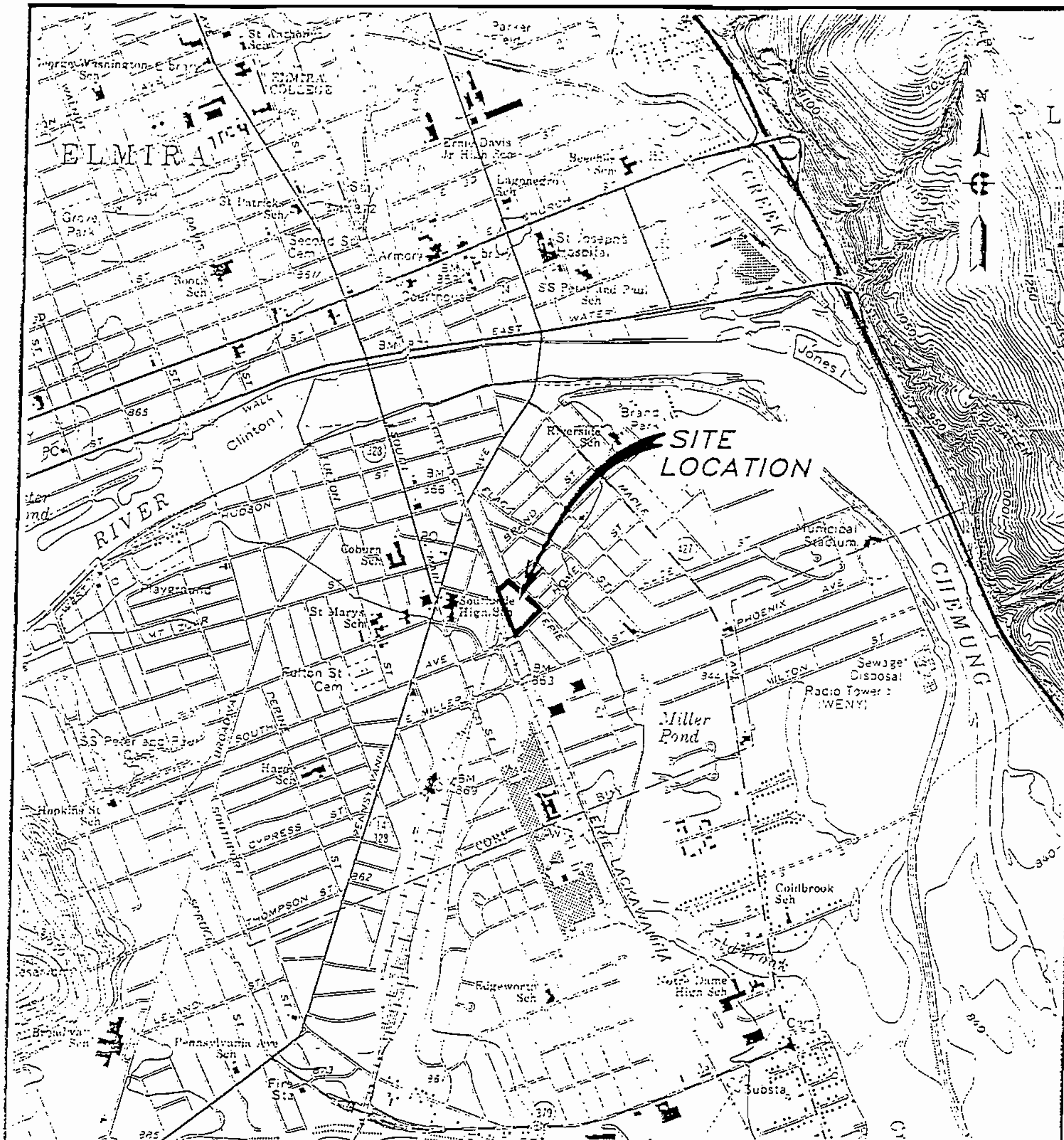
Fagan Engineers has performed a Phase I Environmental Site Assessment in conformance with the scope limitations of ASTM Practice E 1527-94 of the 100 East La France Street property located in the City of Elmira, New York.

Two potential environmental conditions have been identified as part of this assessment as follows (refer to Location Map for details):

1.	LOCATION:	West side of property near Consolidated Rail property.
	TYPE OF RELEASE:	Liquid tar.
	FIELD INSPECTION:	Liquid tar was observed on the ground surface.
	PHASE II RECOMMENDATION:	Proper disposal of this material is recommended.
2.	LOCATION:	Entire site.
	TYPE OF RELEASE:	Unknown.
	FIELD INSPECTION:	Historical records indicate a former foundry area, painting areas, and machine shop. A conceptual rendition of former building locations is shown on Figure 2.
	PHASE II RECOMMENDATION:	Subsurface explorations are recommended to determine whether a release of a hazardous substance or petroleum product has occurred from former industrial site use including the area where liquid tar was observed on the surface.

2. SITE DESCRIPTION

The subject site is a 4.357 acre irregularly shaped parcel located on the west side of Erie Street in the City of Elmira, Chemung County, New York. The subject site currently is a vacant parcel. Refer to Figure 1, Location Map, for location; and Figure 2, Site Plan, for site details.

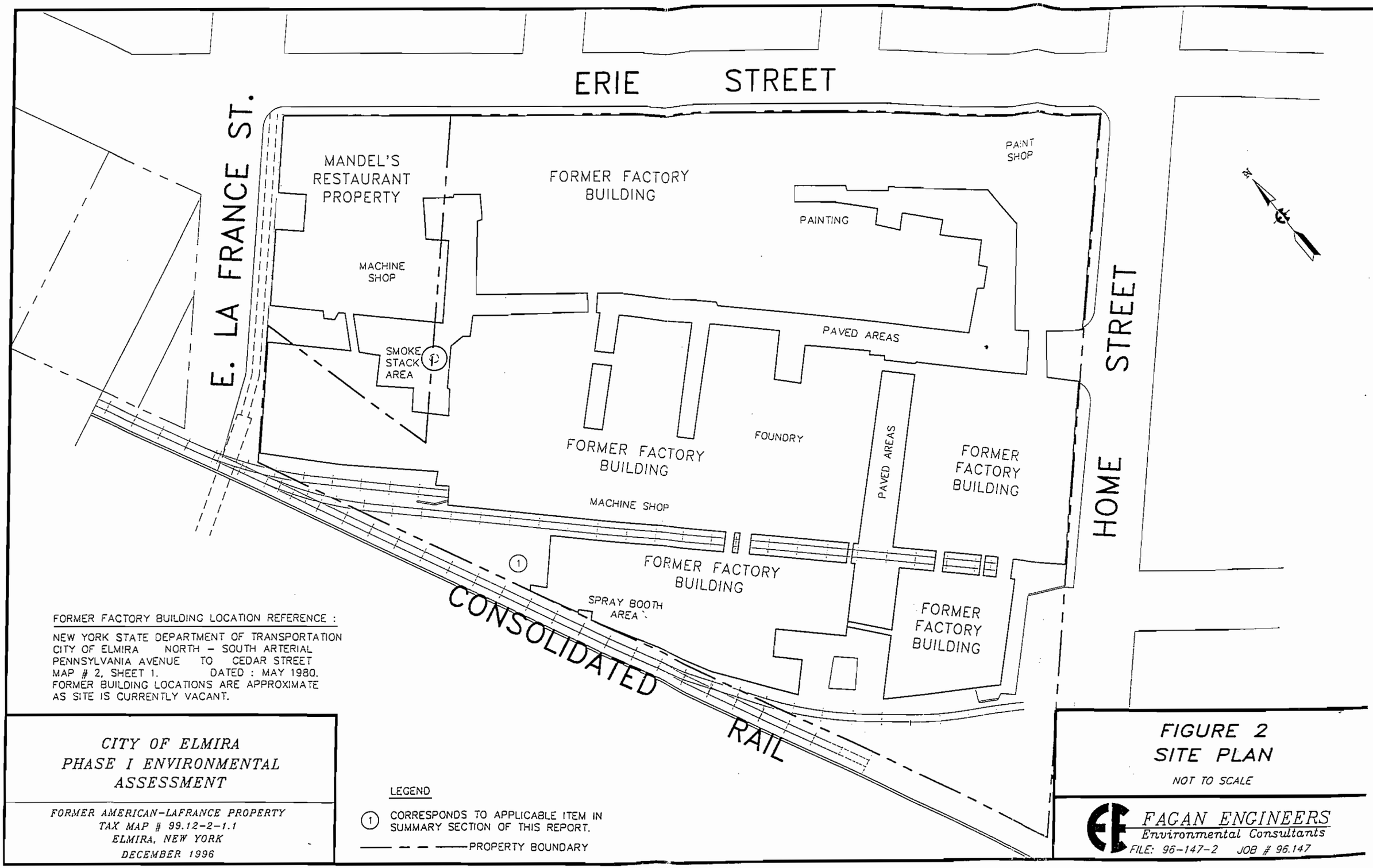


CITY OF ELMIRA
PHASE I ENVIRONMENTAL
ASSESSMENT

FIGURE 1
LOCATION MAP
SCALE: 1" = 2,000'

FORMER AMERICAN-LAFRANCE PROPERTY
TAX MAP # 99.12-2-1.1
ELMIRA, NEW YORK
DECEMBER 1996

FAGAN ENGINEERS
Environmental Consultants
JOB # 96.147



FORMER FACTORY BUILDING LOCATION REFERENCE :

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
CITY OF ELMIRA NORTH - SOUTH ARTERIAL
PENNSYLVANIA AVENUE TO CEDAR STREET
MAP # 2, SHEET 1. DATED : MAY 1980.
FORMER BUILDING LOCATIONS ARE APPROXIMATE
AS SITE IS CURRENTLY VACANT.

CITY OF ELMIRA
PHASE I ENVIRONMENTAL ASSESSMENT

FORMER AMERICAN-LAFRANCE PROPERTY
TAX MAP # 99.12-2-1.1
ELMIRA, NEW YORK
DECEMBER 1996

LEGEND

(1) CORRESPONDS TO APPLICABLE ITEM IN SUMMARY SECTION OF THIS REPORT.

——— — — ——PROPERTY BOUNDARY

FIGURE 2
SITE PLAN
NOT TO SCALE

FAGAN ENGINEERS
Environmental Consultants
FILE: 96-147-2 JOB # 96.147

The current zoning is I-A; Light Industrial. Tax Map Reference: 99.12-2-1.1. The Owner of Record is the City of Elmira. Deed Reference: Chemung County Clerks Office: Deed Book 709, Page 514. This site is also in an Economic Development Zone.

The SCS Soil Survey of Chemung County shows this site to have the following soil type:

> "Howard" gravelly silt loam: This soil type consists of deep, well-drained and somewhat excessively drained, medium-textured soils that developed in stratified glacial outwash deposits of sand and gravel.

3. SITE HISTORY

Former uses of the subject site with approximate dates of operation are as follows:

1925-1930	American La France Fire Engine Company
1935-1950	American La France and Foamite Company
1955-1960	American La France Foamite Corporation
1965-1970	American La France, a division of Sterling Precision Instruments
1975-1980	American La France, a division of Automatic Sprinkler Corporation
1980	NYS Department of Transportation
1984	According to Steve Avery of the City of Elmira Code Enforcement, a demolition permit was issued to L. M. Sessler on March 28, 1984. The completion date of record is November, 1984.
1990	Vacant

4. ADJOINING PROPERTIES AND USES

The subject site is bordered by the following:

NORTH:	Boars Nest Bar across Erie Street. La France Equipment Corporation.
SOUTH:	Micro-Ceramics, Incorporated. TDS, fitness product manufacturer Tyler Fire Equipment

EAST: Sumitomo Tire across Erie Street.
Mandel's Restaurant across Erie Street.
Residential dwellings across Erie Street.

WEST: Consolidated Rail Corporation..

5. STORAGE OF HAZARDOUS MATERIALS

There were no potentially hazardous materials observed to be stored on the site.

6. INSPECTION REPORT

A. SUMMARY OF ENVIRONMENTAL CONDITIONS:

Two potential environmental conditions have been identified as part of this investigation and during the site inspection as follows:

1. Liquid tar on the ground surface.
2. Unknown subsurface potential environmental conditions as the result of former industrial site use.

B. FIELD INSPECTION SUMMARY:

On December 18, 1996, the subject site was inspected by a representative of Fagan Engineers, for the purpose of conducting a Phase I Environmental Assessment.

Liquid tar was observed on the site near the Consolidated Rail property.

Visual inspection did not indicate any potential environmental conditions associated with the adjoining properties.

7. ENVIRONMENTAL EASEMENTS AND COVENANTS

None found.

8. UTILITIES

1. Electric service is available from NYSEG.

2. Natural gas is available from NYSEG.

3. Water is available from the Elmira Water Board municipal water supply.

4. Telephone service is available from NYNEX.

5. Sanitary waste disposal is available by the CCESD sanitary sewer.

6. Fire protection is furnished by the City of Elmira Fire Department.

7. On-site stormwater disposal is accomplished through surface conveyance and percolation. A storm sewer is planned on the west side of the Conrail property as part of the North-South Arterial project. Availability to the subject site is unknown.

9. LOCAL, STATE, AND FEDERAL LIST SEARCH

APPENDIX A: LIST SEARCH DATA

The lists in Appendix A represent the existence of, or potential for, recognized environmental conditions on the subject site and properties within the ASTM standard search radii.

Review of this list finds that the listed potential environmental conditions should not have significant impact on the subject site.

APPENDIX B: SANBORN MAPS

Sanborn maps are fire insurance maps that are used to establish a history of prior land use. These maps are especially useful in identifying potential environmental conditions as a result of prior use of the subject site.

Review of the available maps indicate the existence of potential environmental conditions from prior site use as follows:

> The 1903 through 1950 Sanborn maps show the presence of multiple manufacturing factory buildings located on the property. Areas of potential environmental concern such as paint and foundry areas are detailed.

APPENDIX A

LIST SEARCH DATA

PERTAINING TO:
AMERICAN LA FRANCE PROPERTY
ERIE STREET
ELMIRA, NY 14904

REPORT NUMBER:
132452A

PREPARED ON:
12/16/1996

ON BEHALF OF:
Fagan Engineers
113 E. Chemung Pl
Elmira, NY 14904

If you have any questions or comments regarding this report, please contact ERIIS Customer Service at 1-800-989-0403, locally at 703-834-0600, or fax us at 703-834-0606. Thank you for your order.

ERIIS DISCLAIMER

The information contained in this report has been obtained from publicly available sources and other secondary sources of information produced by entities other than Environmental Risk Information & Imaging Services (ERIIS). Although great care has been taken by ERIIS in compiling and checking the information contained in this report to insure that it is current and accurate, ERIIS disclaims any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence or otherwise, and for any consequences arising therefrom. The data provided hereunder neither purports to be nor constitutes legal or medical advice. It is further understood that ERIIS MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OF MERCHANTABILITY, NOR ANY SUCH REPRESENTATIONS OR WARRANTIES TO BE IMPLIED WITH RESPECT TO THE DATA FURNISHED, AND ERIIS ASSUMES NO RESPONSIBILITY WITH RESPECT TO CUSTOMER'S, ITS EMPLOYEES', CLIENTS', OR CUSTOMERS' USE THEREOF. ERIIS SHALL NOT BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES RESULTING, IN WHOLE OR IN PART, FROM CUSTOMER'S USE OF THE DATA. Liability on the part of the Environmental Risk Information & Imaging Services (ERIIS) is limited to the monetary value paid for this report. The report is valid only for the geographical parameters specified on the cover page of this report, and any alteration or deviation from this description will require a new report. This report does not constitute a legal opinion.

ERIIS REPORT OVERVIEW

The following features are available for an ERIIS report:

* Database Report
    * Statistical Profile
    * Database Records
* Related Maps
    * Digital Custom Plotted Map
    * Sanborn Fire Insurance Map(s)
    * Topographical Map(s)

Statistical Profile

The statistical profile is an at-a-glance numeric summary of the databases searched for your ERIIS Report.

Database Records

The detailed federal and state database information indicates potential and actual environmental threats within the study radius. These records are sorted by their distance from the study site.

Digital Custom Map

The digital custom map is cross referenced with the database records. The cross-in-circle in the center of the map represents the study site. The red circles represent distances from the study site. The plottable sites in the report are distinguished on the map by symbols of different shape and color.

Historic Fire Insurance Maps

The ERIIS collection of historical Sanborn Fire Insurance Maps covers 14,000 cities and towns. These maps may indicate prior use of the study site. If no maps are available for the study site, a notice to that effect is included. This notice should serve as evidence of due diligence.

Topographical Map

USGS topographical maps show natural and man-made features as well as the shape and elevation of the terrain. The 7.5 minute quad maps are produced at a scale of 1:24,000, or one inch represents 2,000 feet.

If you have any questions about this report,
please contact ERIIS Customer Service at 1-800-989-0403

ERIIS ASTM STATISTICAL PROFILE
State: NY

ERIIS Report #132452A Dec 13, 1996

Site: AMERICAN LA FRANCE PROPERTY
ERIE STREET
ELMIRA, NY 14904

Latitude: 42.080478
Longitude: -76.801003

Database	Radius (Mi)	Property Area**	Property-1/4	1/4-1/2	1/2-1	>1	TOTAL
NPL	1		0	0	0		0
RCRIS_TS	1		0	0	0		0
CERCLIS	.5		0	0			0
NFRAP	.5		0	0			0
RCRIS_LG	.25		3				3
RCRIS_SG	.25		2				2
ERNS	.05		0				0
HWS	1		0	0	0		0
LRST	.5		0	1			1
SWF	.5		0	0			0
CBS	.25		0				0
MOSF	.25		0				0
PBS	.25		0				0
			5	1	0	0	6

Radon Zone Level: 1

Zone 1 has a predicted average indoor screening level > than 4 pCi/L

A Radon Zone should not be used to determine if individual homes need to be tested for radon.
The EPA's Office of Radiation and Indoor Air (202/233-9320) recommends that all homes be tested for radon, regardless of geographic location or the zone designation in which the property is located.

** A property is defined as a .02 mile buffer around the site's latitude and longitude.

A blank radius count indicates that the database was not searched by this radius per client instructions.

NR in a radius count indicates that the database cannot be reported by this search criteria due to insufficient and/or inaccurate addresses reported by a federal/state agency.

NPL
Date of Data: 05/01/1996
Release Date: 05/13/1996
Date on System: 07/26/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
703/603-8881

National Priorities List

The NPL Report, also known as the Superfund List, is an EPA listing of uncontrolled or abandoned hazardous waste sites. The list is primarily based upon a score which the site receives from the EPA's Hazardous Ranking System. These sites are targeted for possible long-term remedial action under the Superfund Act of 1980.

RCRIS_TS
Date of Data: 05/10/1996
Release Date: 06/10/1996
Date on System: 07/19/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
202/260-4610

Resource Conservation and Recovery Information System - Treatment, Storage, And Disposal Facilities

The RCRIS_TS Report contains information pertaining to facilities which either treat, store, or dispose of EPA regulated hazardous waste. The following information is also included in the RCRIS_TS Report:

- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s) violated, and any proposed & actual penalties
- Information pertaining to corrective actions undertaken by the facility or EPA
- A complete listing of EPA regulated hazardous wastes which are generated or stored on-site

CERCLIS
Date of Data: 05/01/1996
Release Date: 05/13/1996
Date on System: 07/19/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
703/603-8730

Comprehensive Environmental Response, Compensation, and Liability Information System

The CERCLIS Database is a comprehensive listing of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated, or are currently under investigation by the U.S. EPA for the release, or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation, and ultimately placed on the National Priorities List (NPL). As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from the CERCLIS Database.

NFRAP
Date of Data: 05/01/1996
Release Date: 05/13/1996
Date on System: 08/02/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
703/603-8881

No Further Remedial Action Planned Sites

The No Further Remedial Action Planned Report (NFRAP), also known as the CERCLIS Archive, contains information pertaining to sites which have been removed from the U.S. EPA's CERCLIS Database. NFRAP sites may be sites where, following an initial investigation, either no contamination was found, contamination was removed quickly without need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund action or NPL consideration.

RCRIS_LG
Date of Data: 05/10/1996
Release Date: 06/10/1996
Date on System: 07/19/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
202/260-4610

Resource Conservation and Recovery Information System - Large Quantity Generators

The RCRIS_LG Report contains information pertaining to facilities which either generate more than 1000kg of EPA regulated hazardous waste per month, or meet other applicable requirements of the Resource Conservation And Recovery Act. The following information is also included in the RCRIS_LG Report:
- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s) violated, and any proposed & actual penalties
- Information pertaining to corrective actions undertaken by the facility or EPA
- A complete listing of EPA regulated hazardous wastes which are generated or stored on-site

RCRIS_SG
Date of Data: 05/10/1996
Release Date: 06/10/1996
Date on System: 07/19/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
202/260-4610

Resource Conservation and Recovery Information System - Small Quantity Generators

The RCRIS_SG Report contains information pertaining to facilities which either generate between 100kg and 1000kg of EPA regulated hazardous waste per month, or meet other applicable requirements of the Resource Conservation And Recovery Act. On advice of the U.S. EPA, ERIIS does not report so-called "RCRA Protective Filers." Protective Filers, commonly called Conditionally Exempt Small Quantity Generators (CESQG's), are facilities that have completed RCRA notification paperwork, but are not, in fact, subject to RCRA regulation. The determination of CESQG status is made by the U.S. EPA. The following information is also included in the RCRIS_SG Report:
- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s)

violated, and any proposed & actual penalties
- Information pertaining to corrective actions undertaken by the facility or EPA
- A complete listing of EPA regulated hazardous wastes which are generated or stored on-site.

ERNS
Date of Data: 08/22/1996
Release Date: 08/26/1996
Date on System: 11/22/1996
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
202/260-2342

Emergency Response Notification System

ERNS is a national computer database system that is used to store information concerning the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS Reporting System contains preliminary information on specific releases, including the spill location, the substance released, and the responsible party. Please note that the information in the ERNS Report pertains only to those releases that occured between January 1, 1996 and August 22, 1996.

HWS
Date of Data: 08/08/1995
Release Date: 08/16/1995
Date on System: 11/27/1995
NY Dept. of Environmental Conservation
Hazardous Waste Remediation Division
518/457-0740

New York Inactive Hazardous Waste Disposal Sites

The New York Inactive Hazardous Waste Disposal Sites List contains summary information pertaining to those facilities that are deemed potentially hazardous to the public health and welfare by the New York State Department of Environmental Conservation (NYSDEC).

LRST
Date of Data: 08/15/1996
Release Date: 08/19/1996
Date on System: 10/04/1996
NY Dept. of Environmental Conservation
Spill Prevention and Response Section
518/457-7363

New York Leaking Storage Tanks

The New York Leaking Storage Tank Report is a comprehensive listing of all leaking storage tank cases reported to The New York State Department of Environmental Conservation which have not yet been resolved. The information for the LST Report is extracted from the original spills list provided to ERIIS by the NYSDEC. Information pertaining to leaking storage tank cases which have been resolved can be provided upon request.

SWF
Date of Data: 06/30/1996
Release Date: 08/12/1996
Date on System: 09/20/1996
NY Dept. of Environmental Conservation
Bureau of Solid Waste
518/457-2051

New York Active Solid Waste Facility Register

The New York Solid Waste Facility Register is a comprehensive listing of all active and inactive permitted solid waste landfills and processing facilities within the State of New York.

CBS
Date of Data: 09/16/1996
Release Date: 09/20/1996
Date on System: 10/11/1996
NY Dept. of Environmental Conservation
Spill Prevention and Response Section
518/457-7363

New York Chemical Bulk Storage Tanks

The New York Chemical Bulk Storage Report contains information pertaining to active and inactive facilities that store regulated substances in aboveground storage tanks with capacities of 185 gallons or greater, and/or underground storage tanks of any size.

MOSF
Date of Data: 09/16/1996
Release Date: 09/20/1996
Date on System: 10/18/1996
NY Dept. of Environmental Conservation
Spill Prevention and Response Section
518/457-7363

New York Major Oil Storage Facilities

The Major Oil Storage Facilities Report contains summary information on active and inactive facilities with petroleum storage capacities in excess of four-hundred thousand gallons.

PBS
Date of Data: 09/16/1996
Release Date: 09/20/1996
Date on System: 10/15/1996
NY Dept. of Environmental Conservation
Spill Prevention and Response Section
518/457-7363

New York Petroleum Bulk Storage Tanks

The New York Petroleum Bulk Storage Report is a comprehensive listing of all reported active and inactive facilities that have petroleum storage capacities in excess of 1100 gallons, and less than four hundred thousand gallons. ERIIS has obtained the PBS information from the Delegated Counties in the State of New York. The dates of The information for the specific counties are as follows:

Cortland	06/10/96
Nassau	06/27/96
Rockland	05/15/96
Suffolk	01/12/96

ERIIS SUMMARY OF PLOTTABLE SITES

ERIIS Report #132452A — Dec 13, 1996

ERIIS ID.	FACILITY/ADDRESS	DATABASE	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
	0 - 1/4 Miles				
36008001483	ELMIRA CITY OF ERIE FOUNDRY 500 ERIE ST ELMIRA, NY 14904-1813 COUNTY: CHEMUNG	RCRIS_SG	0.046 Mi	SOUTHEAST	1483
36007001863	A-T-O INC 100 W LA FRANCE ST ELMIRA, NY 14902 COUNTY: CHEMUNG	RCRIS_LG	0.144 Mi	SOUTHEAST	1863
36007008895	SOUTHPORT TOWERS 300 S MAIN ST ELMIRA, NY 14904-1366 COUNTY: CHEMUNG	RCRIS_LG	0.213 Mi	NORTHWEST	8895
36007004398	PARLEY COBURN SCHOOL 216 MOUNT ZOAR ST ELMIRA, NY 14904-1232 COUNTY: CHEMUNG	RCRIS_LG	0.232 Mi	SOUTHWEST	4398
36008002603	MONRO MUFFLER BRAKE #33 211 PENNSYLVANIA AVE ELMIRA, NY 14904-1420 COUNTY: CHEMUNG	RCRIS_SG	0.237 Mi	NORTHEAST	2603
	1/4 - 1/2 Miles				
36059006636	FORMER TIER ONE STOP 101-107 S MAIN ST ELMIRA, NY 14904-1308 COUNTY: CHEMUNG	LRST	0.337 Mi	NORTHWEST	6636

ERIIS ENVIRONMENTAL DATA REPORT
RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM
RCRIS_LG - PLOTTABLE SITES - PAGE 1

ERIIS Report #132452A — Dec 13, 1996

ERIIS ID / EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE / RAATS ACTION/STATUS / RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
36007001863 NYD002944213	A-T-O INC COUNTY: CHEMUNG	100 W LA FRANCE ST ELMIRA, NY 14902	FACILITY NOT REPORTED IN RAATS	0.144 MILES	SOUTHEAST	1863

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	F017	.00000	NOTIFICATION
2.	U220	.00000	NOTIFICATION

ERIIS ID / EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE / RAATS ACTION/STATUS / RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
36007008895 NYD986871705	SOUTHPORT TOWERS COUNTY: CHEMUNG	300 S MAIN ST ELMIRA, NY 14904-1366	FACILITY NOT REPORTED IN RAATS	0.213 MILES	NORTHWEST	8895

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	X002	.00000	NOTIFICATION

ERIIS ID / EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE / RAATS ACTION/STATUS / RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
36007004398 NYD100374446	PARLEY COBURN SCHOOL COUNTY: CHEMUNG	216 MOUNT ZOAR ST ELMIRA, NY 14904-1232	FACILITY NOT REPORTED IN RAATS	0.232 MILES	SOUTHWEST	4398

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	X002	.00000	NOTIFICATION

ERIIS ENVIRONMENTAL DATA REPORT
RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM
RCRIS_SG - PLOTTABLE SITES - PAGE 1

ERIIS Report #132452A — Dec 13, 1996

ERIIS ID / EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE / RAATS ACTION/STATUS / RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
36008001483 NYD065624488	ELMIRA CITY OF ERIE FOUNDRY COUNTY: CHEMUNG	500 ERIE ST ELMIRA, NY 14904-1813	FACILITY NOT REPORTED IN RAATS	0.046 MILES	SOUTHEAST	1483

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	D001	.00000	NOTIFICATION

ERIIS ID / EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE / RAATS ACTION/STATUS / RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
36008002603 NYD162579734	MONRO MUFFLER BRAKE #33 COUNTY: CHEMUNG	211 PENNSYLVANIA AVE ELMIRA, NY 14904-1420	FACILITY NOT REPORTED IN RAATS	0.237 MILES	NORTHEAST	2603

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	D000	.00000	NOTIFICATION
2.	D001	.00000	NOTIFICATION
3.	X001	.00000	NOTIFICATION

ERIIS ID SPILL NO.	TANK NAME	TANK LOCATION	SPILL DATE SPILL SOURCE NATURAL RESOURCE AFFECTED	MAP ID
36059006636 9510564	FORMER TIER ONE STOP DISTANCE FROM SITE: 0.337 MILES DIRECTION FROM SITE: NORTHWEST	101-107 S MAIN ST ELMIRA, NY 14904-1308 COUNTY: CHEMUNG	11/21/1995 NOT SPECIFIED ON LAND	6636

MATERIAL CLASS: PETROLEUM QUANTITY SPILLED: 0 GAL

Unplottable Sites

The remaining report pages list additional environmental sites that have been selected based on geographic criteria unique to your study site. They are classified as "unplottable sites" and require further investigation to assess their potential impact on your site.

How to Evaluate Unplottable Sites

Step 1
Streets Within the Radius: the following page is an alphabetical index of all streets that intersect or are contained within the largest study radius (usually one mile).

Step 2
Cross-Reference: use the "Streets Within the Radius" index to cross-reference the unplottable sites. For example, if Maple Avenue and Oak Avenue are listed in the street index, then any unplottable sites with a Maple Avenue or Oak Avenue address should be checked for possible impact on study site.

Questions on ERIIS' Proprietary Geocoding?

We're happy to answer any questions you might have about our data processing and **point-geocoding** (assigning a latitude and longitude to each address). Just give us a call on our toll-free number at (800) 989-0402 and let us know what state you're calling from. Our customer service staff is available from 8 a.m. to 8 p.m. (EST).

The ASTM Standard Practice For Environmental Site Assessments

As stated in the recently published **Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process** (E1527) by the American Society for Testing and Materials (ASTM):

> "For large databases with numerous facility records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not practically reviewable unless they can be obtained from the source agency in the smaller geographic area of ZIP code (3.3.24)."

Therefore, this Report contains information available by latitude/longitude or by ZIP code. If your research requires environmental records for which only city or county information is available (i.e., no valid street or ZIP code) ERIIS will include this data at no extra charge.

ERIIS Report #132452A

Dec 13, 1996

STREET NAME

E 1st St
W 1st St
E 2nd St
W 2nd St
E 3rd St
W 3rd St
Academy Pl
Albert St
Allen St
Amity St
Apple St
Aspen Ridge Road
Austin Lane
Baldwin St
Balsam St
Baty St
Baylor Road
Beecher St
Birch St
Boardman St
Brady St
Brand St
Broadway
Burdick St
Caldwell Ave
Canton St
Carroll St
Casey St
Catherine St
Charles St
E Chemung Pl
W Chemung Pl
Chester St
Chestnut St
E Church St
W Church St
Cieri St
Clemens Center Pkwy
Coburn St
College Ave
Collins St
Columbia St
Congdon St
Connelly Ave
Cottage Pl
Cypress St
Davis St
Dawn Dr
Decker Ave
Delaware St
Dewitt Ave
Dubois St
Elm St
Erie St
Esty St
Fair St
Fairfield Ave
Fairway Ave
Falck St
Ferris St
Fitzgerald Pl
Florence St
Fox St
Frank St
Franklin St
Friendly Pl
Fulton St
Gaines St
George Pl
Gleason St
E Gray St
W Gray St
E Gridley Pl
W Gridley Pl
Griswold St
Grove St
Hampton Cir
N Hampton Road
S Hampton Road
Harcourt Dr
Harmon St
Harriet St
E Henry St
W Henry St
Herrick St
High St
S Hoffman St
Holdridge St
Home St
Hopkins St
Horner St
Howard St
E Hudson St
W Hudson St
James St
Jay St
Jefferson St
John St
Juanita St
Judson St
Junction St

ERIIS LIST OF STREETS IN THE RADIUS

ERIIS Report #132452A

Dec 13, 1996

STREET NAME

Keefe St
Kinyon St
S Kinyon St
Lake St
Lewis St
Liberty St
Livingston St
Locust St
Lormore St
Luce St
Lyon St
Mackey Pl
Madison Ave
Magee St
Magnolia St
N Main St
S Main St
Maple St
Marion St
E Market St
W Market St
Mc Dowell Pl
Mechanic St
Mid Ave
E Miller St
W Miller St
Milton St
Moore St
Mooreland Ave
Morrow St
Mount Zoar St
Neilly Pl
Newhall St
Newton St
O Brien Pl
O Gorman St
Oak St
Oakley Pl
Orchard St
Overland St
Park Way
Parkside Dr
Partridge St
Pennsylvania Ave
Perine St
Perry St
Phoenix Ave
Pine St
Pleasant St
Pomeroy Pl
Post St
Powell St
Pulford Lane
Race St
Railroad Ave
Rathbun St
Reynolds St
Richard St
Riverside Ave
Robinson St
Schuyler Ave
Seneca Pl
Shepler St
Sly St
Soper St
South Ave
Southport St
Spaulding St
State St
Sullivan St
Sutton St
Sylvester St
Tremaine Pl
Union Pl
Valentine St
Wakeman Pl
Wallace Pl
Walnut St
S Walnut St
Washington St
E Water St
W Water St
West Ave
William St
Willys St
Winsor Ave
E la France St
W la France St

ERIIS SUMMARY OF UNPLOTTABLE SITES
(Facilities sorted alphabetically within ZIP Code)

ERIIS Report #132452A — Dec 13, 1996

ERIS ID.	FACILITY/STREET	CITY/STATE/ZIP/COUNTY	DATABASE
36007007916	CHEMUNG CORR FACILITY INSTITUTION ROAD	SOUTHPORT, NY 14904 COUNTY: CHEMUNG	RCRIS_LG
36039000869	CHEMUNG CORRECTIONAL FACILITY INSTITUTION ROAD	SOUTHPORT, NY 14904 COUNTY: CHEMUNG	NFRAP
36007000073	CHEMUNG COUNTY WASTEWATER FACILITY 600 MILTON ST	ELMIRA, NY 14904-2444 COUNTY: CHEMUNG	RCRIS_LG
36048016536	NYSDOT MAPLE AVENUE	ELMIRA, NY 14904 COUNTY: CHEMUNG	PBS
36001000066	REMINGTON RAND CEDAR ST	SOUTHPORT, NY 14904 COUNTY: CHEMUNG	CERCLIS
36048016925	SOUTHERN TIER AUTO WHOLESALE DEL 79 LOWER MAPLE AVENUE	ELMIRA, NY 14904 COUNTY: CHEMUNG	PBS
36007012573	UNISYS - MCINERNEY FARM SITE CEDAR ST	ELMIRA, NY 14904 COUNTY: CHEMUNG	RCRIS_LG
36018001456	AREA 3 C & D LANDFILL	NY COUNTY: CHEMUNG	SWF
36018001455	CHEMUNG COUNTY AREA 3 C&D	NY COUNTY: CHEMUNG	SWF
36018001453	CHEMUNG COUNTY C&D	NY COUNTY: CHEMUNG	SWF
36018001457	FACET ENTERPRISES	NY COUNTY: CHEMUNG	SWF
36018001470	HORSEHEADS LF (V)	NY COUNTY: CHEMUNG	SWF
36018001467	REMINGTON RAND MACH. DIV.	NY COUNTY: CHEMUNG	SWF
36018001468	TOWNLEY HILL ROAD	NY COUNTY: CHEMUNG	SWF
36018001469	WESTINGHOUSE	NY COUNTY: CHEMUNG	SWF

ERIIS ENVIRONMENTAL DATA REPORT
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY INFORMATION SYSTEM
CERCLIS - UNPLOTTABLE SITES

ERIIS Report #132452A

Dec 13, 1996

ERIIS ID / EPA ID	FACILITY	ADDRESS	COUNTY
36001000066 NYD000511717	REMINGTON RAND	CEDAR ST SOUTHPORT, NY 14904	CHEMUNG

SITE EVENT	START DATE	COMPLETION DATE
DISCOVERY		04/24/80
PRELIMINARY ASSESSMENT		06/25/87
SITE INSPECTION		06/09/95

ERIIS ENVIRONMENTAL DATA REPORT
CERCLIS NO FURTHER REMEDIAL ACTION PLANNED SITES
NFRAP - UNPLOTTABLE SITES

ERIIS Report #132452A

Dec 13, 1996

ERIIS ID / EPA ID	FACILITY	FACILITY ADDRESS
36039000869 NYD982531840	CHEMUNG CORRECTIONAL FACILITY COUNTY: CHEMUNG	INSTITUTION ROAD SOUTHPORT, NY 14904

SITE EVENT(S)	COMPLETE DATE
DISCOVERY	04/19/88
PRELIMINARY ASSESSMENT	09/30/92
SCREENING SITE INSPECTION	06/30/93

ERIIS ENVIRONMENTAL DATA REPORT
RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM
RCRIS_LG - UNPLOTTABLE SITES

ERIIS Report #132452A — Dec 13, 1996

ERIIS ID / EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE / RAATS ACTION/STATUS / RAATS PENALTIES
36007007916 NYD982277089	CHEMUNG CORR FACILITY COUNTY: CHEMUNG	INSTITUTION ROAD SOUTHPORT, NY 14904	FACILITY NOT REPORTED IN RAATS

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	D000	.00000	NOTIFICATION
2.	D001	.00000	NOTIFICATION
3.	F003	.00000	NOTIFICATION
4.	F024	.00000	NOTIFICATION
5.	X002	.00000	NOTIFICATION

36007012573 NYD987035482	UNISYS - MCINERNEY FARM SITE COUNTY: CHEMUNG	CEDAR ST ELMIRA, NY 14904	FACILITY NOT REPORTED IN RAATS

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	X002	.00000	NOTIFICATION

36007000073 NYD000688879	CHEMUNG COUNTY WASTEWATER FACILITY COUNTY: CHEMUNG	600 MILTON ST ELMIRA, NY 14904-2444	FACILITY NOT REPORTED IN RAATS

HAZARDOUS WASTES

	WASTE CODE:	AMOUNT OF WASTE:	SOURCE OF INFO:
1.	D000	.00000	NOTIFICATION
2.	D006	.00000	NOTIFICATION
3.	D007	.00000	NOTIFICATION
4.	D008	.00000	NOTIFICATION
5.	D009	.00000	NOTIFICATION
6.	X002	.00000	NOTIFICATION
7.	D000	.00100 POUNDS	PART A
8.	D006	6.89400 POUNDS	PART A
9.	D007	501.82800 POUNDS	PART A
10.	D008	297.62100 POUNDS	PART A
11.	D009	.00100 POUNDS	PART A

ERIIS ENVIRONMENTAL DATA REPORT
NEW YORK SOLID WASTE FACILITIES
SWF - UNPLOTTABLE SITES

ERIIS Report #132452A

Dec 13, 1996

ERIIS ID FACILITY ID FACILITY	OPERATOR NAME FACILITY ADDRESS PHONE NO.	PERMIT NO. ISSUE DATE	REGULATORY STATUS	FACILITY ACTIVITY WASTE TYPE
36018001453 08D01 CHEMUNG COUNTY C&D	RALPH W JILSON NOT REPORTED NY COUNTY: CHEMUNG	0 NOT REPORTED	CLOSURE ORDER	CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL DEMOLITION
36018001455 08D03 CHEMUNG COUNTY AREA 3 C&D	NOT REPORTED NY COUNTY: CHEMUNG	8072800004000060 NOT REPORTED	CONSTRUCTION	CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL
36018001456 08D04 AREA 3 C & D LANDFILL	NOT REPORTED NY COUNTY: CHEMUNG	8072800004000070 NOT REPORTED	PERMIT	CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL DEMOLITION
36018001457 08D70 FACET ENTERPRISES	NOT REPORTED NY COUNTY: CHEMUNG	0 NOT REPORTED	NONE	CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL
36018001467 08S70 REMINGTON RAND MACH. DIV.	NOT REPORTED NY COUNTY: CHEMUNG	0 NOT REPORTED	NONE	MIXED SOLID WASTE LANDFILL
36018001468 08S71 TOWNLEY HILL ROAD	NOT REPORTED NY COUNTY: CHEMUNG	0 NOT REPORTED	NONE	MIXED SOLID WASTE LANDFILL
36018001469 08S72 WESTINGHOUSE	NOT REPORTED NY COUNTY: CHEMUNG	0 NOT REPORTED	NONE	MIXED SOLID WASTE LANDFILL
36018001470 08S73 HORSEHEADS LF (V)	NOT REPORTED NY COUNTY: CHEMUNG	0 NOT REPORTED	NONE	MIXED SOLID WASTE LANDFILL

ERIIS ENVIRONMENTAL DATA REPORT
NEW YORK PETROLEUM BULK STORAGE FACILITIES
PBS - UNPLOTTABLE SITES

ERIIS Report #132452A — Dec 13, 1996

ERIIS ID / PBS NO. / CBS NO.	FACILITY / ADDRESS	CONTACT NAME / PHONE	SITE STATUS / FACILITY TYPE	NO. OF TANKS / CAPACITY (GAL)	CERTIFICATE DATE / EXPIRATION DATE
36048016536 8-389722	NYSDOT MAPLE AVENUE ELMIRA, NY 14904	BERNIE COHAN (607) 687-3730	INACTIVE	0 0	07/10/1987 07/10/1992

TANK ID	INSTALL DATE	CAPACITY (GALLONS)	PRODUCT STORED	TANK STATUS	TANK TYPE	TANK LOCATION
65A	12/49	1000	LEADED GASOLINE	CLOSED BEFORE APRIL 1, 1991	STEEL/CARBON STEEL	UNDERGROUND
65B	12/49	1000	UNLEADED GASOLINE	CLOSED BEFORE APRIL 1, 1991	STEEL/CARBON STEEL	UNDERGROUND
65C	12/49	1000	DIESEL	CLOSED BEFORE APRIL 1, 1991	STEEL/CARBON STEEL	UNDERGROUND
65J	12/49	300	KEROSENE	CLOSED BEFORE APRIL 1, 1991	STEEL/CARBON STEEL	ABOVEGROUND

36048016925 8-426091	SOUTHERN TIER AUTO WHOLESALE DEL 79 LOWER MAPLE AVENUE ELMIRA, NY 14904	DONALD W COOKE JR (607) 733-9916	INACTIVE OTHER RETAIL SALES	0 0	12/14/1987 12/14/1992

TANK ID	INSTALL DATE	CAPACITY (GALLONS)	PRODUCT STORED	TANK STATUS	TANK TYPE	TANK LOCATION
001	00/00	2000	UNLEADED GASOLINE	CLOSED - REMOVED	STEEL/CARBON STEEL	UNDERGROUND
002	00/00	2000	UNLEADED GASOLINE	CLOSED - REMOVED	STEEL/CARBON STEEL	UNDERGROUND
003	00/00	1000	UNLEADED GASOLINE	CLOSED - REMOVED	STEEL/CARBON STEEL	UNDERGROUND
004	00/00	500	KEROSENE	CLOSED - REMOVED	STEEL/CARBON STEEL	UNDERGROUND

EPA HAZARDOUS WASTE NUMBERS -- HAZARDOUS WASTE DESCRIPTION

D001 -- A solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in Subpart D.

D002 -- A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in Subpart D.

D003 -- A solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in Subpart D.

EPA HW #	CAS #	COMMON CHEMICAL NAME
D004	7740-38-2	ARSENIC
D005	7740-39-3	BARIUM
D006	7440-43-9	CADMIUM
D007	7440-47-3	CHROMIUM
D008	7439-92-1	LEAD
D009	7439-97-6	MERCURY
D010	7782-49-2	SELENIUM
D011	7440-22-4	SILVER
D012	72-20-8	ENDRIN
D013	58-89-9	LINDANE
D014	72-43-5	METHOXYCHLOR
D015	8001-35-2	TOXAPHENE
D016	94-75-7	2,4-D
D017	93-72-1	2,4,5-TP(SILVEX)
D018	71-39-2	BENZENE
D019	56-23-5	CARBON TETRACHLORIDE
D020	57-74-9	CHLORDANE
D021	108-90-7	CHLOROBENZENE
D022	67-66-3	CHLOROFORM
D023	95-48-7	O-CRESOL
D024	108-39-4	M-CRESOL
D025	106-44-5	P-CRESOL
D026		CRESOL
D027	106-46-7	1,4-DICHLOROBENZENE
D028	107-06-2	1,2-DICHLOROETHANE
D029	75-35-4	1,1-DICHLOROETHYLENE
D030	121-14-2	2,4-DINITROTOLUENE
D031	76-44-8	HEPTACHLOR (AND ITS EPOXIDE)
D032	118-74-1	HEXACHLOROBENZENE
D033	87-68-3	HEXACHLOROBUTADIENE
D034	67-72-1	HEXACHLOROETHANE
D035	78-93-3	METHYL ETHYL KETONE
D036	98-95-3	NITROBENZENE
D037	87-86-5	PENTACHLOROPHENOL
D038	110-86-1	PYRIDINE
D039	127-18-4	TETRACHLOROETHYLENE
D040	79-01-6	TRICHLOROETHYLENE
D041	95-95-4	2,4,5-TRICHLOROPHENOL
D042	88-06-2	2,4,6-TRICHLOROPHENOL
D043	75-01-4	VINYL CHLORIDE

EPA HAZARDOUS WASTE NUMBERS -- HAZARDOUS WASTE DESCRIPTION

F001 -- The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F002 -- The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F003 -- The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F004 -- The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene: all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogentaed solvents or those solvents listed in FOO1, FOO2, and FOO5; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F005 -- The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in FOO1, F002, or FOO4; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F006 -- Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.

F007 -- Spent cyanide plating bath solutions from electroplating operations.

F008 -- Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.

EPA HAZARDOUS WASTE NUMBERS -- HAZARDOUS WASTE DESCRIPTION

F009 -- Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.

F010 -- Quenching bath residue from oil baths from metal heat treating operations where cyanides are used in the process.

F011 -- Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.

F012 -- Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.

F019 -- Wastewater treatment sludges from the chemical conversion coating of aluminum.

F020 -- Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.)

F021 -- Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.

F022 -- Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.

F023 -- Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5- trichlorophenol.)

F024 -- Wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent dessicants, wastewater, wastewater treatment sludges, spend catalysts, and wastes listed in §261.32.)

F026 -- Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.

F027 -- Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)

EPA HAZARDOUS WASTE NUMBERS -- HAZARDOUS WASTE DESCRIPTION

F028 -- Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.

K001 -- Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.

K002 -- Wastewater treatment sludge from the production of chrome yellow and orange pigments.

K003 -- Wastewater treatment sludge from the production of molybdate orange pigments.

K004 -- Wastewater treatment sludge from the production of zinc yellow pigments.

K005 -- Wastewater treatment sludge from the production of chrome green pigments.

K006 -- Wastewater treatment sludge from the production of chrome oxide greenpigments (anhydrous and hydrated).

K007 -- Wastewater treatment sludge from the production of iron blue pigments.

K008 -- Oven residue from the production of chrome oxide green pigments.

K009 -- Distillation bottoms from the production of acetaldehyde from ethylene.

K010 -- Distillation side cuts from the production of acetaldehyde from ethylene.

K011 -- Bottom stream from the wastewater stripper in the production of acrylonitrile.

K013 -- Bottom stream from the acetonitrile column in the production of acrylonitrile.

K014 -- Bottoms from the acetonitrile purification column in the production of acrylonitrile.

K015 -- Still bottoms from the distillation of benzyl chloride.

K016 -- Heavy ends or distillation residues from the production of carbon tetrachloride.

K017 -- Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.

K018 -- Heavy ends from the fractionation columnn in ethyl chloride production.

K019 -- Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.

K020 -- Heavy ends from the distillation of vinly chloride in vinly chloride monomer production.

K021 -- Aqueous spend antimony catalyst waste from fluoromethane production.

K022 -- Distillation bottom tars from the production of phenol/acetone from cumene.

K023 -- Distillation light ends from the production of phthalic anhydride from naphthalene.

EPA HAZARDOUS WASTE NUMBERS -- HAZARDOUS WASTE DESCRIPTION

K024 -- Distillation bottoms from the production of phthalic anhydride from naphthalene.

K025 -- Distillation bottoms from the production of nitrobenxene by the nitration of benzene.

K026 -- Stripping still tails from the production of methyl ethyl pyridines.

K027 -- Centrifuge and distillation residues from toluene diisocyanate production.

K028 -- Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.

K029 -- Wastes from the product steam stripper in the production of 1,1,1-trichloroethane.

K030 -- Column bottoms or heavy ends from the combined production of trichloroethtlene and perchloroethtlene.

K031 -- By-product salts generated in the production of MSMA and cacodylic acid.

K032 -- Wastewater treatment sludge from the production of chlordane.

K033 -- Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.

K034 -- Filter solids from the filtration of hexachlorocyclopentadiene in the prodution of chlordane.

K035 -- Wastewater treatment sludges generated in the production of creosote.

K036 -- Still bottoms from toluene reclamation distillation in the production of disulfoton.

K037 -- Wastewater treatment sludges from the production of disulfoton,

K038 -- Wastewater from the washing and stripping of phorate production.

K039 -- Filter cake from the filtration of diethylphosphorodithioic acid in the productionof phorate.

K040 -- Wastewater treatment sludge from the production of phorate.

K041 -- Wastewater treatment sludge from the production of toxaphene.

K071 -- Brine purification muds from the mercury cell process in chlorine production, where separatelty prepurified brine is not used.

K073 -- Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.

K083 -- Distillation bottoms from aniline production.

EPA HAZARDOUS WASTE NUMBERS -- HAZARDOUS WASTE DESCRIPTION

K085 -- Distillation or fractionation column bottoms from the production of chlorobenzenes.

K093 -- Distillation light ends from the production of phthalic anhydride from ortho-xylene.

K095 -- Distillation bottoms from the production of 1,1,1-trichloroethane.

K096 -- Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.

K097 -- Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.

K098 -- Untreated process wastewater from the production of toxaphene.

K103 -- Process residues from aniline extraction from the production of aniline.

K104 -- Combined wastewater streams generated from nitrobenzene/aniline production,

K105 -- Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.

K106 - Wastewater treatment sludge from the mercury cell process in chlorine production.

K111 - Product washwaters from the production of dinitrotoluene via nitration of toluene.

K112 -- Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.

K113 -- Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.

K114 -- Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.

K115 -- Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.

K116 -- Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.

K117 -- Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.

K118 -- Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.

K136 -- Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
F027	88-06-2	2,4,6-TRICHLOROPHENOL
F027	58-90-2	2,3,4,6-TETRACHLOROPHENOL
F027	95-95-4	2,4,5-TRICHLOROPHENOL
F027	87-86-5	PENTACHLOROPHENOL
F027	93-76-5	2,4,5-TRICHLOROPHENOXYACETIC ACID
F027	93-72-1	SILVEX
P002	591-08-28	1-ACETYL-2-THIOUREA
P003	107-02-88	ACROLEIN
P001	81-81-2	WARFARIN
P004	309-00-28	ALDRIN
P005	107-18-68	ALLYL ALCOHOL
P006	20859-73-8	ALUMINUM PHOSPHIDE
P007	2763-96-4	MUSCIMOL
P008	504-24-58	PYRIDINE, 4-AMINO
P010	7778-39-4	ARSENIC ACID
P011	1303-28-2	ARSENIC PENTOXIDE, SOLID
P012	1327-53-3	ARSENIC TRIOXIDE, SOLID
P013	542-62-18	BARIUM CYANIDE, SOLID
P014	108-98-58	PHENYL MERCAPTAN
P015	7440-41-7	BERYLLIUM
P016	542-88-18	BIS(CHLOROMETHYL)ETHER
P017	598-31-28	BROMOACETONE
P018	357-57-38	BRUCINE
P020	88-85-7	DINOSEB
P021	592-01-88	CALCIUM CYANIDE, SOLID
P022	75-15-0	CARBON DISULFIDE
P023	107-20-08	CHLOROACETALDEHYDE
P024	106-47-88	P-CHLOROANILINE
P026	5344-82-1	1-(0-CHLOROPHENYL) THIOUREA
P027	542-76-78	3-CHLOROPROPIONITRILE
P028	100-44-78	BENZYL CHLORIDE
P029	544-92-38	CUPROUS CYANIDE
P030	57-12-5	CYANIDES (SOLUBLE SALTS AND COMPLEXES)
P031	460-19-58	CYANOGEN
P033	506-77-48	CYANOGEN CHLORIDE, INHIBITED
P034	131-89-58	4,6-DINITRO-0-CYCLOHEXYLPHENOL
P036	696-28-68	DICHLOROPHENYLARSINE
P037	60-57-1	DIELDRIN
P038	692-42-28	DIETHYLARSINE
P039	298-04-48	DISULFOTON
P040	297-97-28	THIONAZIN
P041	311-45-58	DIETHYL P-NITROPHENYL PHOSPHATE
P042	51-43-4	EPINEPHRINE
P043	55-91-4	ISOFLUROPHATE
P044	60-51-5	DIMETHOATE
P045	39196-18-4	THIOFANOX
P046	122-09-88	ALPHA, ALPHA-DIMETHYLPHENETHYLAMINE
P047	534-52-18	DINITRO-ORTHO-CRESOL

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
P048	51-28-5	2,4-DINITROPHENOL
P049	541-53-78	2,4-DITHIOBIURET
P050	115-29-78	ENDOSULFAN
P051	72-20-8	ENDRIN
P054	151-56-48	ETHYLENEIMINE
P056	7782-41-4	FLUORINE
P057	640-19-78	FLUORACETAMIDE
P058	62-74-8	SODIUM FLUOROACETATE
P059	76-44-8	HEPTACHLOR
P060	465-73-68	ISODRIN
P062	757-58-48	HEXAETHYL TETRAPHOSPHATE
P063	74-90-8	HYDROGEN CYANIDE, ANHYDROUS, STABILIZED
P064	624-83-98	METHYL ISOCYANATE
P065	628-86-48	MERCURY FULMINATE
P066	16752-77-5	METHOMYL
P067	75-55-8	PROPYLENE IMINE
P068	60-34-4	METHYL HYDRAZINE
P069	75-86-5	ACETONE CYANOHYDRIN
P071	298-00-08	METHYL PARATHION
P072	86-88-4	THIOUREA, 1-NAPHTHALENYL-(ANTU)
P073	13463-39-3	NICKEL CARBONYL
P074	557-19-78	NICKEL CYANIDE
P075	54-11-5	NICOTINE
P076	10102-43-9	NITRIC OXIDE
P077	100-01-68	P-NITROANILINE
P078	10102-44-0	NITROGEN DIOXIDE
P081	55-63-0	NITROGLYCERIN
P082	62-75-9	N-NITROSODIMETHYLAMINE
P084	4549-40-0	N-NITROSOMETHYLVINYLAMINE
P085	152-16-98	SCHRADAN
P087	20816-12-0	OSMIUM TETROXIDE
P088	145-73-38	ENDOTHAL
P089	56-38-2.	PARATHION
P092	62-38-4	PHENYLMERCURIC ACETATE
P093	103-85-58	PHENYLTHIOUREA
P094	298-02-28	PHORATE
P095	75-44-5	PHOSGENE
P096	7803-51-2	PHOSPHINE
P097	52-85-7	FAMPHUR
P098	151-50-88	POTASSIUM CYANIDE
P099	506-61-68	POTASSIUM SILVER CYANIDE
P100	107-12-08	ETHYL CYANIDE
P101	107-12-08	PROPIONITRILE
P102	107-19-78	PROPARGYL ALCOHOL
P103	630-10-48	SELENOUREA
P104	506-64-98	SILVER CYANIDE
P105	26628-22-8	SODIUM AZIDE (NA(N3))

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
P106	143-33-98	SODIUM CYANIDE (NA(CN))
P108	57-24-9	STRYCHNINE
P109	3689-24-5	SULFOTEP
P110	78-00-2	TETRAETHYL LEAD
P111	107-49-38	TETRAETHYL PYROPHOSPHATE
P112	509-14-88	TETRANITROMETHANE
P113	1314-32-5	THALLIC OXIDE
P114	12039-52-0	SELENIOUS ACID, DITHALLIUM(1 +) SALT
P115	7446-18-6	THALLOUS SULFATE
P116	79-19-6	THIOSEMICARBAZIDE
P119	7803-55-6	AMMONIUM METAVANADATE
P120	1314-62-1	VANADIUM PENTOXIDE
P121	557-21-18	ZINC CYANIDE
P122	1314-84-7	ZINC PHOSPHIDE
P123	8001-35-2	TOXAPHENE
U001	75-07-0	ACETALDEHYDE
U002	67-64-1	ACETONE
U003	75-05-8	ACETONITRILE
U004	98-86-2	ACETOPHENONE
U005	53-96-3	2-ACETYLAMINOFLUORENE
U006	75-36-5	ACETYL CHLORIDE
U007	79-06-1	ACRYLAMIDE
U008	79-10-7	ACRYLIC ACID
U009	107-13-18	ACRYLONITRILE, INHIBITED
U010	50-07-7	MITOMYCIN C
U011	61-82-5	AMITROLE
U012	62-53-3	ANILINE
U014	492-80-88	C.I. SOLVENT YELLOW 34
U015	115-02-68	AZASERINE
U016	225-51-48	BENZ[C]ACRIDINE
U017	98-87-3	BENZAL CHLORIDE
U018	56-55-3	BENZ[A]ANTHRACENE
U019	71-43-2	BENZENE
U020	98-09-9	BENZENESULFONYL CHLORIDE
U021	92-87-5	BENZIDINE
U022	50-32-8	BENZO[A]PYRENE
U023	98-07-7	BENZOIC TRICHLORIDE
U024	111-91-18	BIS(2-CHLOROETHOXY)METHANE
U025	111-44-48	2,2'-DICHLOROETHYL ETHER
U026	494-03-18	CHLORNAPHAZINE
U027	108-60-18	BIS(2-CHLOROISOPROPYL)ETHER
U028	117-81-78	DI-(2-ETHYLHEXYL)PHTHALATE
U029	74-83-9	METHYL BROMIDE
U030	101-55-38	4-BROMOPHENYL PHENYL ETHER
U031	71-36-3	N-BUTYL ALCOHOL
U032	13765-19-0	CALCIUM CHROMATE
U033	353-50-48	CARBONIC DIFLUORIDE
U034	75-87-6	ACETALDEHYDE, TRICHLORO-

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
U035	305-03-38	CHLORAMBUCIL
U036	57-74-9	CHLORDANE
U037	108-90-78	CHLOROBENZENE
U038	510-15-68	CHLOROBENZILATE
U039	59-50-7	4-CHLORO-M-CRESOL
U041	106-89-88	EPICHLOROHYDRIN
U042	110-75-88	2-CHLOROETHYL VINYL ETHER
U043	75-01-4	VINYL CHLORIDE
U044	67-66-3	CHLOROFORM
U045	74-87-3	METHYL CHLORIDE
U046	107-30-28	CHLOROMETHYL METHYL ETHER
U047	91-58-7	BETA-CHLORONAPHTHALENE
U048	95-57-8	0-CHLOROPHENOL
U049	3165-93-3	4-CHLORO-O-TOLUIDINE HYDROCHLORIDE
U050	218-01-98	1,2-BENZPHENANTHRENE
U051	8021-39-4	WOOD CREOSOTE
U052	1319-77-3	CRESOL
U053	4170-30-3	CROTONALDEHYDE
U055	98-82-8	CUMENE
U056	110-82-78	CYCLOHEXANE
U057	108-94-18	CYCLOHEXANONE
U058	50-18-0	CYCLOPHOSPHAMIDE
U059	20830-81-3	DAUNOMYCIN
U060	72-54-8	1,1-DICHLORO-2,2-BIS (P-CHLOROPHENYL)ETHANE
U061	50-29-3	DICHLORODIPHENYLTRICHLOROETHANE
U062	2303-16-4	DIALLATE
U063	53-70-3	DIBENZ(A,H)ANTHRACENE
U064	189-55-98	DIBENZO(A,I)PYRENE
U066	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE
U067	106-93-48	ETHYLENE DIBROMIDE
U068	74-95-3	METHYLENE BROMIDE
U069	84-74-2	DIBUTYL PHTHALATE
U070	95-50-1	0-DICHLOROBENZENE, LIQUID
U071	541-73-18	M-DICHLOROBENZENE
U072	106-46-78	P-DICHLOROBENZENE
U073	91-94-1	3,3'-DICHLOROBENZIDINE
U074	764-41-08	1,4-DICHLORO-2-BUTENE (I,T)
U075	75-71-8	DICHLORODIFLUOROMETHANE
U076	75-34-3	1,1-DICHLOROETHANE
U077	107-06-28	ETHYLENE DICHLORIDE
U078	75-35-4	VINYLIDENE CHLORIDE
U079	156-60-58	TRANS-1,2-DICHLOROETHYLENE
U080	75-09-2	DICHLOROMETHANE
U081	120-83-28	2,4-DICHLOROPHENOL
U082	87-65-0	2,6-DICHLOROPHENOL
U083	78-87-5	PROPYLENE DICHLORIDE
U084	542-75-68	1,3-DICHLOROPHENOL

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
U085	1464-53-5	2,2-BIOXIRANE
U086	1615-80-1	1,2-DIETHYLHYDRAZINE
U087	3288-58-2	0,0-DIETHYL S-METHYL DITHIOPHOSPHATE
U088	84-66-2	DIETHYL PHTHALATE
U089	56-53-1	DIETHYLSTILBESTROL
U090	94-58-6	DIHYDROSAFROLE
U091	119-90-48	3,3'-DIMETHOXYBENZIDINE
U092	124-40-38	DIMETHYLAMINE, ANHYDROUS
U093	60-11-7	4-DIMETHYLAMINOAZOBENZENE
U094	57-97-6	7,12-DIMETHYLBENZ(A)ANTHRACENE
U095	119-93-78	3,3'-DIMETHYLBENZIDINE
U096	80-15-9	CUMENE HYDROPEROXIDE
U097	79-44-7	DIMETHYLCARBAMOYL CHLORIDE
U099	540-73-88	1,2-DIMETHYLHYDRAZINE
U101	105-67-98	2,4-XYLENOL
U102	131-11-38	DIMETHYL PHTHALATE
U103	77-78-1	DIMETHYL SULFATE
U105	121-14-28	2,4-DINITROTOLUENE
U106	606-20-28	2,6-DINITROTOLUENE
U107	117-84-08	DIOCTYL PHTHALATE
U108	123-91-18	1,4-DIOXANE
U109	122-66-78	1,2-DIPHENYLHYDRAZINE
U110	142-84-78	DIPROPYLAMINE
U111	621-64-78	N-NITROSODI-N-PROPYLAMINE
U112	141-78-68	ETHYL ACETATE
U113	140-88-58	ETHYL ACRYLATE
U114	111-54-68	ETHYLENEBIS(DITHIOCARBAMIC ACID)
U115	75-21-8	ETHYLENE OXIDE
U116	96-45-7	ETHYLENE THIOUREA
U117	60-29-7	ETHYL ETHER
U118	97-63-2	ETHYL METHACRYLATE
U119	62-50-0	ETHYL METHANESULFONATE
U120	206-44-08	FLUORANTHENE
U121	75-69-4	FLUOROTRICHLOROMETHANE
U122	50-00-0	FORMALDEHYDE GAS
U123	64-18-6	FORMIC ACID
U124	110-00-98	FURAN
U125	98-01-1	FURFURAL
U126	765-34-48	GLYCIDALDEHYDE
U127	118-74-18	HEXACHLOROBENZENE
U128	87-68-3	HEXACHLOROBUTADIENE
U129	58-89-9	LINDANE
U130	77-47-4	HEXACHLOROCYCLOPENTADIENE
U131	67-72-1	HEXACHLOROETHANE
U132	70-30-4	HEXACHLOROPHENE
U133	302-01-28	HYDRAZINE, ANHYDROUS

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
U134	7664-39-3	HYDROGEN FLUORIDE SOLUTION
U134	7664-39-3	HYDROGEN FLUORIDE
U135	7783-06-4	HYDROGEN SULFIDE
U136	75-60-5	CACODYLIC ACID
U137	193-39-58	INDENO(1,2,3-CD)PYRENE
U138	74-88-4	METHYL IODIDE
U139	9004-66-4	IRON DEXTRAN COMPLEX
U140	78-83-1	ISOBUTYL ALCOHOL
U141	120-58-18	ISOSAFROLE
U142	143-50-08	CHLORDECONE
U143	303-34-48	LASIOCARPINE
U144	301-04-28	LEAD ACETATE
U145	7446-27-7	LEAD PHOSPHATE
U146	1335-32-6	LEAD SUBACETATE
U147	108-31-68	MALEIC ANHYDRIDE
U148	123-33-18	MALEIC HYDRAZIDE
U149	109-77-38	MALONONITRILE
U150	148-82-38	MELPHALAN
U151	7439-97-6	MERCURY
U152	126-98-78	METHACRYLONITRILE
U153	74-93-1	METHYL MERCAPTAN
U154	67-56-1	METHYL ALCOHOL
U155	91-80-5	METHAPYRILENE
U156	79-22-1	METHYL CHLOROFORMATE
U157	56-49-5	3-METHYLCHOLANTHRENE
U158	101-14-48	4,4'-METHYLENEBIS(2-CHLOROBENZENAMINE)
U159	78-93-3	METHYL ETHYL KETONE
U160	1338-23-4	2-BUTANONE PEROXIDE
U161	108-10-18	METHYL ISOBUTYL KETONE
U162	80-62-6	METHYL METHACRYLATE, INHIBITED
U163	70-25-7	N-METHYL-N'-NITRO-N-NITROSOGUANIDINE
U164	56-04-2	METHYLTHIOURACIL
U165	91-20-3	NAPHTHALENE
U166	130-15-48	1,4-NAPHTHOQUINONE
U167	134-32-78	ALPHA-NAPHTHYLAMINE
U168	91-59-8	BETA-NAPHTHYLAMINE
U169	98-95-3	NITROBENZENE, LIQUID
U170	100-02-78	P-NITROPHENOL
U171	79-46-9	2-NITROPROPANE
U172	924-16-38	N-NITROSODI-N-BUTYLAMINE
U173	1116-54-7	N-NITROSODIETHANOLAMINE
U174	55-18-5	ETHANAMINE,N-ETHYL-N-NITROSO-
U176	759-73-98	N-NITROSO-N-ETHYLUREA
U177	684-93-58	N-NITROSO-N-METHYLUREA
U178	615-53-28	N-NITRO-N-METHYLURETHANE
U179	100-75-48	N-NITROSOPIPERIDINE
U180	930-55-28	N-NITROSOPYRROLIDINE
U181	99-55-8	5-NITRO-O-TOLUIDINE

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
U182	123-63-78	PARALDEHYDE
U183	608-93-58	PENTACHLOROBENZENE
U184	76-01-7	PENTACHLOROETHANE
U185	82-68-8	PENTACHLORONITROBENZENE
U186	504-60-98	1,3-PENTADIENE
U187	62-44-2	PHENACETIN
U188	108-95-28	PHENOL
U189	1314-80-3	PHOSPHOROUS PENTASULFIDE
U190	85-44-9	PHTHALIC ANHYDRIDE
U191	109-06-88	2-PICOLINE
U192	23950-58-5	PRONAMIDE
U193	1120-71-4	PROPANE SULTONE
U194	107-10-88	PROPYLAMINE
U196	110-86-18	PYRIDINE
U197	106-51-48	QUINONE
U200	50-55-5	RESERPINE
U201	108-46-38	RESORCINOL
U202	81-07-2	SACCHARIN
U203	94-59-7	SAFROLE
U204	7783-00-8	SELENIOUS ACID
U205	7488-56-4	SELENIUM DISULFIDE
U206	18883-66-4	STREPTOZOTOCIN
U207	95-94-3	1,2,4,5-TETRACHLOROBENZENE
U208	630-20-68	1,1,1,2-TETRACHLOROETHANE
U209	79-34-5	1,1,2,2-TETRACHLOROETHANE
U210	127-18-48	TETRACHLOROETHYLENE
U211	56-23-5	CARBON TETRACHLORIDE
U212	58-90-2	2,3,4,6-TETRACHLOROPHENOL
U213	109-99-98	TETRAHYDROFURAN
U214	563-68-88	THALLIUM ACETATE
U215	6533-73-9	THALLOUS CARBONATE
U216	7791-12-0	THALLIUM CHLORIDE
U217	10102-45-1	THALLIUM NITRATE
U218	62-55-5	THIOACETAMIDE
U219	62-56-6	THIOUREA
U220	108-88-38	TOLUENE
U221	25376-45-8	TOLUENEDIAMINE
U222	636-21-58	O-TOLUIDINE HYDROCHLORIDE
U223	26471-62-5	TOLUENE DIISOCYANATE (MIXED ISOMERS)
U225	75-25-2	BROMOFORM
U226	71-55-6	METHYL CHLOROFORM
U227	79-00-5	1,1,2-TRICHLOROETHANE
U228	79-01-6	TRICHLOROETHYLENE
U230	88-06-2	2,4,6-TRICHLOROPHENOL
U232	93-76-5	2,4,5-T ACID
U233	93-72-1	SILVEX (2,4,5-TP)
U234	99-35-4	1,3,5-TRINITROBENZENE

EPA HAZARDOUS WASTE NUMBERS -- COMMON CHEMICAL NAME

EPA HW #	CAS #	COMMON CHEMICAL NAME
U235	126-72-78	TRIS
U236	72-57-1	TRYPAN BLUE
U237	66-75-1	URACIL MUSTARD
U238	51-79-6	URETHANE
U239	95-47-6	O-XYLENE
U239	106-42-38	P-XYLENE
U239	108-38-38	M-XYLENE
U239	1330-20-7	XYLENE (MIXED ISOMERS)
U239	95-47-6	BENZENE, O-DIMETHYL-
U239	106-42-38	BENZENE, P-DIMETHYL-
U239	108-38-38	BENZENE, M-DIMETHYL-
U240	94-75-7	2,4-DICHLOROPHENOXYACETIC ACID
U242	87-86-5	PENTACHLOROPHENOL
U243	1888-71-7	HEXACHLOROPROPENE
U244	137-26-88	THIRAM
U246	506-68-38	CYANOGEN BROMIDE
U247	72-43-5	METHOXYCHLOR
U248	506-68-38	CYANOGEN BROMIDE
U249	1314-84-7	ZINC PHOSPHIDE (CONC. < = 10%)
U328	95-53-4	O-YOLUIDINE
U353	106-49-08	P-TOLUIDINE
U359	110-80-58	2-ETHOXYETHANOL

ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES
AERIAL PHOTOGRAPH SEARCH REPORT

The following sources have reported aerial photo coverage for the subject site USGS topoquad.
For site-specific photo availablity and ordering, please call the individual source agency or call
AIC at 1-800-945-9509 or fax this page to AIC at 512-478-5215.

ERIIS Report #132452A

VENDOR NAME | STREET | STATE | ZIP | PHONE

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE | AERAIL PHOTOGRAPHY FIELD OFFICE P O BOX 30010 | UT | 84130-0010 | (801) 975-3503

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1955 JUL 05	VERTICAL CARTO (IMPLIES STEREO)	ARS	20000	8.25in OR 210mm	B&W	0%	100%	01
1964 SEP 08	VERTICAL CARTO (IMPLIES STEREO)	ARS	20000	12.00in OR	B&W	0%	100%	04
1976 AUG 04	VERTICAL CARTO (IMPLIES STEREO)		40000	6.00in OR 152mm	B&W	0%	100%	04
1990	VERTICAL CARTO (IMPLIES STEREO)	36000	0040000	6.00in OR 152mm	B&W	0%	100%	ASCS NEW YORK

U S AIR FORCE DEPT OF THE AIR FORCE EDC | (800) USA-MAPS

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1959 OCT 18	VERTICAL CARTO (IMPLIES STEREO)	59035	60000	UNKOWN	B&W	0%	100%	1 0950174

U S ARMY DEPT OF THE ARMY EDC | (800) USA-MAPS

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1957 MAY 06	VERTICAL CARTO (IMPLIES STEREO)	550	60000	UNKOWN	B&W	0%	100%	1 560940845

U S GEOLOGICAL SURVEY RESTON ESIC | 507 NATIONAL CENTER | VA | 22092 | (703) 648-5920

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1968 MAR 30	VERTICAL CARTO (IMPLIES STEREO)	VBUO	23984	OTHER	B&W	0%	100%	
1944 AUG 25	VERTICAL CARTO (IMPLIES STEREO)	AW	16300	OTHER	B&W	0%	100%	
1948 MAY 15	VERTICAL CARTO (IMPLIES STEREO)	FP	16400	OTHER	B&W	0%	100%	
1986 APR 01	VERTICAL CARTO (IMPLIES STEREO)	N4276	58000	OTHER	COLOR	0%	100%	
1986 APR 01	VERTICAL CARTO (IMPLIES STEREO)	N4276	80000	OTHER	B&W	0%	100%	
1988 NOV	SLAR	RADELM	0250000	OTHER	B&W	UNK	100%	ELMIRA N75W
1988	VERTICAL CARTO (IMPLIES STEREO)	NP8708	0040000	6.00in OR 152mm	COLOR	0%	80%	NAPP-LEAF ON

NATIONAL ARCHIVES & RECORDS ADMIN CARTOGRAPHIC & ARCHITECTURAL BR | 8601 ADELPHI RD | MD | 20740-6001 | (301) 713-7040

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1938	VERTICAL CARTO (IMPLIES STEREO)	ARS	20000	8.25in OR 210mm	B&W	0%	100%	ASCS PROJECT
1942	VERTICAL CARTO (IMPLIES STEREO)	AD	43100	3.96in OR 101mm	B&W	UNK	100%	USGS FL = 5.2

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, AMES RESEARCH CNTR | CONTACT U S GEOLOGICAL SURVEY ESIC OFFICES | (800) USA-MAPS

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1974 FEB 05	VERTICAL RECONNAISSANCE	01603	124000	6.00in OR 152mm	COLOR	0%	50%	574001603 6074 6
1974 FEB 05	VERTICAL RECONNAISSANCE	01603	126000	6.00in OR 152mm	COLOR	0%	80%	574001603 6068 6

AERO ECO INC | P O BOX 1937 16996 SKY VALLEY DR | CA | 92065 | (619) 788-6802

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS

ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES
AERIAL PHOTOGRAPH SEARCH REPORT

The following sources have reported aerial photo coverage for the subject site USGS topoquad.
For site-specific photo availablity and ordering, please call the individual source agency or call
AIC at 1-800-945-9509 or fax this page to AIC at 512-478-5215.

VENDOR NAME	STREET		STATE	ZIP	PHONE
COUNTY OF CHEMUNG, NEW YORK DIRECTOR, REAL PROPERTY TAX SERVICES	BOX 588 210 LAKE ST		NY	17902	(607) 737-2988

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1980 APR	VERTICAL CARTO (IMPLIES STEREO)	80-13	24000	6.00in OR 152mm	B&W	0%	90%	SUSQUEHANNA-RIVR

VENDOR NAME	STREET		STATE	ZIP	PHONE
KEDDAL AERIAL MAPPING	1900 SLEEPY HOLLOW RD		PA	15129	(412) 835-5655

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1971 NOV	VERTICAL CARTO (IMPLIES STEREO)		0024000	6.00in OR 152mm	B&W	0%	100%	CHEMUNG CO. NY

VENDOR NAME	STREET		STATE	ZIP	PHONE
SUSQUEHANNA RIVER BASIN COMM PENNSYLVANIA	1721 NORTH FRONT ST		PA	17102	(717) 238-0425

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1983	VERTICAL CARTO (IMPLIES STEREO)		0015840	6.00in OR 152mm	B&W IR	0%	100%	

VENDOR NAME	STREET		STATE	ZIP	PHONE
AIR SURVEY CORP	45180 BUSINESS COURT		VA	22170-6702	(703) 471-4510

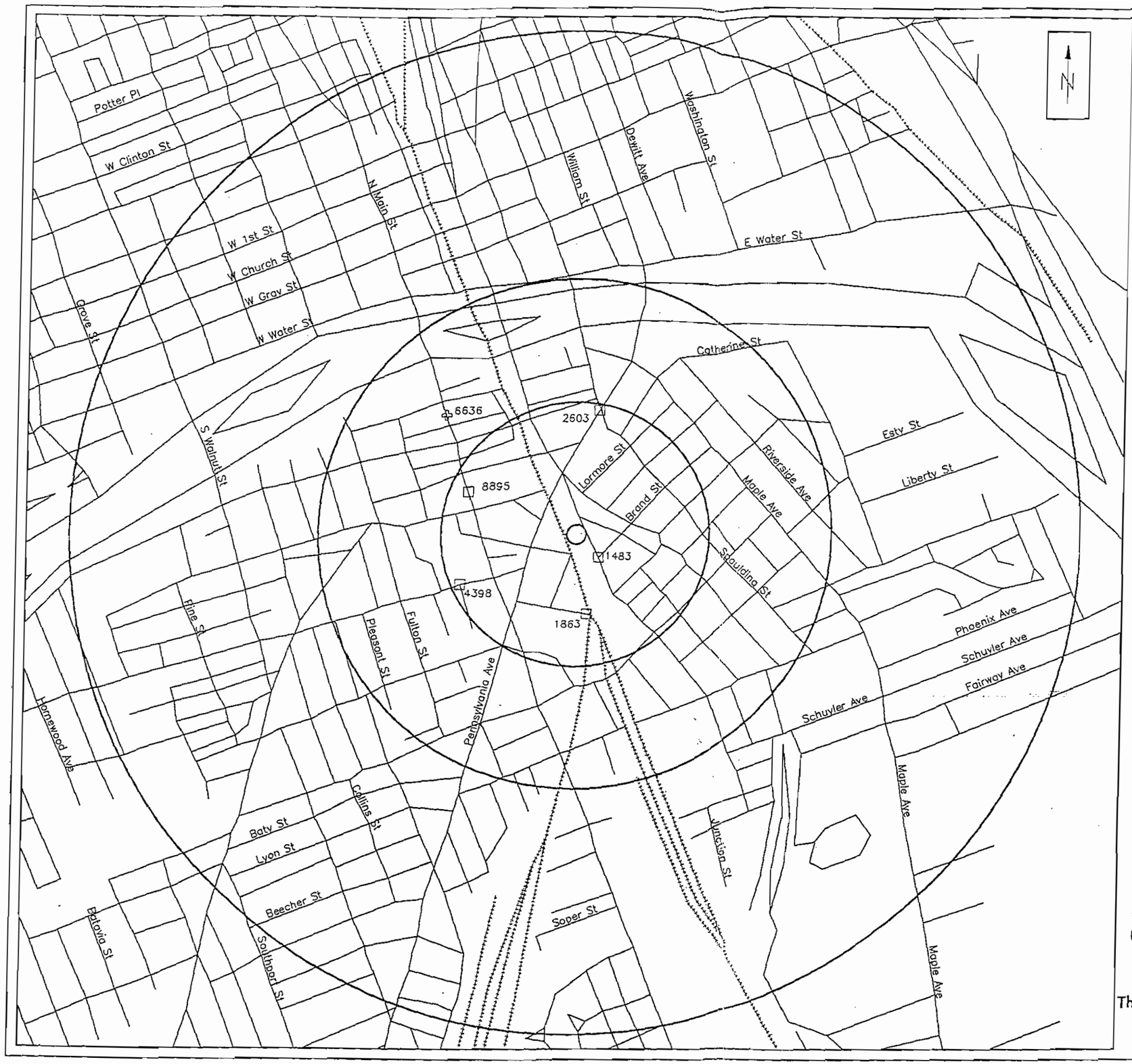
DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1973 MAY 07	VERTICAL CARTO (IMPLIES STEREO)	73-3	13200	6.00in OR 152mm	B&W	0%	20%	CHEMUNG NY
1973 DEC	VERTICAL CARTO (IMPLIES STEREO)	73-1	13200	6.00in OR 152mm	B&W	0%	20%	CORNING NY
1975 MAY	VERTICAL CARTO (IMPLIES STEREO)	75-1	13200	6.00in OR 152mm	B&W	0%	50%	ELMIRA NY

VENDOR NAME	STREET		STATE	ZIP	PHONE

DATE OF COVERAGE	SENSOR CLASS	PROJECT CODE	SCALE	FOCAL LENGTH	FILM TYPE	CLOUD COVER	QUADRANGLE COVERAGE	REMARKS
1972 JUN 27	VERTICAL CARTO (IMPLIES STEREO)	1692	0009600	6.00in OR 152mm	B&W	0%	20%	AGNUS FLOOD AREA

APPENDIX B

SANBORN MAPS



505 Huntmar Park Dr, Suite 200
Herndon, VA 22070
(703)834-0600 (800)989-0402
FAX: (703)834-0606

SITE INFORMATION

American La France Property
Erie Street
Elmira, NY
Chemung County
Job Number: 132452A
Map Plotted: Dec 13, 1996

MAP LEGEND

- Property Area
- Radii .25, .5, 1 Mi
- Hydrography
- Railroads
- Roads
- NPL 0 Sites
- RCRIS_TS 0 Sites
- CERCLIS 0 Sites
- NFRAP 0 Sites
- RCRIS_LG 3 Sites
- RCRIS_SG 2 Sites
- ERNS 0 Sites
- HWS 0 Sites
- LRST 1 Site
- SWF 0 Sites
- PBS 0 Sites
- MOSF 0 Sites
- CBS 0 Sites

Miles

0 0.25 0.5

SANBORN MAP LEGEND

CODING OF FIRE-RESISTIVE STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls only.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, or Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, or Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding to left, for framing, floor and roof structural units is used in describing the construction of fire-resistive buildings. In addition, reports for fire-resistive buildings will show the date built, wall construction other than brick, and ceilings.

Symbol	Description
FP - 1962 (CONC) A-1-a	A fireproof building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.
FPX - 1962 (METAL PANELS) B-2-a (NON-COMB. CEILINGS)	A fireproof building built in 1962 with metal panel walls, reinforced concrete columns and beams, concrete floors on metal lath and gypsum slab roof; non-combustible ceilings.
NC - 1962 (C.B) H-2-d	A noncombustible building built in 1962 with concrete block walls; unprotected steel columns, beams and joists; concrete floors on metal lath and steel deck roof.

MASONRY CONSTRUCTION

Important interior and all exterior masonry walls of all non-residential buildings and residential buildings of five or more dwelling units are shown with weighted (——) lines.

Masonry walls of residential buildings of four dwelling units or less are shown with a standard line and the construction is noted on all buildings diagramed after July, 1963.

WALLS

- 8" Brick
- (CONC) 12" Concrete
- (STONE) 18" & 20" Stone
- (TILE) 12" & 8" Hollow Tile Wall Thicknesses Placed Relative to Respective Floors
- (C BR) Cinder, Concrete or Cement Brick
- (C.B) (PILASTD) Hollow Cinder or Concrete Blocks, Pilastered
- (CB BR) Mixed Construction of Concrete Blocks, Brick Faced
- (CB & BR) Mixed Construction of Concrete Blocks & Brick
- (METAL) Masonry Walls, Metal Faced
- (ADOBE) Adobe
- (C.B) Hollow Cinder or Concrete Block Interior Wall Basement to Roof
- (TILE) Tile Interior Wall Basement to Roof
- (C BR) Cement Brick End Wall

PARTITIONS

- Frame
- (TILE TO CEILING) Tile from Foundation to Top Ceiling only
- (CONC 1ST) Concrete 1st Floor only
- (C.B. 1ST) Hollow Cinder or Concrete Block 1st Floor only
- (BR. 2ND) Brick 2nd Floor only
- (TILE 1&3) Tile 1st & 3rd Floors only

OPENINGS

(Interior)

- Wall with No Openings
- Wall with Double Standard Fire Doors 1st Floor
- Wall with Standard Fire Door Basement
- Wall with Substandard Fire Doors 1st & 3rd Floors
- Wall with Metal & Wired Glass Fire Doors all Floors
- Wall with Substandard Fire Doors 1st, 2nd & 3rd Floors & Unprotected Opening 4th Floor
- Wall with Small Unprotected Openings only
- Wall with Unprotected Openings all Floors

(Exterior)

- 1st Floor
- 1st & 2nd Floors
- 3rd Floor
- 1st & 4th Fl. with Metal Shutter 1st.
- 10th & 22nd only
- 10th to 22nd Fl.
- Glass Block
- Wired Glass in Metal Sash 2nd & 3rd Fl.

NON-MASONRY CONSTRUCTION

Non-masonry walls are shown with fine (———) lines.
(Wall construction other than wood and stucco on wood frame is noted)

- Wood & Stucco & Cement Plaster, Etc. on Wood Frame
- (VENR) Brick Veneered on Wood Frame (Other Types of Veneered on Wood Frame Specifically Noted)
- Mixed Masonry & Non-Masonry (Type of Masonry Specifically Noted)
- (BR FILLED) Wood, Brick Lined, Br. Filled or Brick Nogged
- (WOOD & GLASS) Wood Sash & Glass
- (IR & GLASS) Metal Sash & Glass
- (IR. CL) Metal Clad on Wood Frame
- (IRON) Iron Building
- (IR) (WOOD RF) Iron Building with Wood Roof. (Location of Extensive Wood Areas Specifically noted)
- (ASB CL) Asbestos Clad on Wood Frame, Noted in Non-Residential Structures only.
- (C.B.S. 8' ABV) Mixed Wall—8' of CB With Metal Sash Above
- (METAL PANELS) Metal Panels
- (C & S) Apron Walls With Wood Sash and Glass
- (M L & P STEEL FR) Stucco, Cement Plaster, Etc. on Steel Frame
- (GUNITE STEEL FR) Gunite on Steel Frame
- (A RM) (STEEL FR) Asphalt and/or Asbestos Protected Metal on Steel Frame
- (A RM) (WOOD FR) Asphalt and/or Asbestos Protected Metal on Wood Frame
- (GLASS PANELS) Glass Panels

FIRE PROTECTION

- Fire Department Connection
- (AS) (THRU-OUT) Automatic Sprinklers throughout contiguous sections of single risk
- (AS) Automatic Sprinklers all floors of building
- (AS) (1STORY) Automatic Sprinklers in part of building only (Note under Symbol indicates protected portion of building)
- Not Sprinklered
- (ACS) Automatic Chemical Sprinklers
- (CS) Chemical Sprinklers in part of building only (Note under Symbol indicates protected portion of building)
- (VP) (HYD.) Vertical Pipe or Stand Pipe
- AFA Automatic Fire Alarm
- (WT) Water Tank
- (FE) Outside Vertical Pipe on fire escape
- (FA) Fire Alarm Box Noted "HPFS" on High Pressure Fire Service
- ● Single Hydrant
- D.H. ● Double Hydrant
- T.H. ● Triple Hydrant
- Q.H. ● HPFS Quadruple Hydrant of the High Pressure Service
- 20"W.P.(HPFS) Water Pipes of the High Pressure Service
- 12" Water Pipes of the High Pressure Service as Shown on Key Map
- 6" W.P. / 4" W.P. Public Water Service
- 6" W.P. (PRIV.) Private Water Service

VERTICAL OPENINGS

- Skylight lighting top story only
- (3) Skylight lighting 3 stories
- (WG) Skylight with Wired Glass in Metal Sash
- (E) Open Elevator
- (FE) Frame Enclosed Elevator
- (ET) Frame Enclosed Elevator with Traps
- (ESC) Frame Enclosed Elevator with Self Closing Traps
- (CBET) Concrete Block Enclosed Elevator with Traps
- (TESC) Tile Enclosed Elevator with Self Closing Traps
- (BE) Brick Enclosed Elevator with Wired Glass Door
- (H) Open Hoist
- (HT) Hoist with Traps
- (H B TO 1) Open Hoist Basement to 1st
- Stairs

MISCELLANEOUS

- Number of Stories / Height in Feet / Composition Roof Covering
- Parapet 6" above Roof / Frame Cornice / Parapet 12" above Roof
- (W HO.) Parapet 24" above Roof / Occupied by Warehouse / Metal, Slate, Tile or Asbestos Shingle Roof Covering / Parapet 48" above Roof
- S 2B / 2-D / A in B / DR. / Wd. Sh.: 2 Stories & Basement / 1st Floor Occupied by Store / 2 Residential Units above 1st / Auto in Basement / Drive or Passageway / Wood Shingle Roof
- IR CH Iron Chimney
- IR CH SA Iron Chimney (with Spark Arrestor)
- ● UPB Vertical Steam Boiler
- Horizontal Steam Boiler
- Width of Street between Block Lines, not Curb Lines
- (15) Ground Elevation
- House numbers nearest to Buildings are Official or Actually up on Buildings. Old House Numbers are Farthest from Buildings
- Brick Chimney
- GT Gasoline Tank
- Fire Pump
- 24 Reference to Adjoining Page
- 5 Block Number
- + Fire Department as shown on Key Map
- Vac. or V. - Vacant
- Vac. & Op. or V.-O. - Vacant & Open

GLOSSARY

A - B LINES An arbitrary boundary between adjoining sheets.
A. Private garage.
ABV. Above.
A.F.A. Equipped with fire detecting devices which automatically signal a central fire department.
AIR COND. Air cooling system employing ducts through floors.
APRON WALL. A masonry wall extending 5' or less above foundation.
ASSN'. RISK Risk not underwritten by Stock Fire Ins. Companies.
BASEMENT A story having its floor below ground & its ceiling at least 4' above ground.
Cook County, Ill.: A floor of a building next below the first floor. Shown by the symbol B following story height. Sub-basements or sub-cellars, (stories below the 1st basement), are shown by the symbol SB following basement symbol.
CHIMNEYS (Applicable to maps in Rocky Mountain & Pacific Coast States)
BC. Brick, stone, concrete brick & concrete chimneys.
C.BL.C. Concrete block chimney.
C.C. Non-standard concrete chimney.
T.C. Tile chimney.
P.C. Patent chimney.
IR. CH. Iron chimneys.
S.P. Stove pipe.
S.P.V. Stove pipe with patent ventilator.

RESIDENTIAL OCCUPANCY SYMBOLS
D. Single family unit or as qualified by a numeral.
E. - APTS. A multi-family residential building corresponding with local Rating Bureau definition in family units per floor, story height, & separation of entrance.
ROOM'G. A residential building normally occupied by a single family but with 10 or more rooms rented for lodging purposes.
EXCEPTIONS: 6 rooms in Arizona, California, Nevada, Utah & Montana, 5 rooms in Oregon & Washington, 4 rooms in Idaho & Hawaii.

FIRE RESISTIVE CONSTRUCTION SYMBOLS
F.P. Approved masonry walls, floors & roof, interior supports of approved masonry, concrete, and/or protected steel.
F.P.X. F.P. qualifications except inferior or sub-standard walls.
N.C. Fire resistive with unprotected structural steel units.
HOLLOW WALL. A bonded masonry wall having a continuous air space within.
I.E.P. Independent Electric Plant.
IMPASSABLE Not traversable due to condition of terrain.
LEDGED WALL. A masonry bearing wall with extended ledges to support floors.
LOFT Tenanted by industrial occupancies.
M.L. & P. Concrete or plaster applied to metal lath on wood studdings.
M.S. & G. Metal sash & glass.
NOT OPEN Streets appearing on records but not open on ground.
O.L. Windows overlooking the roof above the corresponding floor of an adjoining building.
O.U. Open between ground and first floor.
PILAST'D. Masonry reinforcing columns in walls.
SKYTS. Skylights.
SL. CL. Slate attached to wood siding.
SM. HO. Smoke House.
STABLE Shown by crossing diagonal lines on diagram.
SUSP'D. Suspended ceilings below floor and/or roof beams.
SYST. System.
TRANSF. Transformer.
WD. Wood.

R		M	
RT		P	
C		U	
W		T	

KEY

- Fire proof construction. (OR FIRE RESISTIVE CONSTN)
- Adobe building
- Stone building
- Concrete, lime, cinder or cement brick
- Hollow concrete or cement block constn
- Concrete or reinforced concrete constn
- Tile building
- Brick building with frame cornice.
  - " " " stone front.
  - " " " frame side (DIVIDED BY FRAME PARTITION)
- Brick veneered building
  - " and frame building
- Frame building, brick lined
  - " " metal clad
- Frame residential building
- Iron building
- Tenant building occupied by various manufacturing or occupancies
- Frame building covered with asbestos
- Brick building with brick or metal cornice
- Fire wall 6 inches above roof
  - " " 12 " " "
  - " " 18 " " "
  - " " 36 " " "
- Figures 8,12,16 indicate thickness of wall in inches.
- Wall without opening and size in inches
- Wall with openings on floors as designated.
- Opening with single iron or tin clad door.
  - " " double iron " " " doors.
  - " " standard fire doors.
- Openings with wired glass doors
- Drive or passage way
- Stable
- Auto House or private garage
- Solid brick with interior walls of C B or C B and brick mixed.
- Mixed construction of C B and brick with one wall of solid brick.
- Mixed construction of C. B and brick with one wall faced with 4" brick.
- Mixed construction of C. B and brick throughout.

HATCHARD ROOF (DOTS REPRESENT OPENINGS, STEMS INDICATE STORIES, COUNTING FROM LEFT TO RIGHT, LOOKING TOWARD BUILDING.)

- Window opening in first story.
- Window openings in second and third stories
- Window openings in second and fourth stories.
- Windows with wired glass.
- Windows with iron or tin clad shutters
- Window openings tenth to twenty-second stories

Width of street (BETWEEN BLOCK LINES, NOT CURB LINES)

- E Open elevator
- FE Frame enclosed elevator.
- ET " " " with traps.
- ESC " " " self closing traps.
- CBTE Concrete block enclosed elevator with traps.
- TESC Tile enclosed elevator with self closing traps.
- BE Brick enclosed elev. with wired glass door.

- Iron chimney
- " " (WITH SPARK ARRESTOR)
- Brick chimney.
- (15) Ground elevation
- VPB Vertical steam boiler
- GT Gasoline tank
- (O.U) Open under
- VP Vertical pipe or stand pipe
- AFA Automatic fire alarm
- IEP Independent electric plant.
- Siamese fire dept connection
- Single fire dept connection
- (AS) Automatic sprinklers.
- (ACS) Automatic chemical sprinklers.
- Automatic sprinklers in part of building only (NOTE UNDER SYMBOL INDICATES PROTECTED PORTION OF BUILDING)
- (NS) Not sprinklered.
- Outside vertical pipe on fire escape
- (FA) Fire alarm box
- Single hydrant.
- DH Double "
- TH Triple "
- QH Quadruple hydrant of the "High Pressure Fire Service"
- (FA) Fire alarm box of the "High Pressure Fire Service"
- Water pipes of the "High Pressure Fire Service"
- " " and hydrants of the "High Pressure Fire Service" as shown on key map.
- 6" W PIPE Water pipes and size in inches
- 6" W PIPE (PRIVATE) Water pipes of private supply
- House numbers shown nearest to buildings are official or actually up on buildings. Old house numbers shown furthest from buildings.

5 Block number

24 Reference to adjoining page.

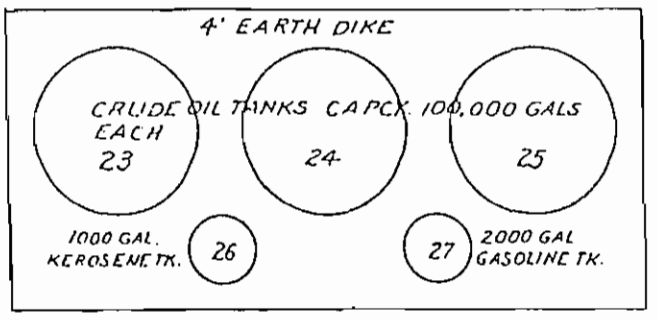
Fire engine house, as shown on key map.

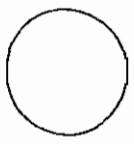
Fire pump

(36) Under page number refers to corresponding page of previous edition

TANKS

O Gasoline Tank





E.
20000 GAL PRESSURE TANK ELEVD 20' ABV ROOF ON STEEL FR.

FUEL OIL LINE

Fire Cistern

CISTERN

2
GARAGE
CAPCY. 20 CARS
CONC. FL.
WOOD RAMP TO 2ND REP. 2ND.

1
PRIVATE GARAGE
CAPCY. 10 CARS
CONC. FL.

CODING OF STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

LAND USE CODE APPLICABLE TO CHANGES DIAGRAMMED AT FEB 5/69

R	RESIDENTIAL	M	MANUFACTURING
RT	RESIDENTIAL TRANSIENT	P	PUBLIC OR INSTITUTIONAL
C	COMMERCIAL	U	UTILITY
W	WAREHOUSE	T	TRANSPORTATION

NUMERICAL PREFIX INDICATES THE NUMBER OF ESTABLISHMENTS IN EACH CATEGORY

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding for framing, floor and roof structural units as shown above is used in describing the construction of fire-resistive buildings. In addition, reports for fire-resistive buildings will show the date built and wall construction when other than brick.

F P buildings have masonry floors and roof; concrete and/or directly or indirectly protected steel framing; and clay brick, stone or poured concrete walls.

F P X buildings are F P buildings with inferior walls such as concrete block, cement brick, metal or glass panels, etc.

N C buildings have unprotected steel framing and fire-resistive but non-masonry floors and roof.

FP-1962 (CONC.) A-1-a — A fire-resistive building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.

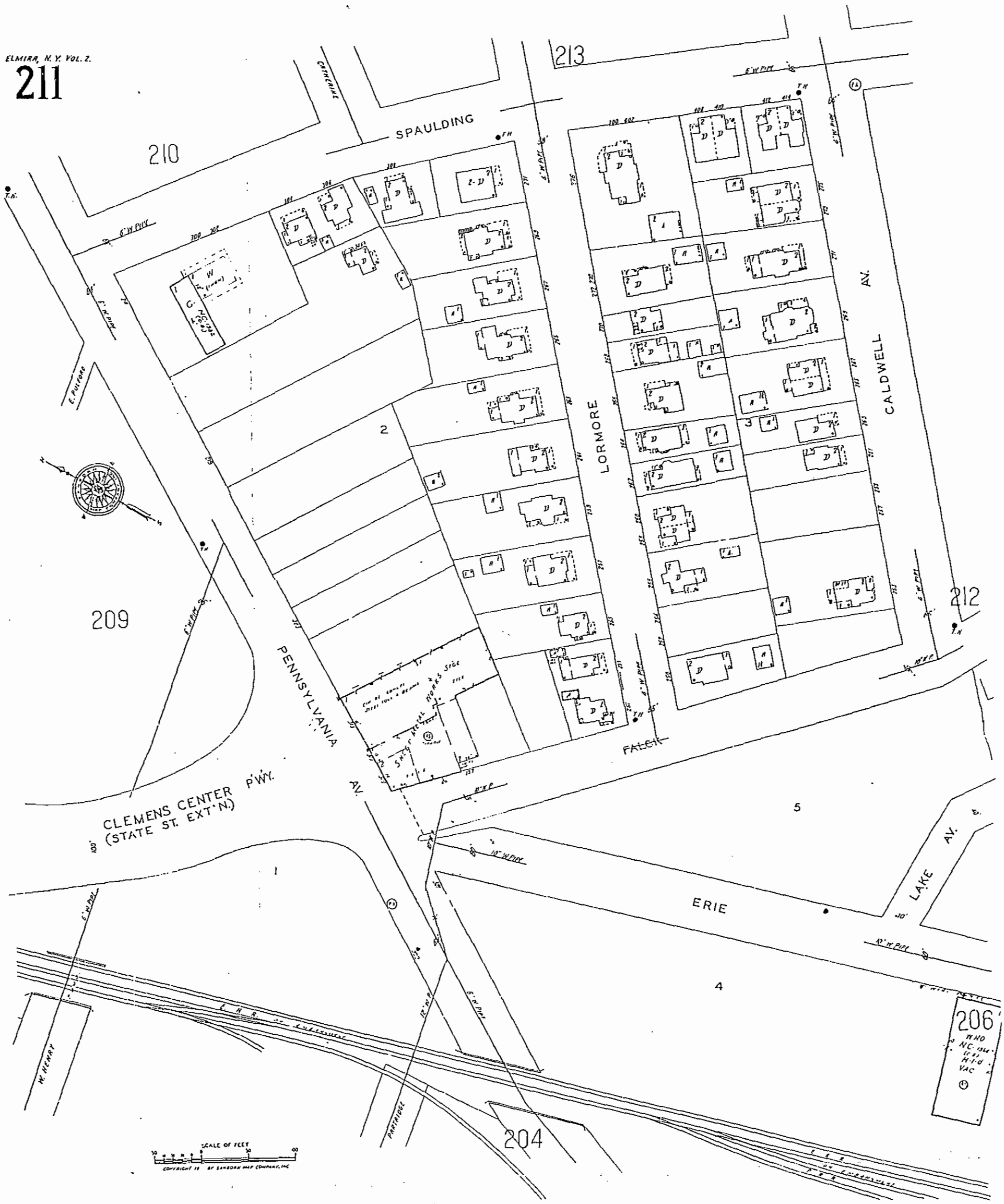
FPX-1962 (METAL PANELS) E-2-b NONCOMB CEIL'G — A fire-resistive building built in 1962 with metal panel walls, indirectly protected steel frame, concrete floors and roof on metal lath, noncombustible ceilings.

NC-1962 (C. B.) H-2-d — A noncombustible building built in 1962 with concrete block walls; unprotected steel columns and beams; concrete floors on metal lath and steel deck roof.

5-62

ELMIRA, N.Y. VOL. 2.

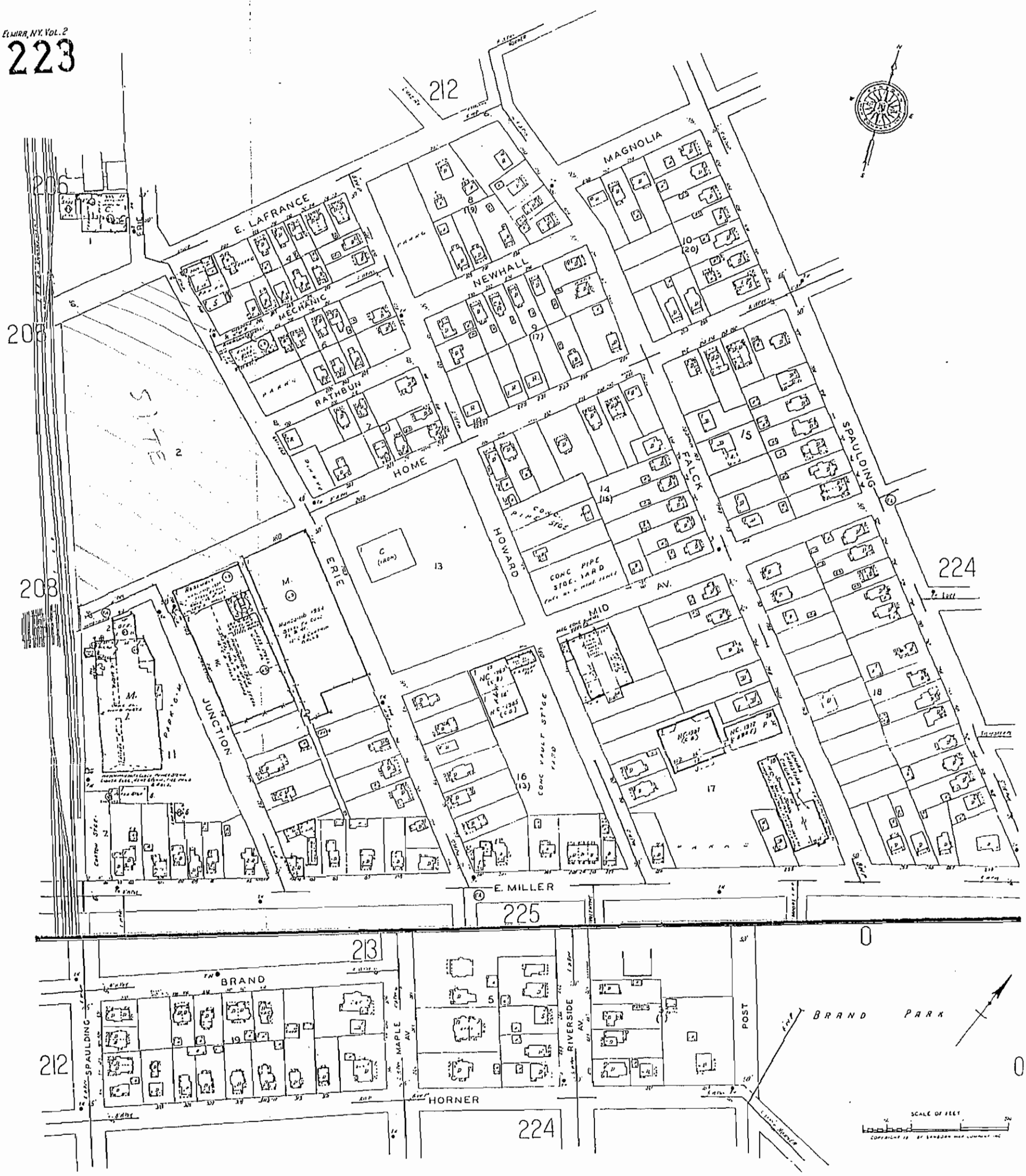
211



1990

ELMIRA, N.Y. VOL. 2

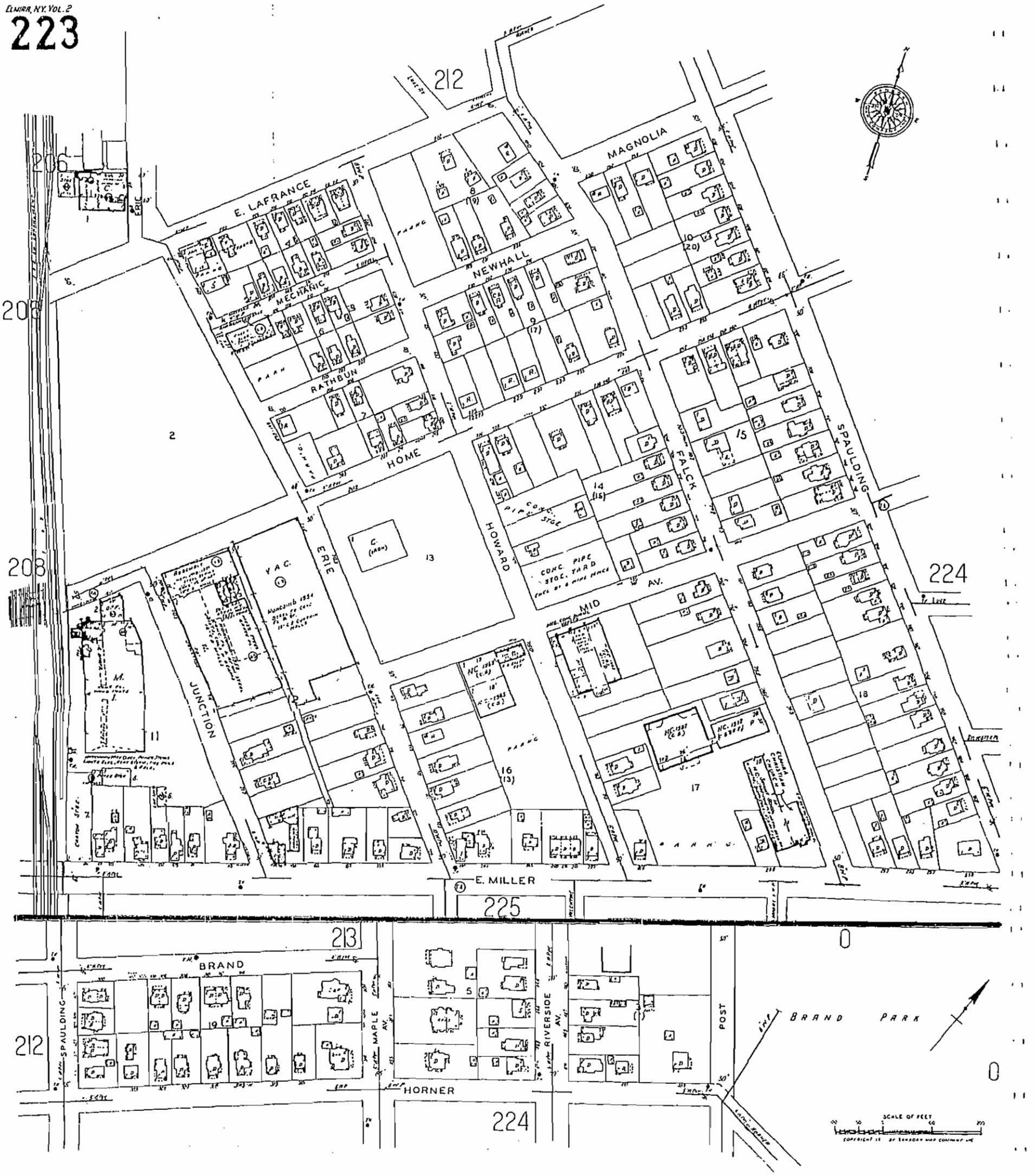
223



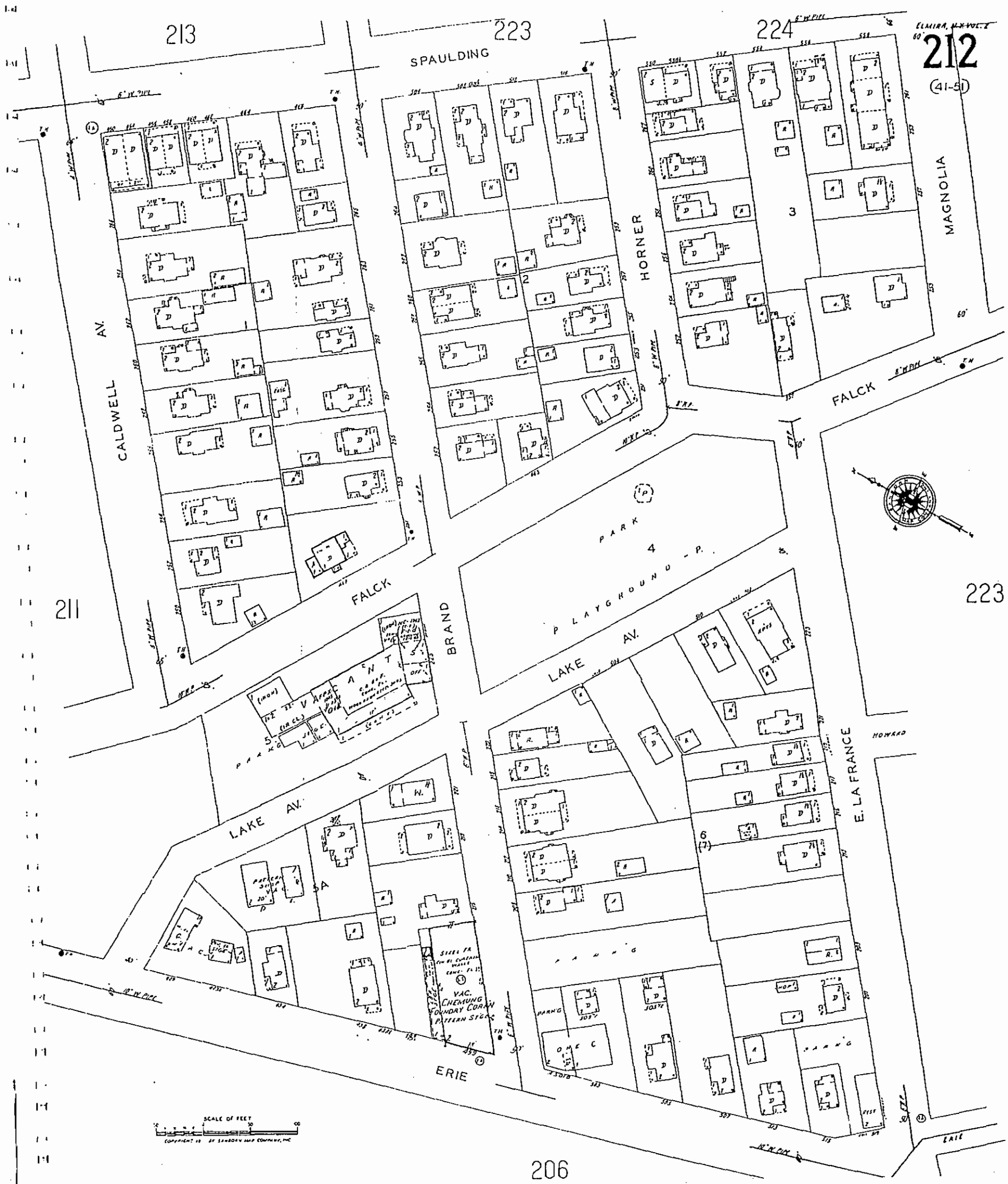
1990

ELMIRA, N.Y. VOL. 2

223



1988



212

213 223 224

SPAULDING

CALDWELL AV.

HORNER

MAGNOLIA

FALCK

BRAND

LAKE AV.

E. LA FRANCE

HOWARD

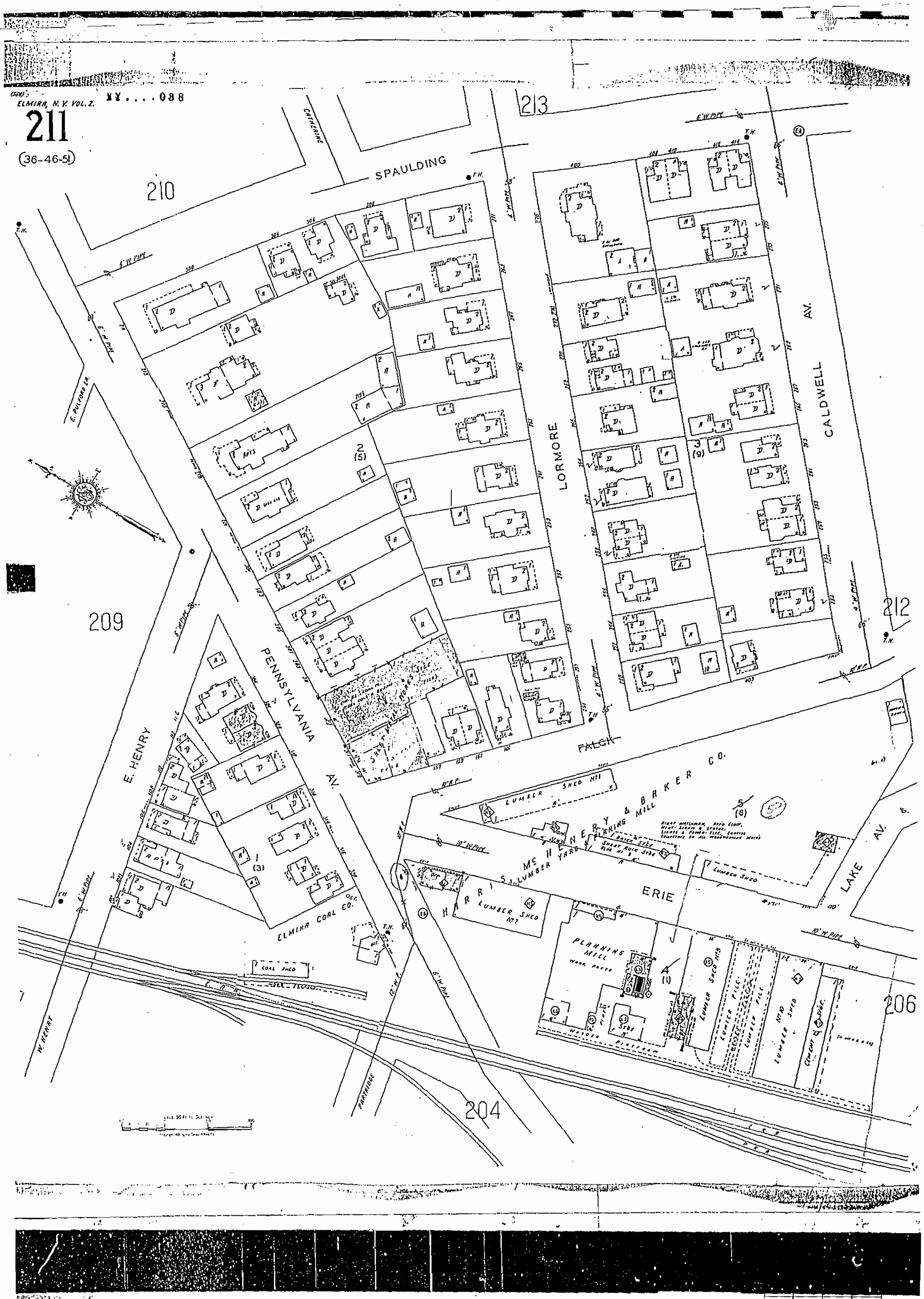
ERIE

MUNICIPAL TENNIS 4 COURTS

CREAMERY

CHEMUNG FOUNDRY CORP'N

211 223 206



1950

Environmental Risk Information & Imaging Services

505 Huntmar Park Drive, Suite 200 ■ Herndon, VA 20170 ■ (703) 834-0600 ■ (800) 989-0403 ■ FAX (703) 834-0606

ERIIS

212

(41-51)

SANBORN

ELMIRA, N.Y. VOL. 2

223

(41-52)

212

206

208

224

225

E. LAFRANCE

MECHANIC

NEWHALL

MAGNOLIA

RATHBUN

HOME

ERIE

HOWARD

FALCK

SPAULDING

MID AV.

E. MILLER

JUNCTION

BRAND

MAPLE AV.

RIVERSIDE AV.

POST

HORNER

BRAND PARK

SCALE 100 ft to One Inch

WYCKOFF & SON CO.

MFG WOOD PIPE

WOOD TURNING

SEWING

1931

ELMIRA, N.Y. VOL. 2

223

224

ELMIRA, NY. VOL. 2

223

(41-52)

212

206

08

224

225

E. LAFRANCE

MECHANIC

NEWHALL

MAGNOLIA

RATHBUN

HOME

ERIE

HOWARD

FALCK

SPAULDING

MID AV.

JUNCTION

E. MILLER

BRAND

MAPLE AV.

RIVERSIDE AV.

POST

HORNER

BRAND PARK

SAWING
WYCKOFF & SON CO.
MFG WOOD PIPE
WOOD TURNING

SHED

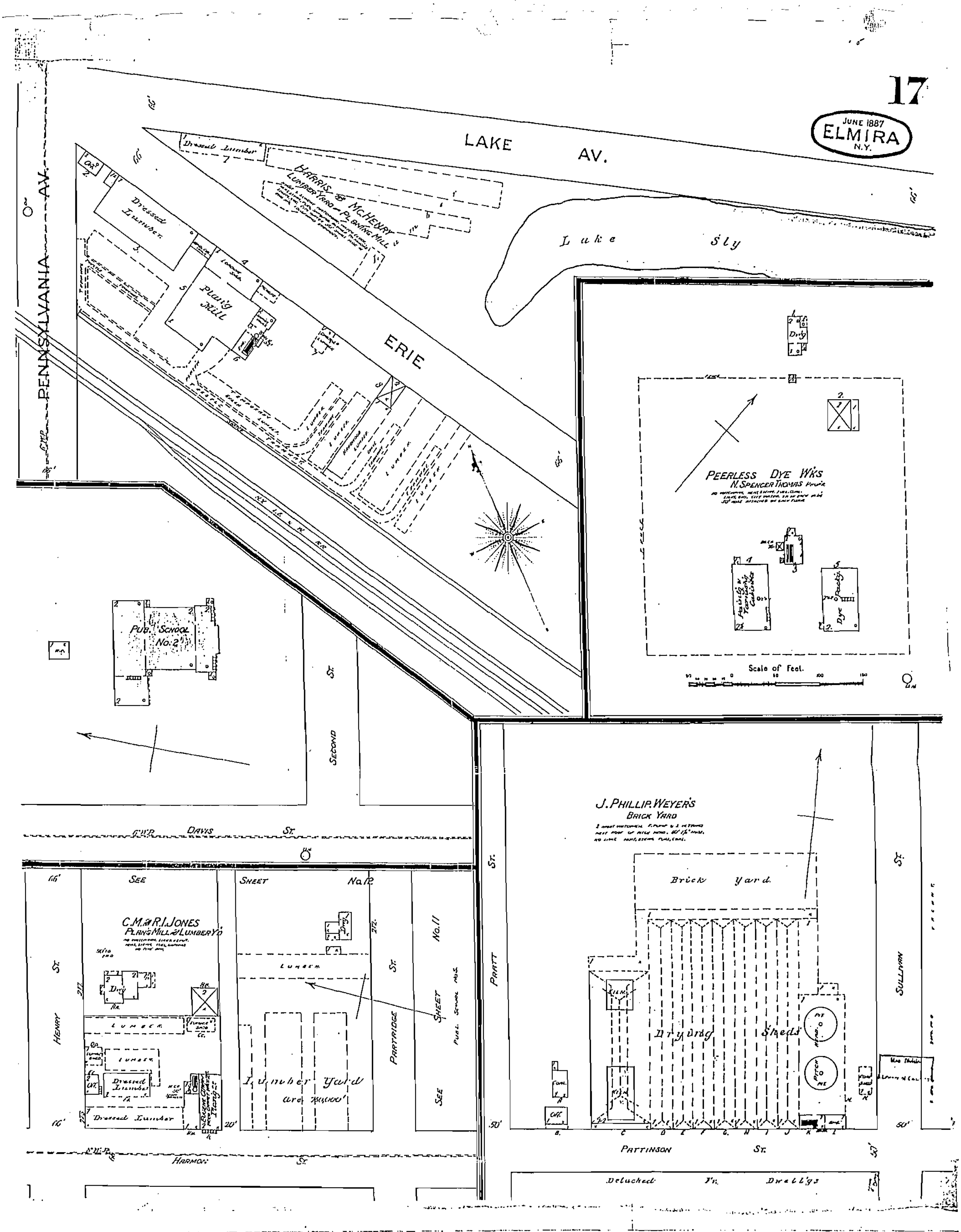
FACTORY BUILDING

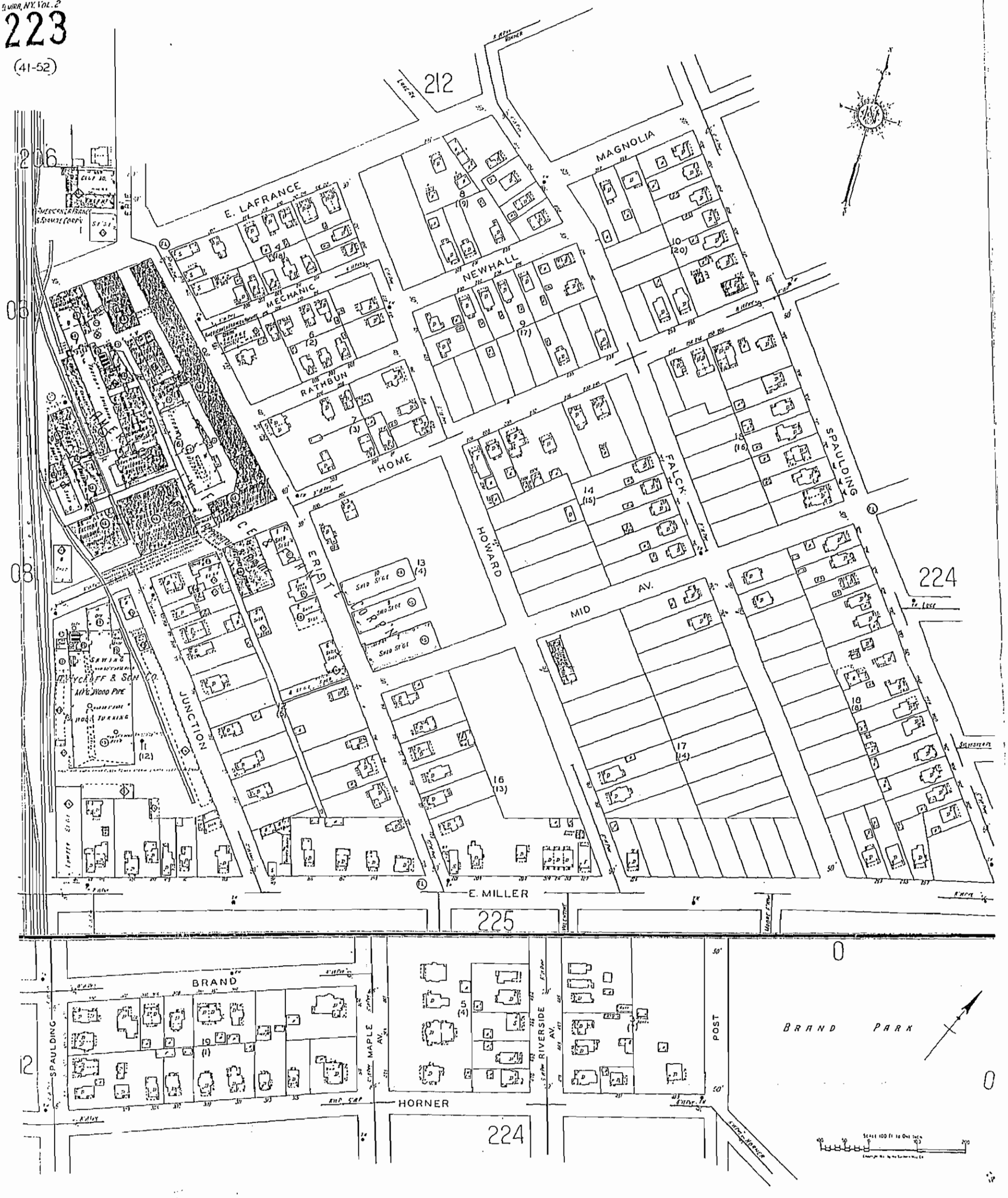
1931

ELMIRA, NY VOL. 2 (36)

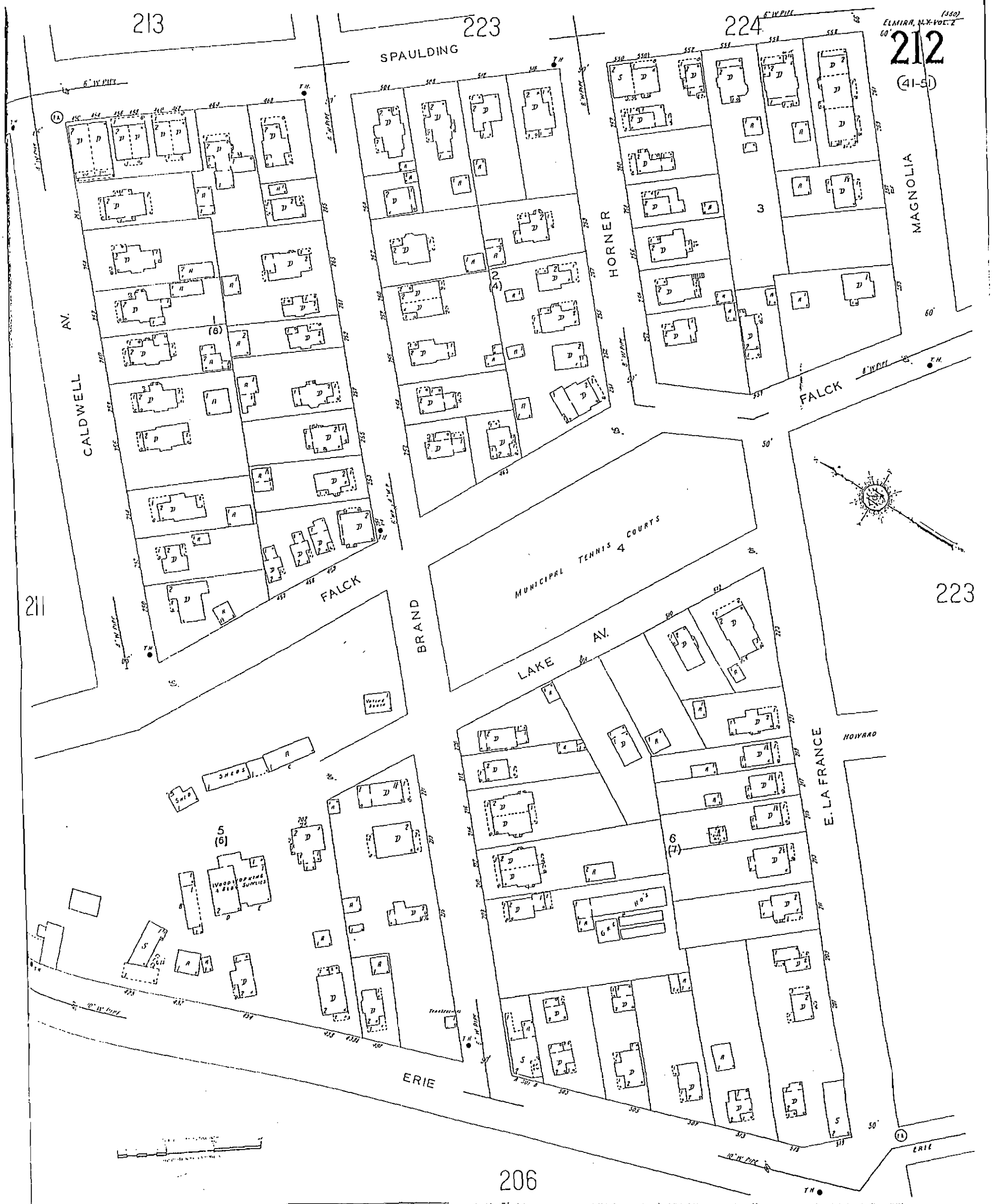
223

224





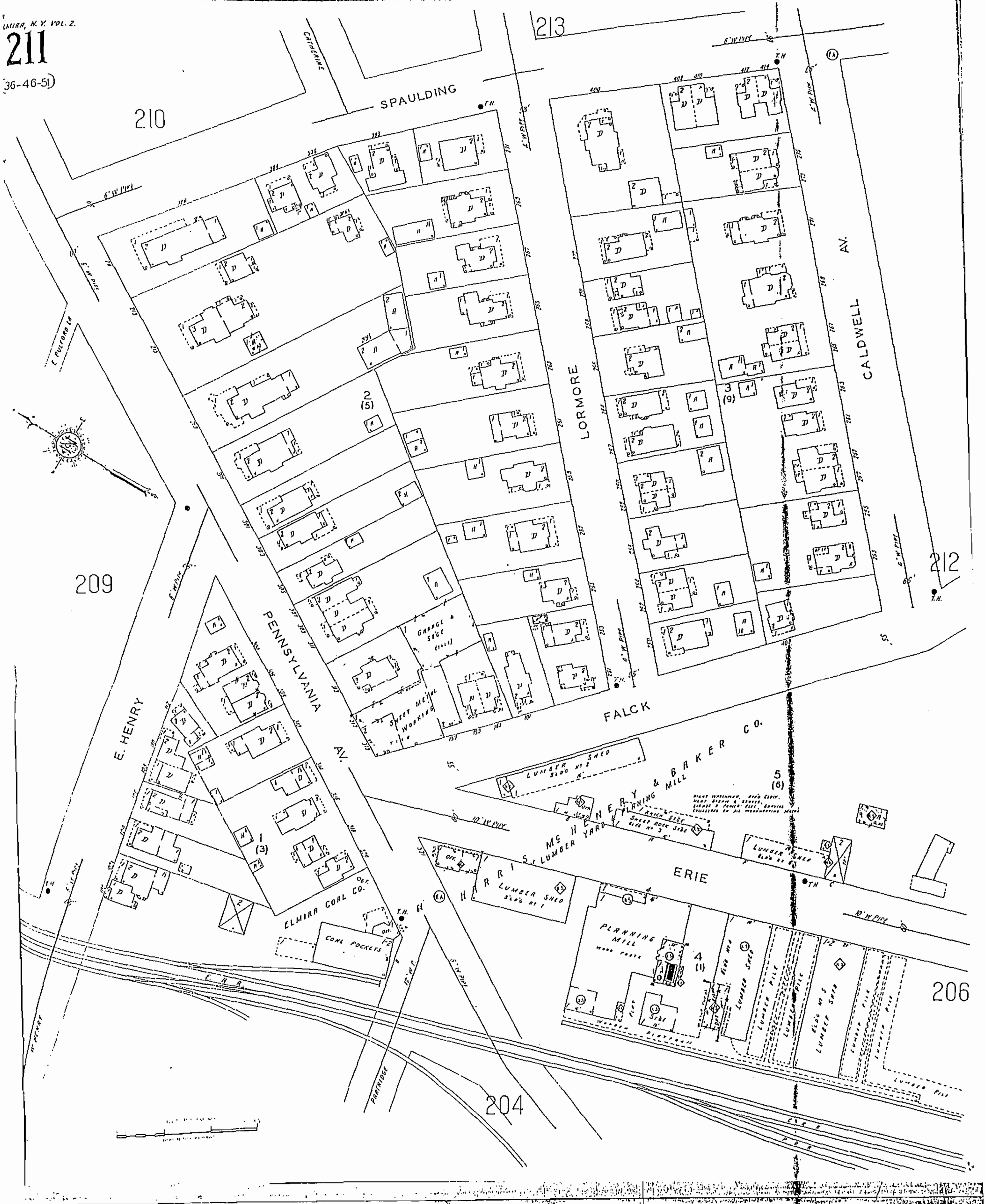
ELMIRA, N.Y. VOL. 2
223
224



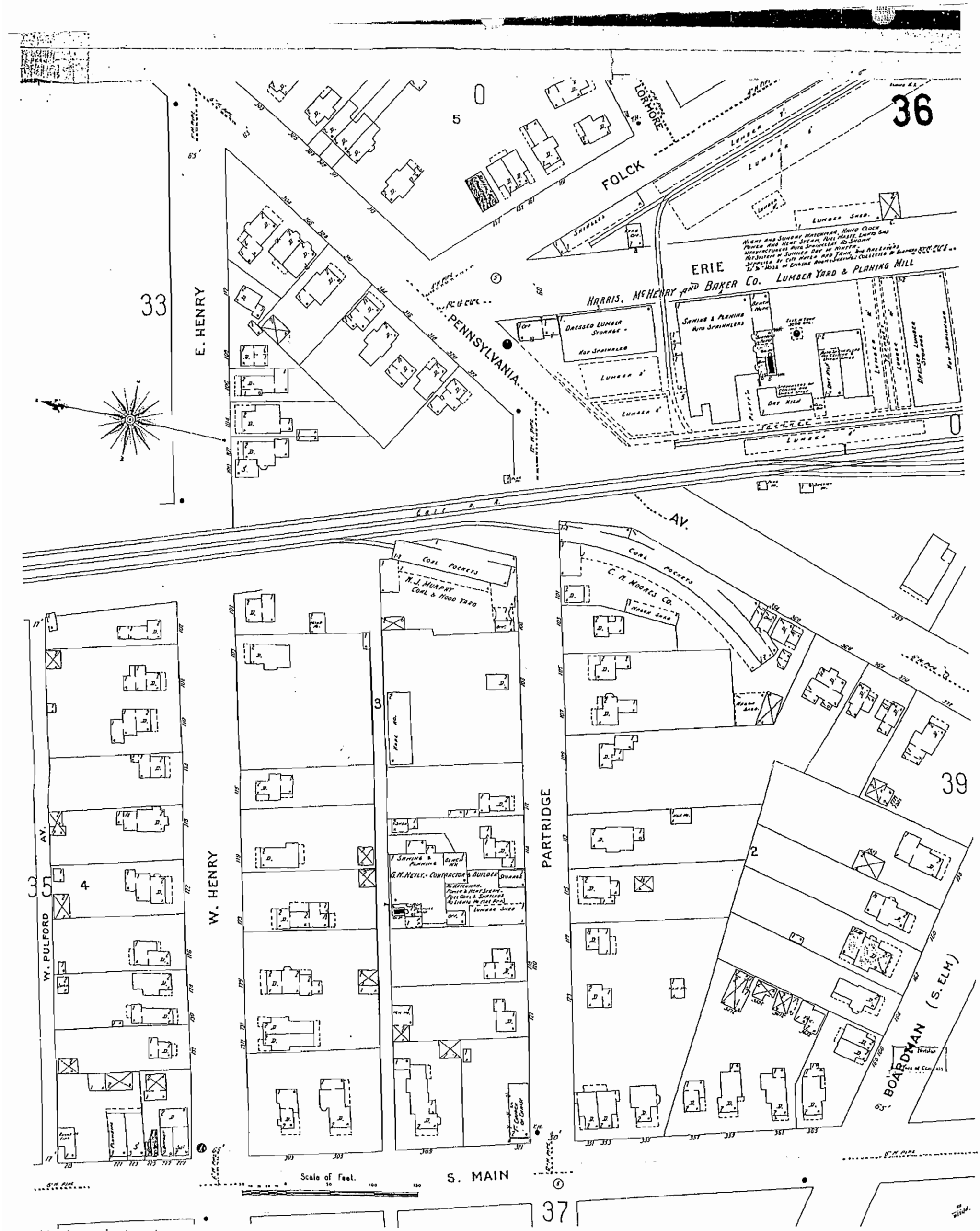
1931

212

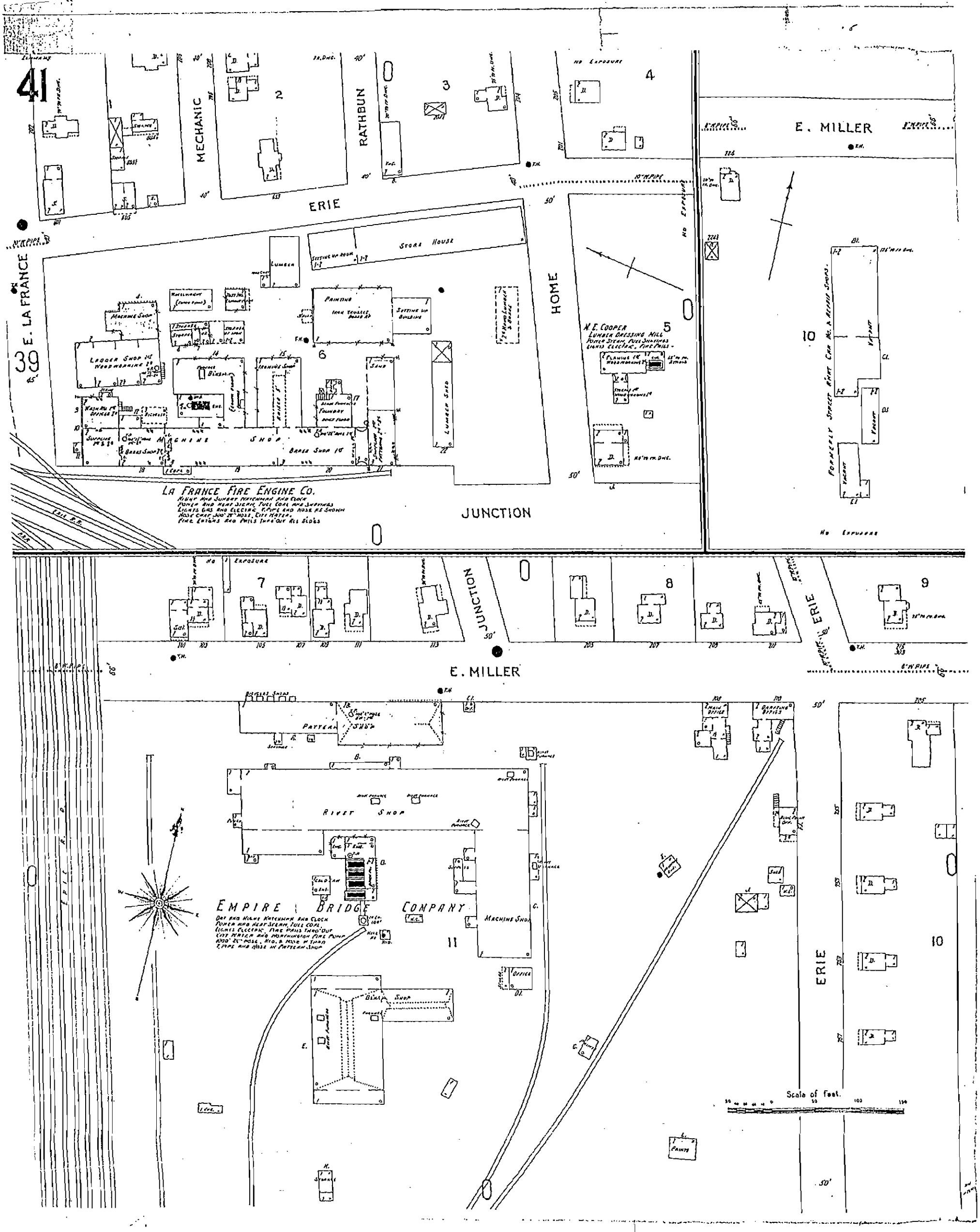
SANBORN



1931



1903



1903

32

JAN. 1898
ELMIRA
N.Y.

Tracey, Beadle

P

Pennsylvania

State Av.

Lake

Erie

Fulton

Franklin

Lormore St.

Cattle Sheds

Sheep Shed

A Exhibition Building

B Exhibition Bldg.

Maple Ave Athletic Assn.

½ Mile Race Track.

Fair

State

Grand Stand

Art Gallery

Exhibition Building

Main Tract 9

Tract 7

Tract 8

Dressed Lumber.

Tramway

Planing Mill.

Dry Kiln.

Engine House

Boiler House

Loading Shed

Harris, McHenry & Baker, Lumber Yard & Planing Mill.

Lumber Ware House

Lumber Shed

Toad Pool.

Vacant.

No exposure.

School.

Orphans Home.

St. Mary's Church.

Map Division

Erie R. R.

Luce St.

Lemon St.

Inter

Scale 100' to 1"

Scale of Feet.

1898

22

LAKE

ERIE

PENNSYLVANIA AV.

Dressed Lumber

PLANING MILL

HARRIS & McHENRY LUMBER YARD & PLANING MILL

Lake Sly.

PUBLIC SCHOOL No 6

McDOWALD ST.

17

APRIL 1892
ELMIRA
N.Y.

PEERLESS DYE W'KS.
N. SPENCER THOMAS, Prop'r.

Storage

Dye Picky.

PUBLIC SCHOOL No 2

SECOND ST.

DAVIS ST.

SEE SHEET No 18.

DORNE & JONES PLANING MILL & LUMBER YARD.

Dressed Lumber

Reed M'f'g Shop.

HENRY ST.

PARTRIDGE ST.

Pond.

J. PHILLIP WEYER'S BRICK YARD.

BRICK YARD.

ICE HO.

SULLIVAN ST.

Sand Shed

PATTINSON ST.

Scale of Feet.

HARMON ST.

PRATT ST.

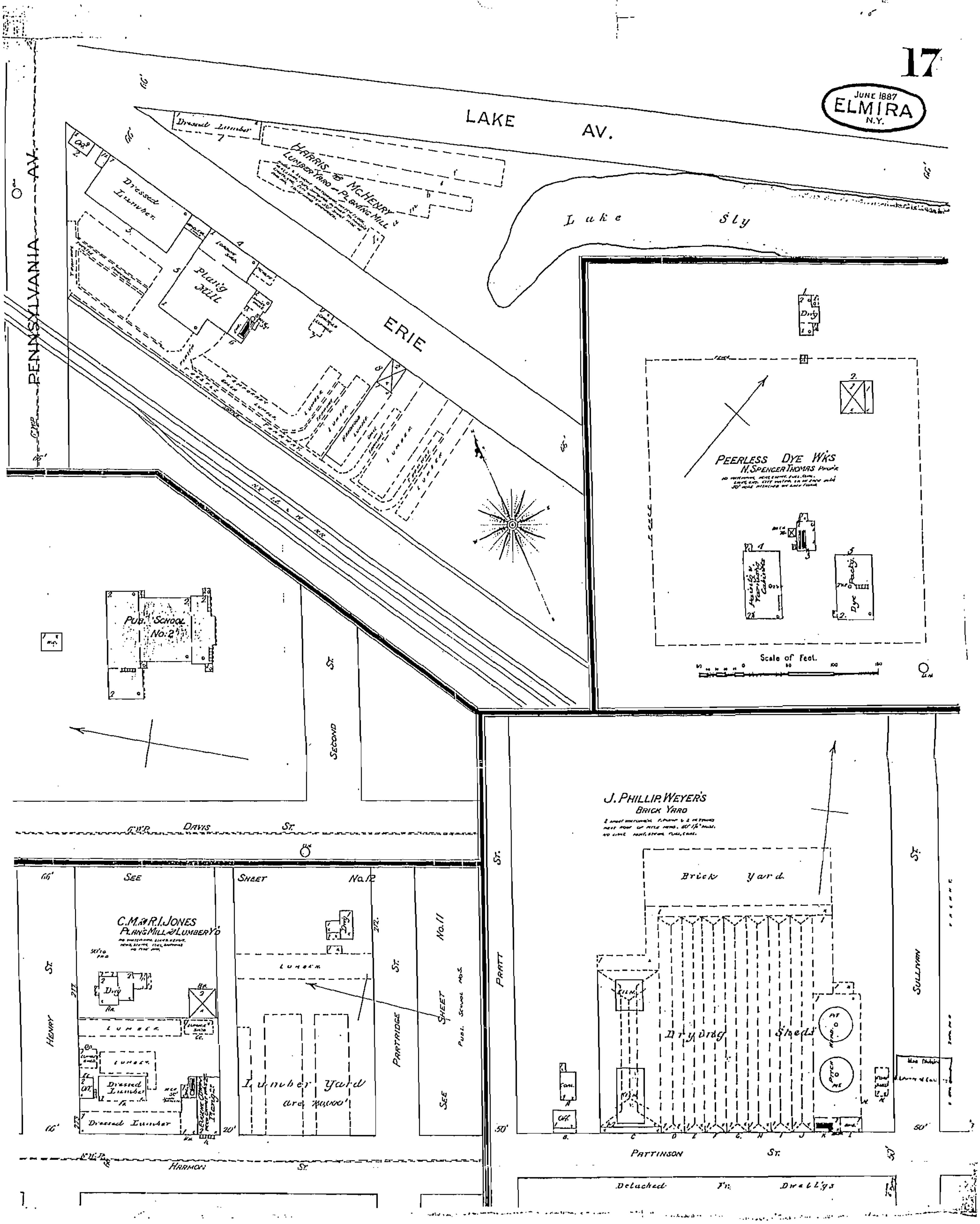
DETACHED FR. O'S.

1892

E R I S

18

SANBORN



SANBORN 1887

WATER FACILITIES.

PREVAILING WINDS WEST

Elmira N.Y.

April 27, 1892

ELMIRA

APPENDIX B

SAMPLING, ANALYSIS, AND MONITORING PLAN

TABLE 2 - 1
SUPERFUND CLP INORGANICS
SUPERFUND TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMIT

Parameter		Contract Required Quantitation Level (µg/L)
1.	Aluminum	200
2.	Antimony	60
3.	Arsenic	10
4.	Barium	200
5.	Beryllium	5
6.	Cadmium	5
7.	Calcium	5000
8.	Chromium	10
9.	Cobalt	50
10.	Copper	25
11.	Iron	100
12.	Lead	3
13.	Magnesium	5000
14.	Manganese	15
15.	Mercury	0.2
16.	Nickel	40
17.	Potassium	5000
18.	Selenium	5
19.	Silver	10
20.	Sodium	5000
21.	Thallium	10
22.	Vanadium	50
23.	Zinc	20
24.	Cyanide	10

TABLE 2 - 1
SUPERFUND TARGET COMPOUND LIST (TCL)
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

	Volatiles	CAS Number	Quantitation Limits* Water µg/L	Low Soil µg/Kg	Med Soil µg/Kg	On Column (ng)
1.	Chloromethane	74-87-3	10	10	1200	(50)
2.	Bromomethane	74-83-9	10	10	1200	(50)
3.	Vinyl chloride	75-01-4	10	10	1200	(50)
4.	Chloroethane	75-00-3	10	10	1200	(50)
5.	Methylene chloride	75-09-2	10	10	1200	(50)
6.	Acetone	67-64-1	10	10	1200	(50)
7.	Carbon Disulfide	75-15-0	10	10	1200	(50)
8.	1,1-Dichloroethylene	75-35-4	10	10	1200	(50)
9.	1,1-Dichloroethane	75-35-3	10	10	1200	(50)
10.	1,2-Dichloroethylene(total)	540-59-0	10	10	1200	(50)
11.	Chloroform	67-66-3	10	10	1200	(50)
12.	1,2-Dichloroethane	107-06-2	10	10	1200	(50)
13.	2-Butanone	78-93-3	10	10	1200	(50)
14.	1,1,1-Trichloroethane	71-55-6	10	10	1200	(50)
15.	Carbon tetrachloride	56-23-5	10	10	1200	(50)
16.	Bromodichloromethane	75-27-4	10	10	1200	(50)
17.	1,2-Dichloropropane	78-87-5	10	10	1200	(50)
18.	cis-1,3-Dichloropropene	10061-01-5	10	10	1200	(50)
19.	Trichloroethene	79-01-6	10	10	1200	(50)
20.	Dibromochloromethane	124-48-1	10	10	1200	(50)
21.	1,1,2-Trichloroethane	79-00-5	10	10	1200	(50)
22.	Benzene	71-43-2	10	10	1200	(50)
23.	trans-1,3-Dichloropropene	10061-02-6	10	10	1200	(50)
24.	Bromoform	75-25-2	10	10	1200	(50)
25.	4-Methyl-2-pentanone	108-10-1	10	10	1200	(50)
26.	2-Hexanone	591-78-6	10	10	1200	(50)
27.	Tetrachloroethene	127-18-4	10	10	1200	(50)
28.	Toluene	108-88-3	10	10	1200	(50)
29.	1,1,2,2-Tetrachloroethane	79-34-5	10	10	1200	(50)
30.	Chlorobenzene	108-90-7	10	10	1200	(50)
31.	Ethyl Benzene	100-41-4	10	10	1200	(50)
32.	Styrene	100-42-5	10	10	1200	(50)
33.	Total Xylenes	1330-20-7	10	10	1200	(50)

* Quantitation Limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, as required by the protocol, will be higher.

TABLE 2 - 1 continued
SUPERFUND TARGET COMPOUND LIST (TCL)
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

	Semivolatiles	CAS Number	Quantitation Limits* Water µg/L	Low Soil µg/Kg	Med Soil µg/Kg	On Column (ng)
34.	Phenol	108-95-2	10	330	10,000	(20)
35.	bis(2-Chloroethyl) ether	111-44-4	10	330	10,000	(20)
36.	2-Chlorophenol	95-57-8	10	330	10,000	(20)
37.	1,3-Dichlorobenzene	541-73-1	10	330	10,000	(20)
38.	1,4-Dichlorobenzene	106-46-7	10	330	10,000	(20)
39.	1,2-Dichlorobenzene	95-50-1	10	330	10,000	(20)
40.	2-Methylphenol	95-48-7	10	330	10,000	(20)
41.	2,2'-oxybis(1-Chloro-propane) #	108-60-1	10	330	10,000	(20)
42.	4-Methylphenol	106-44-5	10	330	10,000	(20)
43.	N-Nitroso-di-n-propylamine	621-64-7	10	330	10,000	(20)
44.	Hexachloroethane	67-72-1	10	330	10,000	(20)
45.	Nitrobenzene	98-95-3	10	330	10,000	(20)
46.	Isophorone	78-59-1	10	330	10,000	(20)
47.	2-Nitrophenol	88-75-5	10	330	10,000	(20)
48.	2,4-Dimethylphenol	105-67-9	10	330	10,000	(20)
49.	bis(2-Chloroethoxy) methane	111-91-1	10	330	10,000	(20)
50.	2,4-Dichlorophenol	120-83-2	10	330	10,000	(20)
51.	1,2,4-Trichlorobenzene	120-82-1	10	330	10,000	(20)
52.	Naphthalene	91-20-3	10	330	10,000	(20)
53.	4-Chloroaniline	106-47-8	10	330	10,000	(20)
54.	Hexachlorobutadiene	87-68-3	10	330	10,000	(20)
55.	4-Chloro-3-methylphenol	59-50-7	10	330	10,000	(20)
56.	2-Methylnaphthalene	91-57-6	10	330	10,000	(20)
57.	Hexachlorocyclopentadiene	77-47-4	10	330	10,000	(20)
58.	2,4,6-Trichlorophenol	88-06-2	10	330	10,000	(20)
59.	2,4,5-Trichlorophenol	95-95-4	25	800	25,000	(50)
60.	2-Chloronaphthalene	91-58-7	10	330	10,000	(20)
61.	2-Nitroaniline	88-74-4	25	800	25,000	(50)
62.	Dimethyl phthalate	131-11-3	10	330	10,000	(20)
63.	Acenaphthylene	208-96-8	10	330	10,000	(20)
64.	2,6-Dinitrotoluene	606-20-2	10	330	10,000	(20)
65.	3-Nitroaniline	99-09-2	25	800	25,000	(50)
66.	Acenaphthene	83-32-9	10	330	10,000	(20)

\# Previously known by the name bis(2-Chloroisopropyl) ether

TABLE 2 - 1 continued
SUPERFUND TARGET COMPOUND LIST (TCL)
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

	Semivolatiles	CAS Number	Quantitation Limits* Water µg/L	Low Soil µg/Kg	Med Soil µg/Kg	On Column (ng)
67.	2,4-Dinitrophenol	51-28-5	25	800	25,000	(50)
68.	4-Nitrophenol	100-02-7	25	800	25,000	(50)
69.	Dibenzofuran	132-64-9	10	330	10,000	(20)
70.	2,4-Dinitrotoluene	121-14-2	10	330	10,000	(20)
71.	Diethylphthalate	84-66-2	10	330	10,000	(20)
72.	4-Chlorophenyl phenyl ether	7005-72-3	10	330	10,000	(20)
73.	Fluorene	86-73-7	10	330	10,000	(20)
74.	4-Nitroaniline	100-01-6	25	800	25,000	(50)
75.	4,6-Dinitro-2-methylphenol	534-52-1	25	800	25,000	(50)
76.	N-nitrosodiphenylamine	86-30-6	10	330	10,000	(20)
77.	4-Bromophenyl phenyl ether	101-55-3	10	330	10,000	(20)
78.	Hexachlorobenzene	118-74-1	10	330	10,000	(20)
79.	Pentachlorophenol	87-86-5	25	800	25,000	(50)
80.	Phenanthrene	85-01-8	10	330	10,000	(20)
81.	Anthracene	120-12-7	10	330	10,000	(20)
82	Carbazole	86-74-8	10	330	10,000	(20)
83.	Di-n-butyl phthalate	84-74-2	10	330	10,000	(20)
84.	Fluoranthene	206-44-0	10	330	10,000	(20)
85.	Pyrene	129-00-0	10	330	10,000	(20)
86.	Butyl benzyl phthalate	85-68-7	10	330	10,000	(20)
87.	3,3'-Dichlorobenzidine	91-94-1	10	330	10,000	(20)
88.	Benz[a]anthracene	56-55-3	10	330	10,000	(20)
89.	Chrysene	218-01-9	10	330	10,000	(20)
90.	bis(2-Ethylhexyl)phthalate	117-81-7	10	330	10,000	(20)
91.	Di-n-octyl phthalate	117-84-0	10	330	10,000	(20)
92.	Benzo[b]fluoranthene	205-99-2	10	330	10,000	(20)
93.	Benzo[k]fluoranthene	207-08-9	10	330	10,000	(20)
94.	Benzo[a]pyrene	50-32-8	10	330	10,000	(20)
95.	Indeno(1,2,3-cd)pyrene	193-39-5	10	330	10,000	(20)
96.	Dibenz[a,h]anthracene	53-70-3	10	330	10,000	(20)
97.	Benzo[g,h,i]perylene	191-24-2	10	330	10,000	(20)

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the Laboratory for soil/sediment, calculated on dry weight basis as required by the Protocol, will be higher.

TABLE 2 - 1 continued
SUPERFUND TARGET COMPOUND LIST (TCL)
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

	Pesticides/Aroclors	CAS Number	Quantitation Limits* Water µg/L	Soil µg/Kg	On Column (pg)
98.	alpha-BHC	319-84-6	0.05	1.7	5
99.	beta-BHC	319-85-7	0.05	1.7	5
100.	delta-BHC	319-86-8	0.05	1.7	5
101.	gamma-BHC (Lindane)	58-89-9	0.05	1.7	5
102.	Heptachlor	76-44-8	0.05	1.7	5
103.	Aldrin	309-00-2	0.05	1.7	5
104.	Heptachlor epoxide	1024-57-3	0.05	1.7	5
105.	Endosulfan I	959-98-8	0.05	1.7	5
106.	Dieldrin	60-57-1	0.10	3.3	10
107.	4,4'-DDE	72-55-9	0.10	3.3	10
108.	Endrin	72-20-8	0.10	3.3	10
109.	Endosulfan II	33213-65-9	0.10	3.3	10
110.	4,4'-DDD	72-54-8	0.10	3.3	10
111.	Endosulfan sulfate	1031-07-8	0.10	3.3	10
112.	4,4'-DDT	50-29-3	0.10	3.3	10
113.	Methoxychlor	72-43-5	0.50	17.0	50
114.	Endrin ketone	53494-70-5	0.10	3.3	10
115.	Endrin aldehyde	7421-36-3	0.10	3.3	10
116.	alpha-Chlordane	5103-71-9	0.05	1.7	5
117.	gamma-Chlordane	5103-74-2	0.05	1.7	5
118.	Toxaphene	8001-35-2	5.0	170.0	500
119.	AROCLOR-1016	12674-11-2	1.0	33.0	100
120.	AROCLOR-1221	11104-28-2	2.0	67.0	200
121.	AROCLOR-1232	11141-16-5	1.0	33.0	100
122.	AROCLOR-1242	53469-21-9	1.0	33.0	100
123.	AROCLOR-1248	12672-29-6	1.0	33.0	100
124.	AROCLOR-1254	11097-69-1	1.0	33.0	100
125.	AROCLOR-1260	11096-82-5	1.0	33.0	100

* Quantitation Limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the Laboratory for soil/sediment, calculate on dry weight basis, as required by the Protocol, will be higher.

Waste disposal parameters will be determined by potential disposal facilities. Data quality objectives and analytical methods are outlined in the QAPP, Table 3-1, Analytical Methods.

The soil gas analytical results of the macro cores will be used as a field test to define horizontal and vertical limits of soil contamination and delineate areas that will need further investigation during the second phase of the investigation.

The composite soil analysis in conjunction with the soil gas analysis will be used to determine areas that need no further characterization and help in determining the horizontal limits of contaminated areas and further define and delineate areas that need further investigation.

2.2 Groundwater Monitoring

Groundwater monitoring and sampling will be conducted to determine flow and contaminants present in groundwater. Three monitoring / observation wells will be installed as part of the SI to evaluate groundwater flow directions through the site (see Figure 1 and 3 of the SI Work Plan). Monitoring wells will be installed with one at a proposed upgradient site, and two down gradient locations. These locations will be determined by using the groundwater data from the Geoprobe macro cores and 1982 Potentiometric Surface by Miller and Allen (see Figure 3). Results of this phase will provide data to determine groundwater contamination and direction of migration.

A specific description of proposed sample locations and estimated depth are described in detail herein, as are analytical parameters and methods.

Groundwater from the upgradient well will be sampled to determine any contamination that may be present upgradient of the site. Two downgradient wells will be sampled and analyzed to determine any contamination of the groundwater that is being leached from contaminants at the site.

The two-inch diameter monitoring wells will be installed 12 feet into the shallow aquifer to an estimated depth of 25 feet. The Consultant will be responsible for determining the location of each well site and determining the ground elevation. Actual well installation depth will be based on depths of the target formations and interpretation of well cuttings from continuous split spoon sampling taken during drilling of the initial well. The samples are to be analyzed by the Hydrogeologist and a boring log developed which is representative of the geologic column adjacent to the well. All wells shall be developed, after the well seal and grout have set, in order to remove native silts and clays from the well bore and to insure quality groundwater samples.

Five groundwater samples will be obtained on-site at select node locations for TCL analysis.

2.2.1 Well Installation & Development Procedures

This section describes construction of each groundwater monitoring well including locations, materials, construction, development and documentation requirements. All well development, including sample characterization, shall be performed by an experienced hydrogeologist acceptable to the Engineer.

2.2.1.1 Location

Proposed well locations are shown on Figure 1 of the SI Work Plan. Exact well locations will be further evaluated with an investigation of the general area to determine existing monitoring wells in the vicinity and available historical data. In conjunction with information generated from the search, well site locations will be determined by the 1982 Potentiometric Surface Map by Miller and Allen. Well locations will be staked and surveyed by the Consultant.

2.2.1.2 Materials

Well tubing and fittings shall be Schedule 40 PVC, 0.010 inch slot with a nominal diameter of two inches, specifically manufactured for use as well tubing.

The sandpack shall consist of new, clean 2Q and 1Q silica sand material by U.S. Silica or Consultant-Approved equivalent, specifically sold for use as annular sandpack material. All sand material shall be supplied to the site in new, undamaged and unopened bags or other sealed containers. Bulk shipment of uncontained sand material will not be allowed. Each container will be labeled with the following:

Material
Brand Name, Manufacturer and Address
Date of Manufacture

The bentonite seal shall consist of either a premanufactured sodium bentonite seal or unhydrated sodium bentonite pellets, specifically manufactured for use as an annular wellbore seal and sized appropriately for this specific application. Each container will be labeled with the following:

Material
Brand Name, Manufacturer and Address
Date of Manufacture

Water for hydration of the bentonite seal and bentonite grout shall be clean, uncontaminated potable water or distilled water which has not been treated with chlorine or any other chemicals. The water source shall be approved by the Consultant prior to start of well installation. Water shall be transported to the site in a clean, uncontaminated container, specifically used for this purpose.

The groundwater monitoring well guard pipe shall be constructed of metal, with a permanently hinged cap capable of being locked with a conventional padlock. The hinged cap shall be permanently attached to the pipe. The guard pipe shall be a minimum of four inches in diameter and protrude a minimum of three feet above the ground surface. The guard pipes shall be painted with two coats of bright yellow epoxy paint. After the paint has dried, each guard pipe will be stenciled on top and on one side with the well's letter-number designation in black epoxy paint.

The concrete wellbore plug and cap will be constructed of 3,000 lb/c.y. Class A Concrete. The concrete may be either mixed on-site or delivered by a concrete hauler. If delivered by a hauler, the Contractor shall deliver to the Consultant a copy of the invoice indicating the specified concrete mix, prior to discharging of the concrete mixture from the truck.

2.2.1.3 Well Construction

The Contractor shall drill a concentric, vertical well shaft using a minimum 4.25-inch diameter hollow stem auger from the surface to the specified depth for each well. If required to support the well bore wall a smooth steel casing with drilling shoe shall be advanced with the auger during drilling and completion activities.

Each "initial" well (MW-1) shall be continuously sampled with a standard two-foot long two-inch diameter split spoon sampler during drilling. The samples shall be field tested for soil vapors using a portable photoionization detector and 10.7 eV lamp. Soil will be visually interpreted and logged by a qualified hydrogeologist using the Unified Soil Classification System or other method acceptable to the Consultant. Well Sampling and logging shall be performed in accordance with 6 NYCRR Part 360, paragraphs 2.11(a)(9) and (10). Representative samples from each two-foot interval shall be collected and stored in moisture-tight glass jars labeled with the following:

Project Number	Interval Sampled
Well Designation	Recovery Length
Sample Number	Date

Standard Blow Counts (140 lb. weight falling 30 inches)

All samples shall be delivered to Fagan Engineers upon completion of the project. Well shaft depths will be measured with a weighted measuring tape. All well measurements shall be made to the nearest .01 feet and coordinated with the site survey as specified in the SI Work Plan.

After completion of the well shaft, a six-inch layer of 2Q sand will be installed as a slurry and the two-inch Schedule 40 well tubing inserted through the hollow stem auger. The threaded well cap shall be perforated on the side.

The remaining 2Q and 1Q sandpack will be installed in slurry form to the required depths by introducing it between the tubing string and the inside of the auger. The auger and casing will be slowly removed as the silica sand slurry settles and supports the well shaft wall. Again, all pertinent depths will be measured to the nearest 0.01 feet with a weighted measuring tape and recorded.

If a premanufactured well seal is to be used, it shall be installed in accordance with manufacturer's instructions. A bentonite pellet well seal, if used, shall be constructed by slowly and carefully dumping a hydrated bentonite pellet slurry into the annulus until the required three-foot thickness is achieved all around the tubing.

The remainder of the well shaft will be filled with a bentonite grout slurry using a trime line, to the depth indicated on the engineering Plans. The auger and casing will continue to be slowly retrieved as the slurry settles and can support the well shaft wall. Individual auger and casing sections can be removed as they clear the well shaft. At the Contractor's discretion, the auger may be completely removed from the well shaft after installation of the bentonite grout.

The concrete plug and cap will be installed in two separate pours. The metal guard pipe will be installed with the plug and aligned vertically. The plug will be allowed to cure before pouring the cap. Heavy duty 90 pound roofing felt will be wrapped around the guardpipe and laid over the plug before the cap is poured. The cap surface will be sloped away from the guard pipe. The well designation will be drawn in the cap before the concrete cures.

After the concrete cap has cured, any exposed roofing felt will be removed and the well painted with two coats of bright yellow epoxy paint. After the paint has dried, the guard pipe shall be stenciled with the well designation in black epoxy paint. Each well shall be supplied with a new, high quality padlock with two keys.

2.2.1.4 Well Development

Each well will be developed by a qualified Hydrogeologist after construction, a minimum of 48 hours after completion of well installation.

The wells shall be developed by continuous pumping-out at a rate low enough to prevent intrusion of soil fines into the sandpack.

Each well shall be developed for a minimum of two hours. During well development, the following parameters shall be monitored, at a minimum, every 15 minutes:

Temperature
Conductivity
pH
Turbidity

Monitoring of these parameters shall be recorded in a well development log, along with pumping time and rates, which will be included in the Monitoring Well Installation Report.

The well development will be complete when, in the opinion of the Hydrogeologist, all four monitored parameters have stabilized.

2.2.1.5 Abandonment Of Uncompleted Wellbores

If, in the opinion of the hydrogeologist and confirmed by the Consultant, site conditions warrant the abandonment of a drilled wellbore prior to completion as a monitoring well, the Contractor shall backfill the wellbore with the original well cuttings.

If the wellbore has intercepted all or any portion of a clay or low-permeability soil layer, the wellbore will be backfilled with a bentonite grout as described in 2.2.1.3 of this section, across the entire formation thickness.

The remaining wellbore will be backfilled with the original native cuttings or with an Consultant-approved borrow soil to a height consistent with the surrounding ground.

2.2.1.6 Erosion and Sediment Control

The Contractor shall ensure that soil sediments from areas disturbed as a result of the Contractor's activities, including well cuttings, are not discharged into adjacent waters or wetlands.

2.2.1.7 Monitoring Well Installation Report

An Installation Report will be prepared by the Contractor which fully describes the construction of all monitoring wells.

The Installation Report shall contain narrative descriptions of drilling and sampling methodologies, installation materials and methodologies and well development methodologies. Also included shall be boring logs, well construction diagrams and well development field measurements for each well. Boring logs are not required for the shallow well.

The Installation Report shall be submitted to the Consultant for review upon completion of the last well.

2.2.4 Groundwater Sample Analytes

Samples will be analyzed for Target Compounds as listed in Appendix A of NYSDEC TAGM 4046. Table 2-1 Superfund Target Compound List and Contract Required Quantitation Limit.

3.0 Sample Collection and Handling Procedure

3.1 Sample Collection

Soil sample will be collected in accordance with the soil sampling procedures in this section. These soils will be characterized by the hydrogeologist at the time of boring and recorded on a standard boring log form.

3.1.1 Soil Sampling Procedures

Soil samples will be collected at each location to be sampled using direct push techniques. A 48-inch, split-barrel sampler or macro core device will be hydraulically pushed to collect the soil sample. A grab sample will be obtained from macro core. Samples from the macro cores will be composited with the other cores from that node for TCL analysis. Samples will be collected from each 24-inch interval to the water table. The water table is estimated to be a depth of 12 to 14 feet below ground surface. Samples exhibiting visible staining and/or elevated PID or GC readings will be included for TCL analysis. Sampling borings will be plugged using bentonite hole-plug or bentonite grout slurry using a trime line.

3.1.1.1 Equipment Required

Following is a list of equipment that may be needed to collect samples of soil.

PVC Core Sleeves (liners)
or polyethylene tetraphthalate
Disposable Gloves
Disposable Single Edge Razor Blades
Disposable Dishes to Composite Sample
8 Oz. Glass Jars with Sealing Lids
Equipment decon agents:
- Deionized water
- Detergent eater, non-phosphate
- Hexane, pesticide grade
- Methanol
- 0.1N HCL water

HNu portable PID meter
Chain of Custody Form
Box Cutting Knife
Disposable Sample Spoons
Scale - Measures in grams
Field Log Notebook

3.1.1.2 Collection Technique

After the macro core has been extracted from the bore, the macro core will be visually inspected for soil characterizations, color, consistency and general lithology with length and characterization of each being noted in log book.

Subsequent to obtaining samples for soil vapor analysis by the portable gas chromatograph (see section 3.1.2), cross-sectional cuts will then be made through the core sleeve and core and some of the small (sand size or smaller) soil collected from each of the various lithologies present in the core. The total sample collected from each macro core should weigh approximately 56 grams. The amount of material collected from each of the various lithologies present in the core should be relative to the interval length of the lithology compared to the length of the core (i.e., 1 foot is dark brown sand then collect 28 grams or half of the total 56 grams to be collected).

Disposable razor blades should be used to cut the cross-sectional areas from the core and sleeve. Separate disposable sample spoons should be used to collect each soil sample from each lithology sampled.

Sample material should be placed on a piece of clean paper and weighed prior to being added to the glass compositing jar.

Remainder of each section of the sample sleeve should be sealed using duct tape and marked as to its' specific grid node location and depth.

3.1.1.3 Compositing of Sample

As each macro core is extracted from the node bore hole, the macro core is sampled as discussed in Section 3.1.1.2 and the final sample added to the glass compositing jar and the lid secured.

After the final core has been sampled from the grid node and added to the composite jar, roll the glass composited sample jar end for end and side to side to create a homogeneous sample.

3.1.2 Field Analysis of Soil Gas

Soil gas samples will be sampled with a portable gas chromatograph (GC). The GC will be calibrated to the TO-14 target compounds (see Table 3-1).
The four foot macro cores obtained in Section 2.1 will be utilized to provide the air sampling media. A 60 gram sample will be obtained for analyses from each end and from the center of each macro core. A stainless steel air sampling probe connected to the GC sampling pump via Teflon tubing will be inserted into the glass sample jar through an aluminum foil seal to obtain a dedicated zero headspace air sample. The GC will be programmed to draw a 250 ml air sample volume (sample time of 15 seconds). A particulate filter will be installed in-line to prevent soil particles from reaching the capillary column. All sampling equipment will be decontaminated between samples.

Field analytical equipment will be calibrated prior to each day's use, in accordance with the manufacturer's instructions, and such calibration will be recorded in the field log. Instruction manuals for the operation of field analytical equipment will be available with the equipment.

Samples will be obtained from each macro core until groundwater is encountered. The sampling pump will be programed to purge ambient air from the tubing prior to analysis by the GC. The tubing will be purged with VOC-free purified air between samples. Sample probes will be dedicated or decontaminated between sampling.

3.1.2.1 GC Standard Operating Procedure

The GCSOP has been prepared in accordance with the NYSDEC Division of Environmental Remediation (DER) QC Guidelines for GC Field Screening Methods. The GCSOP is included herein as Attachment A.

The GC will be calibrated with each morning prior to sampling or after remobilization to insure quality control. Identical sample loops will be used for both sampling and for calibration.

Soil gas readings exceeding background levels will be utilized to highlight probable hot spots requiring further investigation. Results of this delineation will be used to select additional soil boring locations and areas of further investigations in the secondary phase.

3.1.2.1 Equipment Requirements

HNu 311D portable gas chromatograph, equipped with an 11.7 eV photoionization detector lamp, electron capture detector, and DB624 capillary column (30m x 0.53mm).
Laptop computer
Purified air supply
Laytex gloves
Nitrile gloves
Tubing: Teflon

TABLE 3 - 1

TO - 14 TARGET COMPOUNDS

Benzene
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chloroform
Chloromethane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethyl chloride
Ethylbenzene
Halocarbon 12
Halocarbon 11
Halocarbon 113
Halocarbon 114
Hexachloro-1,3-butadiene
Methylene chloride
Styrene
1,1,2,2-Tetrachloroethane
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
m-Xylene
o-Xylene
p-Xylene
Tetrachloroethene

Sample probe tip: Stainless steel
Utility knife
Duct tape
Glass sample jar
Aluminum foil
Sampling spatula
Gram scale

3.1.3 Groundwater Sampling Procedures

Monitoring wells at the ALF site will be sampled according to the United States Environmental Protection Agency document entitled "RCRA Ground-Water Monitoring Technical Enforcement Guidance Document" (November 1992) OSWER-9950.1.

3.1.3.1 Equipment Requirements

The following list of equipment may be required for groundwater collection:

Bailers	Field Filter Kit
Electronic well depth gauge	Deionized water
Detergent eater, non-phosphate	Hexane, pesticide grade
Methanol	0.1N HCL water
Disposable Gloves	pH/temperature meter
Millivolt Meter (for Eh analysis)	Conductivity Meter
Turbidimeter	Calibration/reference solutions
Bailer Cord	Buckets
Field Log Notebook	Calibration Log
Chain of Custody Form	

3.1.3.2 Measurement of Static Water Level

Field measurement includes depth to standing water and total depth of the well. This information is required to calculate the volume of stagnant water in the well and to provide a check on the integrity of the well (e.g., identify siltation problems). The measurements are taken to the nearest 0.01 feet. Each well is given a permanent, easily identifiable reference point at the top of the well casing from which its water level measurement is taken. The depth to water meter is sufficiently sensitive so that a measurement to 0.01 feet can be obtained reliably. An electronic device is used to measure depth to the water surface or light phase immiscible. For all non-dedicated equipment decontamination procedures will be used to ensure that no cross contamination occurs. Prior to starting at each well, field personnel will don a clean pair of disposable gloves and any other personal protective gear deemed necessary in the site specific Health and Safety Plan. The well will then be unlocked and uncapped. The lock and cap will be placed in a clean area where contamination will not occur.

3.1.3.3 Well Evacuation

Prior to sampling, the standing water in the well is removed from the well and filter pack so that formation water (fresh water) can replace stagnant water.

Procedure

The pump is first lowered into the well. For high yield wells, (wells that are capable of yielding three casing volumes), water is to be drawn down from above the screened interval in the uppermost part of the water column to ensure that fresh water from the formation will move upward in the screen replacing stagnant water. In low yield wells, (wells that are incapable of yielding three casing volumes), water is purged so that it is removed from the bottom of the screened interval.

The procedure for well evacuation will depends on the hydraulic yield characteristics of the well. When evacuating low yield wells, the wells will be evacuated to dryness once. Well evacuation will be done at a maximum rate of 1 gpm. At no time will a well pumped to dryness if the recharge rate causes the formation water to vigorously cascade down the sides of the screen and cause an accelerated loss of Volatiles. When evacuating high yield wells, the wells will be purges, at rate that does not cause recharge water to be excessively agitated and until at least three casing volumes have been evacuated.

If the same equipment is not going to be used for sample withdrawal, the purging equipment will then be withdrawn from the well and decontaminated.

3.1.3.4 Equipment

Positive gas displacement, PTFE/stainless steel bladder pumps, PTFE or stainless steel bailers or variable speed submersible pumps are potential types of purging equipment. Peristaltic pumps, gas lift pumps, centrifugal pumps and others, may be used. Some of these pumps cause volatilization and produce high pressure differentials, which result in variability in the analysis of pH, conductivity, metals and volatile organics. These pumps are acceptable for purging the wells if sufficient time is allowed to let the water stabilize prior to sampling.

To ensure that the groundwater sample is representative of the formation, physically altering or chemically contaminating the sample during the withdrawal process must be avoided. In order to minimize the possibility of sample contamination, only PTFE or stainless steel bailers will be used. Dedicated bailers will be used for each well where possible. Sampling equipment should be constructed of inert materials. Equipment with neoprene fittings, PVC bailers, tygon tubing, silicon rubber bladders, neoprene impellers, polyethylene and viton are not acceptable.

The following are acceptable sampling devices for all parameters:

Bladder Pumps (PTFE and/or stainless steel)
Bailers (PTFE or stainless steel)

3.1.3.5 Decontamination

Dedicated equipment will be used whenever possible. When dedicated equipment is not used, procedures for disassembly and decontamination before each use must be followed. If the parameters of interest are inorganic, the equipment is to be cleaned with a non-phosphate detergent water. The first rinse is to be a dilute (0.1N) hydrochloric acid (HCl) water, followed by a rinse of D.I. water. When organic parameters are of interest, the equipment is decontaminated in the following manner: Wash with the non-phosphate detergent water, rinse with deionized water then rinse with pesticide grade hexane or methanol or both. If the parameters of interest are both inorganic and organic a combination of both is used with detergent water first, followed by 0.1N Hcl, deionized water then hexane and/or methanol. The sampling equipment is then allowed to dry before use to ensure that residual cleaning agents are not carried over to the sample. Measures are to be taken to prevent purging equipment from coming in contact with the ground such as laying plastic sheeting on the ground around the well or keeping equipment off ground, which could in turn introduce contaminants into the well.

3.1.3.6 Sample Withdrawal and Collection

The technique used to withdraw the groundwater sample from a well will be selected based on a consideration of the parameters to be analyzed for. Samples are collected and containerized in order of the volatilization sensitivity of the parameters.

The following collection order for groundwater parameters is as follows:

Volatile organics
Extractable organics (semi-Volatiles, pesticides, PCB's, etc.)
Total metals
Dissolved metals
Cyanide
Turbidity
All other parameters

Temperature, pH, Eh and conductivity measurements are made in the field, before and after sample collection. Turbidity is measured prior to sample collection. In the advent that a field meter is malfunctioning or field measurements cannot be obtained, a sample for those parameters will be collected and analyzed upon receipt at the laboratory.

3.1.3.7 Collection Technique

In the field, the following sampling order and techniques are to be followed:

Upgradient wells are to be sampled first, followed by downgradient wells or, if applicable, least contaminated wells first followed by most contaminated. This is extremely important when non-dedicated equipment is used but not necessary if dedicated equipment is used.

Positive gas displacement bladder pumps are to be operated in a continuous manner so that they do not produce pulsating samples that are aerated in the return tube or upon discharge. Check valves are to be inspected to assure that they do not result in aeration of the sample.

Sampling equipment is not to be dropped into the well. This will cause degassing of the water upon impact, resulting in a loss of Volatiles.

The sample is to be transferred to a sample container in a way that will minimize agitation and aeration.

Clean sampling equipment must not be placed directly on the ground or other potentially contaminated surface prior to insertion into the well.

When collecting samples where volatile constituents are of interest a bailer will be used.

3.1.3.8 Field Filtration

Field filtration of samples will not be performed.

3.1.3.9 Field Analysis

Several of the parameters being sampled are physically or chemically unstable and should be analyzed in the field immediately after collection. Examples of unstable analytes include: pH, Eh (redox potential) and temperature. Although specific conductivity is relatively stable, it is recommended that it be analyzed in the field. Turbidity should also be measured in the field in order that the lowest feasible turbidity be achieved to ensure that particulate matter does not influence the analytical result. If the turbidity reading in the field exceeds the highest reading the meter can achieve, a sample must be submitted to the laboratory for analysis in addition to the field reading. Meter probes should not be placed in sample containers being submitted for laboratory analysis. Separate containers of field beakers should be used for field analysis.

The calibration of any field meters or test kits must be checked at the beginning of each use, according to the manufacturers specifications.

3.1.3.10 Sample Containers and Preservation

A summary table of the recommended bottle types, preservation and holding times for the project is provided in the QAPP (Appendix C) as Table 2-1, Sample Bottle Types, Preservation & Holding Times. Bottles used will be supplied by the laboratory.

3.2 Sample Containers and Preservation

A summary of the recommended bottle types and preservation for the project is provided in Superfund Target Compound List and Contract Required Quantitation Limit.

3.3 Sample Labeling

Preprinted sample labels will be affixed to sample bottles prior to delivery to the site. The following information is required on each sample label:

ALB site,
Date and time of sample collection,
Sampler's initials,
Contractor/company name,
Unique sample number,
Preservative, and
Analysis required.

Each sample will be given a unique identification name corresponding to the type of sample and the location from which it was taken.

Sample names will consist of the following parts:

M-LOC-##

where, M = Sample Medium:
S - Soil
W - Water

= Sample sequence number.

Quality control samples will be labeled as follows:

Rinse blank (equipment) identification numbers will have the prefix "RB" and will be numbered in the order in which they were taken during the specific sampling event and with the date of collection (e.g., RB1-3-15-98).

Trip blank identification numbers will have the prefix "TB" and will be numbered in the order in which they were taken during the specific sampling event, as well as the month, day, and year (e.g., TB1-3-15-98).

Blind duplicate samples will be assigned an arbitrary designation by the sampler. The sampler will record in the field notebook the arbitrary designation along with the correct designation of the sample location from where the blind duplicate was obtained, the month, day, and year, and the suffix "DUP." The arbitrary designation submitted to the laboratory on sample bottle labels or on the chain-of-custody form will not include the suffix "DUP" or other indication that the sample is a duplicate.

Samples will be promptly labeled upon collection. The VOC sample containers will then be placed in a resealable plastic bag and immediately placed in a cooler with sealed bags of ice.

3.4 Sample Packaging and Shipping

Sample packaging and shipping procedures are designed to ensure that the samples will arrive at the laboratory intact and with the proper chain-of-custody forms. Samples will be prepared for shipment as outlined below:

Ensure that sample containers have the sample labels securely affixed to the container.

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

Complete the chain-of-custody form with the required sampling information and ensure that the recorded information matches the sample labels. If the designated sampler relinquishes the samples to other sampling or field personnel for packing or other purposes, the sampler 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.

Using duct tape, secure the outside drain plug at the bottom of the cooler.

Place one to two inches of cushioning material at the bottom of the cooler.

Place the sealed sample containers into the cooler.

Place ice in plastic bags and seal. Place loosely in the cooler.

Fill the remaining space in the cooler with cushioning material.

Place chain-of-custody forms in a plastic bag and seal. Tape the forms to the inside of the cooler lid.

Close the lid of the cooler and secure with tape.

Secure chain-of-custody seal to exterior of cooler.

Samples will be shipped to the laboratory within 48 hours of the time of collection. Shipments will be accompanied by the chain-of-custody form identifying the contents. The original form will accompany the shipment; copies will be retained by the sampler for the sampling office records.

4.0 Decontamination

Single-use disposable items will be used whenever possible to minimize field decontamination.

Hand augers, stainless-steel spatulas, split-barrel samplers and Geoprobe tools will be decontaminated between each use following the standard procedures.

Other sample handling tools (e.g., spatulas) will either be single-use disposable items or will be similarly decontaminated between each use.

5.0 Sample Custody and Documentation Procedures

5.1 Field Sample Custody

Field sample custody assures that samples are not tampered with from sample collection through transport to the analytical laboratory. Persons will have custody of the sample when the samples are in their physical possession, in their view after being in their possession, or in their personal possession and secured. When samples are secured in a restricted area accessible only to authorized personnel, they will be deemed in the custody of such authorized personnel. Field custody documentation consists of both field logbooks and chain-of-custody forms.

5.2 Chain-of-Custody Forms

A chain-of-custody form is a mechanism for tracing custody from the time of collection through reporting of results. The form is initiated by the sampler, who will note the sample location, sampling date and time, and sample matrix and parameters of interest. The sampler then signs the form, includes any pertinent remarks about the samples, and seals it in the sample cooler. Any transfer of samples from individual to individual must be noted on the chain-of-custody form.

5.3 Field Log

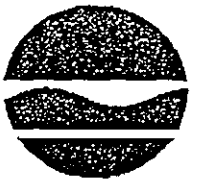
Field logs will contain a daily record of events, observations, and measurements during field activities. Logs may include notebooks or forms. Information pertinent to sampling activities will be recorded in the log. Entries in the log will include the following:

- Name and title of author
- Contractor/company name
- Name(s) of field crew
- Location of sampling activity
- Sample matrix
- Number/volume of samples
- Date and time of collection
- Preservatives used
- Description of sample location
- Sampling method
- Sample identification numbers
- Field observations
- Field measurements

ATTACHMENT A

GC STANDARD OPERATING PROCEDURE

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010



John P. Cahill
Commissioner

Division of Environmental Remediation
QC Guidelines for GC Field Screening Methods

The Standard Operating Procedure (SOP) for the GC field method must be included in the project work plan and submitted to the Quality Assurance Unit (QAU) for review. The SOP must include:

- A detailed step-by-step procedure for the analysis method.
- A 3-point Initial Calibration.
  Quality Control (QC) criteria: correlation co-efficient ≥ 0.95
- A mid-point calibration every 10 samples or daily, whichever is more frequent.
  QC criteria: Relative Percent Difference (RPD) ≤ 30 percent
- A blank run after calibration standards.
  QC criteria: Peak area for target compounds less than half the area of the reporting detection limit
- Duplicate analysis on 10 percent of the samples.
- Laboratory confirmation, by a NYSDOH ELAP certified laboratory, on 10 percent of the samples.

The resume of the Field Analyst, including relevant experience and education, must also be submitted for review by the QAS.

Contact Christine McGrath (518) 457-9280 with any questions on using GC Field Screening Methods.

STANDARD OPERATING PROCEDURE FOR FIELD GC ANALYSIS OF SOIL SAMPLES

1.0 Summary of Procedure

This Standard Operating Procedure (SOP) is the field screening procedure to be followed for the soil gas and volatile chlorinated solvent survey of the soil samples from the remediation sites to be conducted by Fagan Engineers. The method entails dynamic headspace sampling followed by direct syringe injection high resolution gas chromatographic separation with sequential ECD/PID detection (electron capture /photoionization detectors). The target compounds and those upon which the calibration is based are those listed in EPA Method TO-14. All methodology and procedural steps are aimed at assuring compliance with the New York State Department of Environmental Conservation's requirements under 'Division of Environmental Remediation Quality Control for GC Field Screening Methods'.

2.0 General Outline of the Remainder of the Procedure

3.0 Apparatus & Materials

3.1 GC Unit: HNU Model 311D-GC Portable Gas Chromatograph with Dual Detector Configuration (ECD/11.7eV PID)
3.2 GC Column: 30 meter DB-624 column; 0.53 mm ID; 3.0 um film thickness (J&W Scientific #145-1334)
3.3 Calibration Std.: Scott TO-14 Calibration Mix 1 (Supelco Chromatography Products #5-09981)
3.4 Large Syringe: Hamilton
3.5 Several 5-ml gas-tight syringes
3.6 Tedlar bags: 1-liter
3.7 Carrier Gas: Ultrahigh purity Nitrogen
3.8 Carrier Gas Flow Meter
3.9 Vacuum Pump
3.10 Heated Water Bath (for sampling in <0°C temperatures)

4.0 HNU Model 311D-GC Set-up

4.1 Connect the instrument to line power and turn on.
4.2 At the keypad request, input the proper date and time at the keypad.
4.3 Carrier Gas Supply

The on-board carrier gas cylinder must be filled to 1000 psi (max) with ultrahigh purity nitrogen (or other suitable carrier gas) using the HNU 'Carrier Gas Fill Adapter'. See instrument manual for instructions on this procedure.

4.3.1 Connect carrier gas tubing to the 'Carrier' fitting on top of the GC.
4.3.2 Open carrier gas cylinder 'Main Shut-Off Valve' completely.
4.3.3 Adjust pressure regulator valve to 70 psi.
4.3.4 With the nitrogen gas flow meter attached to the detector vent line, open the 'Column Pressure Adjust' knob on the GC to adjust the column nitrogen flow rate to 20 cc/minute.

4.4 With the RS-232 adapter cord connected from the computer to the proper RS-232 port on the GC, start the Peakworks program by double clicking on the Peakworks icon on the computer screen.
4.5 Under the 'File' Menu, open the job file: TO14.job. This will load the proper method for the chromatographic analysis.

The run conditions for this method can be viewed in the 'Edit' Submenu of the 'Method' Menu. Verify that the parameters are the following:

1. Initial Oven Temperature: 40°C
2. Injector/Detector Temperature: 180°C
3. Analysis Time: 23 minutes
4. Ramping: ON
5. Hold Time 1: 1 minute
6. Ramp 1: 8°C/minute
7. Hold Time 2: 3 minutes
8. Hold Temperature 2: 200°C
9. Syringe Inject: ON
10. Ramp2; Hold Time2, Hold Temp.2: 0

The Detector A & B parameters can be viewed under those selection in the 'Method' Menu. Verify that the parameters for both detectors are:

1. Noise & Baseline time: 0:01
2. Noise & Baseline length: 0:03
3. Detect Method: Area
4. Area Reject: 100
5. Peak Algorithm: Tangent Skimming
6. Range: 10
7. Plot Attenuation: 1
8. Segment Width: 10
9. Units: ppm

5.0 Preparation of Calibration Standards

An initial three point calibration is required prior to the performance of any sample analyses. Instead of purchasing three costly high purity standards, a high level NIST traceable standard can be diluted to provide additional accurate standards for the initial three-point calibration. The primary calibration standard will be 'Scott TO-14 Calibration Mix 1' (Supelco Chromatographic Products; Catalog #5-09981; NIST traceable). This standard contains each of the 39 compounds listed under the EPA TO-14 Method at a level of 1 ppm (in nitrogen). It will be diluted with ultrahigh purity nitrogen to the 250-ppb and 500-ppb level.

5.1 Dilutions & Filling Tedlar bags

The standard dilutions are performed on a volume basis by the following procedure. A cylinder of high purity nitrogen, a vacuum pump, a 500 ml Hamilton syringe with a swagelock fitting, and a Tedlar bag with a swagelock fitting are interconnected with the necessary teflon or metal tubing and shut off valves so that any portion of the system can be evacuated with the vacuum pump or filled with either the nitrogen or high level calibration standard. With the proper placing of shut-off valves any portion of the system should also be able to be shut off from the rest of the system. The only restriction on the tubing lengths is that the tubing between the Hamilton syringe and the Tedlar bag should be as short as possible to minimize errors in dilution of the calibration standard. A 3 mm diameter septum should be placed on each Tedlar bag and secured with double-sided tape in order to sample from the bag once it is filled with a standard.

5.2 1-ppm Calibration Standard

Tedlar bag samples of this standard for syringe injection can be made by:

5.2.1 Evacuating a Tedlar bag
5.2.2 Filling the bag directly with sample from the 'Scott TO-14 Calibration Mix 1'

5.3. 250-ppb Calibration Standard

5.3.1 Evacuate a 1-liter Tedlar bag with the vacuum pump.
5.3.2 Fill the large Hamilton Syringe with 250 ml of the 'Scott TO-14 Calibration Mix 1'.
5.3.3 Inject that 250 ml of 1-ppm standard into the Tedlar bag using the appropriate valves.
5.3.4 Shut off the Tedlar bag valve from the system and evacuate the rest of the system.
5.3.5 Fill the Hamilton syringe with nitrogen and inject it into the Tedlar bag. Follow this with a 250 ml nitrogen injection into the bag so that a total of 1-liter has been added to the bag (including the 250 ml of calibration mix).
5.3.6 This Tedlar bag contains 250 ppb each of the compounds of interest in nitrogen.

5.4 500-ppb Calibration Standard

5.4.1 Evacuate a 1-liter Tedlar bag with the vacuum pump.
5.4.2 Fill the large Hamilton Syringe with 500 ml of the 'Scott TO-14 Calibration Mix 1'.
5.4.3 Inject that 500 ml of 1-ppm standard into the Tedlar bag using the appropriate valves.
5.4.4 Shut off the Tedlar bag valve from the system and evacuate the rest of the system.
5.4.5 Fill the Hamilton syringe with 500 ml nitrogen and inject it into the Tedlar bag so that a total of 1-liter has been added to the bag (including the 500 ml of calibration mix).
5.4.6 This Tedlar bag contains 500 ppb each of the compounds of interest in nitrogen.

6.0 Calibration of the HNU 311D Chromatograph

6.1 Initial Calibration

6.1.1 Check that the proper method (TO14.job) is loaded in Peakworks.
6.1.2 Using a clean gas-tight 5-ml syringe remove 1ml of gas from the 1-ppm calibration standard through the septum on the Tedlar bag.
6.1.3 Select 'Calibration 1 Acquire' from the Run Menu of the Peakworks program.
6.1.4 The run will be initiated with a auditory beep after ~10 seconds and on the beep inject the sample into the injection port.
6.1.5 When the run is complete, based upon the known elution order for the compounds (see EPA Method TO-14), go to the 'Components' Submenu of the 'Methods' Menu and input the name of the compound under the 'Component Name' heading, the retention time in minutes under 'Peak RT', and an appropriate retention time window width (~0.05

minutes to start). Also, check the on/off button for each compound. This information should be input for both detectors. Note that each detector is specific for different compounds and that the number of compounds observed and their areas will vary between the two detectors.

6.1.5.1 Retention Time Window Determination

The retention time window should be as narrow as possible to prevent misidentification of chromatographic peaks. During the course of the initial three-point calibration care should be taken to observe the general window within which most peaks fall. Usually analyst experience can determine a suitable window. A more rigorous method, if necessary, would be to make three injections of a calibration standard over the course of a 72-hour period. For each component the retention time window would be plus or minus 3 times the standard deviation the three absolute retention times. At each mid-point calibration below it should be checked to be sure that each compound has fallen within its proper retention time window. Enlarge the window for any component that falls outside the present window.

6.1.6 Go to the 'Standards' Submenu of the 'Methods' Menu and input the value 1.00 (for 1.00 ppm) in the 'Standard 1' column for each of the compounds that was observed on the respective detectors. The values for the 500 ppb and 250 ppb calibration standards (0.50 and 0.25 ppm) should be input at this time for each of the compounds under the heading 'Standard 2' and 'Standard 3', respectively. Before leaving this menu, select a single reference compound for each detector (benzene for PID detector and carbon tetrachloride for the ECD detector are suitable choices).

6.1.7 Using a clean 5-ml gas-tight syringe remove 1ml of gas from the 500 ppb calibration standard through the septum on the Tedlar bag.

6.1.8 Select 'Calibration 2 Acquire' from the Run Menu of the Peakworks program.

6.1.9 Again, when the beep sounds, inject the sample into the injection port.

6.1.10 Using a clean 5-ml gas-tight syringe remove 1ml of gas from the 250 ppb calibration standard through the septum on the Tedlar bag.

6.1.11 Select 'Calibration 3 Acquire' from the Run Menu of the Peakworks program.

6.1.12 Again, when the beep sounds, inject the sample into the injection port.

6.1.13 When all three calibration standards have been analyzed, the Peakworks software will determine the least squares best fit for the three standards and compute a correlation coefficient for each compound. Verify that each coefficient is >0.95. If any coefficient is <0.95:

6.1.13.1 Look at the plot for that compound to determine visually if any calibration standard appears to be off the best fit line more than the others. If so, reanalyze this calibration standard and verify that all coefficients are now >0.95. If there is still not compliance:

6.1.13.2 Reanalyze all three calibration standards and verify that all coefficients are now >0.95. If there is still not compliance:

6.1.13.3 Prepare fresh calibration standards as described in section 5.0 above and perform the entire initial three point calibration as described in section 6.1. When compliance with the minimum 0.95 correlation coefficient is made, save this multi-point calibration by selecting 'Save Multi-point Calibration Results' under the 'Run' Menu. Additional, save the entire method by selecting 'Save' under the 'Methods' Menu and under the 'File' Menu. The proper retention times and calibration are now input into the method and should only be modified if a change in method is made.

6.1.13.4 The information for the three calibration runs should be plotted out with retention times, area counts, and ppm levels and retained as hard copies for future reference. Any major deviation in subsequent calibrations from these values may indicate deterioration of the standard, loss of sensitivity of one of the detectors, inadvertent

changes in injection technique, and may be the hint for corrective or maintenance action.

6.2 Changes in Calibration Standards

Ideally the samples being analyzed should all fall within the confines of the lowest and highest concentration calibration standards used in the calibration procedure described above. If it is found that the samples contain target compound concentrations that are higher or lower than the calibration standard concentrations, the calibration range should be widened with the use of lower and higher concentration standards. The initial calibration procedure in 6.1 should be followed with a new set of three calibration standards. Any new desirable standards that are lower in concentration than the traceable 1-ppm standard can be diluted from it according to the method in 5.0, provided the minimum correlation coefficients values are met for each compound of interest. If higher concentration standards are necessary, a new traceable standard should be sought.

6.3 Prevention of Syringe Contamination

Syringes should be flushed numerous times with air after each use to prevent cross contamination and carry over problems. This applies to the routine sample analysis as well as during the calibration process. Particular care should be taken in cleaning the syringe after a sample with a high concentrations of any particular component has been injected. A blank should be injected with the syringe as described in 8.0 prior to a sample analysis if there is believed to be the possibility of such contamination. Having several clean syringes on hand in the field is useful.

7.0 **Midpoint calibrations**

In order to monitor the accuracy of the calibration method, a recalibration with the mid-point calibration standard, the 500 ppb standard, should be made no less often than after every 10 samples or on a daily basis, whichever yields the more frequent calibrations. This should be performed using the 'Calibration 2 Acquire' selection from the 'Run' Menu. When the run is completed, there should be a Relative Percent Difference (RPD) of no greater than 30% for the concentration reported for each compound compared to the concentrations from the initial 3-point calibration for this standard. The RPD is defined as:

$$RPD = (R_1 - R_2)/R_1 * 100$$

where:

R_1 = Concentration of the midpoint calibration standard based upon the best fit curve from the initial three-point calibration

R_2 = Concentration of the midpoint calibration from any succeeding analyses

If the RPD for any midpoint calibration is within the 30% criteria, the midpoint calibration should be saved as a single-point calibration and used for the next series of samples until the next midpoint calibration is performed. Save this calibration by selecting 'Save Single-point Calibration Results' under the 'Run' Menu.

If the RPD is greater than this, the following actions should be taken:

7.1 Reanalyze the same calibration standard and determine if an acceptable RPD is obtained. If so, continue to section 8.0.

7.2 If not, the detectors may have become dirty. Clean by the following procedure:

7.3.1 PID lamp - Turn the lamp off and remove the lamp from the housing. After allowing the lamp to cool, clean with the proper solvent (Freon or non-water soluble chlorinated organic solvents) and return to the housing. Turn the lamp on.

7.3.2 ECD detector - Increase the Injector/Detector temperature to 250°C and maintain at this temperature for 1hour. Return to 180°C.

7.3.3 Reanalyze the same calibration standard and determine if an acceptable RPD is obtained. If so, continue to section 8.0.

7.3 If not, make a fresh 500 ppb calibration standard from the 1-ppm calibration standard as described in section 5.4 above. Reanalyze this standard and determine if an acceptable RPD is obtained. If so, continue to section 8.0.

7.4 If not, the initial three point calibration should be performed as described in section 6.1above. Sample analyses can continue after this.

8.0 **Blank Runs**

8.1 After each calibration analysis, a blank shot should be run to verify that the peak areas for the target compounds are less than half the area of the reporting detection limit. This sample should be 1 ml of nitrogen from glass sample vial that has been purged with ultrahigh purity nitrogen for several minutes then tightly sealed. If the area for any compound exceeds this criteria, the following steps should be taken:

8.1.1 Ramp the oven temperature to 200°C and bake out the column for 1 hour.

8.1.2 Return the oven temperature to the normal operating temperature.

8.1.3 Shoot another blank to determine if the criteria is met. If so, continue to 8.4. If not, continue to 8.6.

8.1.4 Reanalyze the mid-point calibration standard.

8.1.5 Reanalyze the blank to verify compliance with this criteria.

8.1.6 If the criteria is still not met, take one of the following corrective measures:

8.1.6.1 The sample volume may be too large and the column is becoming overloaded, so shoot lower smaller amounts of sample until compliance is met over a series of calibration/blank analyses

8.1.6.2 Change the column to one with a thicker phase (higher capacity) and verify compliance.

8.1.6.3 Raise the level of the reporting detection limit to meet the results being obtained.

8.2 Detection limits

The minimum detection limits are determined by the concentration from a calibration standard at which the signal-to-noise ratio is found to be 3. This detection limit may vary with compound and instrument.

9.0 Sample Collection

9.1 At each location selected for analysis obtain a representative soil sample using the hand auger or trowel.
9.2 Clean/decontaminate the sample collection tool after each use by cleaning with detergent, rinsing with water or methanol, followed by multiple rinses with distilled water.
9.3 Fill a clean 16-ounce glass laboratory vial one-half full with the sample. The vial should be shaken lightly to insure compactness of the sample so that all samples contain reasonably equivalent volumes.
9.4 Seal the laboratory vial tightly to minimize diffusion.
9.5 The sample should be prepared and analyzed no less than 30 minutes after collection.
9.6 For samples that are to be stored for later shipment (see section 13.0) a field blank sample should be prepared by filling a clean glass sample vial one-half full with distilled water. This sample should be carried through the same sampling, shipment, storage, and handling procedures as the actual sample.

10. Sample Preparation

10.1 If the ambient temperature is below 0°C, place the vial in a water bath at 25°C or in a heated location and allow it to equilibrate for 15 minutes. Otherwise, proceed immediately to 10.2.
10.2 Shake the sample vigorously for 30 seconds.
10.3 Examine the inside of the vial for any soil attached to the underside of the septum in the vial. Tap any soil or solid material off the septum. No soil should come in contact with the syringe during headspace sampling.
10.4 Let the vial sit for 15 seconds as a headspace vapor development period.

11.0 Sample Holding Time and Analyses

11.1 Sample will incubate in headspace jar for 15 minutes at 20°C.
11.2 GC analysis will be performed on headspace air sample at 15 minute mark.
11.3 Immediately after the 15 second vapor development period of the sample preparation step, the sample should be analyzed.
11.4 Using the 5-ml gas-tight syringe, take a 1 ml sample from the vial.
11.5 Initiate the sample run with the 'Acquire Run' selection in the 'Run' Menu.
11.6 When the run has ended, select 'Edit Run' from the 'Run' Menu. In the comment box give a description of the sample and any pertinent details for documentation.

12.0 Sample Duplications

Ten percent of all samples analyzed must be done so in duplicate. Every 10^{th} sample should be analyzed twice, the duplication immediately following the initial run for best agreement.

13.0 Analysis Sequence

Unless quality control considerations indicate additional calibrations, blank runs, etc, the following would be the GC runs performed and their order of performance.

13.1 Calibration Standard - 1ppm
13.2 Blank run
13.3 Calibration Standard - 500 ppb

13.4 Blank Run
13.5 Calibration Standard - 250 ppb
13.6 Run Blank
13.7 Duplicate Analysis of Sample 10
13.8 Midpoint Calibration - 500 ppb
13.9 Blank run
13.10 Repeat 14.7-14.10 with the next 10 samples until all samples are analyzed or until quality control dictates additional injections (Every sample number ending in 0 being run in duplicate. These numbering choices are arbitrary)

14.0 Quality Control

The quality control activities and requirements are interspersed throughout the procedure and corrective & maintenance actions are provided whenever any quality control criteria is not met.

Whenever an analysis indicates that the calibration or instrument functioning is not in compliance with a quality control criteria, then those samples which are suspect due this noncompliance should be reanalyzed.

15.0 Documentation

All data including computer files and hard copy chromatograms and concentration tables should be retained.

APPENDIX C

QUALITY ASSURANCE PROJECT PLAN

APPENDIX C

QUALITY ASSURANCE PROJECT PLAN
FORMER AMERICAN LaFRANCE SITE
100 EAST LaFRANCE STREET
ELMIRA, NEW YORK

This Quality Assurance Project Plan (QAPP) describes the methods and procedures to be employed for analyses activities to be conducted in conjunction with implementing the Site Investigation Work Plan for the Remedial Alternatives Report for the American LaFrance Brownfield site at 100 LaFrance Street, Elmira, New York. This QAPP has been prepared by Fagan Engineers (FE). The QAPP provides the quality assurance and quality control (QA/QC) requirements for these environmental data collection activities as well as for the subsequent steps of data evaluation and management. This document is a companion to the SAMP which describes the sampling procedures.

1.0 Introduction

1.1 Overview of Environmental Data Collection and Management Activities

As part of the Site Investigation Work Plan (SIWP) soil samples will be collected to delineate clean areas, areas of contamination that are below the clean-up objective levels outlined in NYSDEC TAGM 4046 and areas of potential contamination that may require remedial actions. This soil, together with soil gas and groundwater sampling will be broken down into an initial investigation phase and a follow-up sampling to further delineate and define areas of concern found in the initial investigation phase

Soil gas samples collected at the site during the investigation will be field screened for volatile organic compounds using a portable gas chromatograph (GC). This procedure will be used to determine both vertical and lateral extent and approximate levels of contamination.

This data will be collected, analyzed, and managed using procedures that ensure the data can be reliably used in decision making. Quality control (QC) is defined as the routine application of procedures for obtaining prescribed standards of performance in the monitoring and measurement process. These procedures include the following:

- Collection of representative samples,
- Preservation of sample integrity,
- Calibration of sampling and analytical equipment,
- Duplication of sample analysis for precision,
- Spiking of samples to evaluate accuracy, and
- Decontamination of equipment.

Quality assurance (QA) is the review and oversight, at each of the planning, implementation, and completion stages of an environmental data collection process, to assure that the data generated meet the specified quality objectives. The primary QA objective is to develop and implement procedures for sampling, chain-of-custody, laboratory and field analyses, instrument calibration, data reduction and reporting, internal QC audits, preventive maintenance, and corrective action. A QA program is a system of documented checks that ensures the authenticity and validity of the environmental data. The QAPP is an assemblage of management policies, objectives, principles, and procedures by which an agency, laboratory, or company outlines its program to produce data of known and accepted quality.

The activities associated with the collection of physical and chemical data include sampling, analysis, and data manipulation that can affect the validity of data. The environmental data collection activities for the American LaFrance Brownfield site will follow a formal QA program that adheres to the following U.S. Environmental Protection Agency (USEPA) and NYSDEC guidance:

- Region II CERCLA Quality Assurance Manual, USEPA Region II, October 1989;
- "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," (QAMS 005/80), December 1980;
- "Data Quality Objectives for Remedial Response Activities", EPA/540/G7/003 March 1987
- Preparing Perfect Project Plans, USEPA 1988

1.2 Project Organization and Responsibility

1.2.1 Project Coordinator

Fagan Engineers has been retained by the City of Elmira as the Project Consultant. Mr. Dennis A. Fagan, P.E. is the Project Coordinator. Mr. Fagan's responsibilities and duties on behalf of the City of Elmira and related to the collection, analysis, and management of environmental data are the following:

- Define project objectives and establish project policy and procedures;
- Review and analyze task performance with respect to plan requirements and authorizations;
- Review and approve project deliverables prior to submittal to NYSDEC;
- Serve as the primary communication link among NYSDEC, the project personnel and sub-contractors;

- Supervise QA/QC audits of project activities;
- Approve corrective actions resulting from audits; and
- Coordinate with the project personnel to ensure compliance with the Work Plans and QAPP.

1.2.2 Project Manager

Mr. Stephen Degerdon is the Project Manager directly responsible for activities performed by Fagan Engineers for this project. The Project Manager has decision-making authority on behalf of Fagan Engineers and is responsible for signing contracts, reports, and design documents. The Project Manager will provide QA management of the project within the responsibility of Fagan Engineers and will review documents prepared by Fagan Engineers.

As the Project Consultant, Fagan Engineers will conduct the following activities related to the collection, analysis, and management of environmental data:

- Establish and maintain comprehensive project files;
- Review contractor sampling procedures for compliance with the SAMP;
- Review laboratory data packages for compliance with the SAMP; and
- Serve as the primary communication link among the subcontractors.

1.2.3 Quality Assurance Officer

Mr. Edward T. Tietje, III, staff engineer with Fagan Engineers will be designated as the QA Officer (QAO) and will oversee the implementation of the project QA/QC plan to each subcontractors activities.

1.2.4 Site Investigation Implementation Contractors

In addition to Fagan Engineers, other sub-contractors which have not at this time been identified will be responsible for specific scopes of work under the supervision of and sub-contracted through Fagan Engineers for the City of Elmira to implement this site investigation.

Each firm will identify a project manager who will be responsible for overseeing their collection and use of environmental data.

The laboratory chosen for this project will be an NYSDOH, ELAP approved and NYSDOH, CLP laboratory approved for CLP PCB/Pesticides, CLP Semi-Volatiles, CLP Volatile Organics and CLP Metals. Copies of the laboratory QA/QC plans will be available and maintained in the project files by Fagan Engineers. ESARCO Laboratory will likely be the laboratory selected for this project.

1.3 Data Quality Objectives

Data quality objectives (DQOs) are qualitative and quantitative statements that specify the quality of the data required to support decisions made during site-related activities, and are based on the end uses of the data to be collected. Different data uses may require different levels of data quality.

Three analytical categories address various data uses and the QA/QC effort and methods required to achieve the desired level of quality.

The analytical categories are as follows:

- Screening Data

  Screening data affords a quick assessment of site characteristics or conditions. This DQO is applied to data collection activities that involve rapid, non-rigorous methods of analysis and QA. It is used to determine the degree of contamination relative to concentration differences, and preliminary health and safety assessment. A portable photoionization detector (PID) will be used to assess organic vapor content in the work area for health and safety concerns during the SI field work. Groundwater field sample measurements will be taken and shall include turbidity, temperature, conductivity, pH and Eh.

- Screening Data with Definitive Confirmation

  Screening data will rapidly identify and quantify site conditions, although the quantitation can be relatively imprecise. During SI at the ALF site, screening data include measurements using an HNu Model 311D portable gas chromatograph (GC) equipped with a 11.7 eV photoionization detector lamp, Hall electron capture detector (ECD), and DB624 capillary column (30m x 0.53mm) for monitoring on-site soil vapor. The portable GC field screening methods will be followed as per DER QC Guidelines and defined in the Work Plan Section 2.1.4 Soil Gas Survey. Equipment will be calibrated in accordance with the SAMP, Appendix B. No quantitative verification will be conducted. To "calibrate" PID measurements is an example of this DQO level for remedial investigation at the ALB site.

- Definitive Data

  Definitive data will be produced by a NYSDOH ELAP CLP certified laboratory and will be supported with a Category B deliverables report. Data will be generated using USEPA reference methods. Data is analyte-specific with confirmation of analyte identity and concentration. Methods produce raw data (e.g., chromatogram, spectra, digital values) in the form of paper printouts or computer-generated electronic files. Sampling and analysis of site soils and groundwater are examples of this DQO at the ALF site.

1.4 Organization of QAPP

Following this introductory, Section 2.0 presents the Field Sampling Procedures (FSP), describing the methods and procedures to be used in field sample collection and handling. Section 3.0 describes analysis procedures, including laboratory procedures, sample analysis, calibration, QC, and data management. Section 4.0 describes data reporting. Section 5.0 presents the procedures for auditing and any resulting corrective actions.

Table 2 - 1

SAMPLE BOTTLE TYPES, PRESERVATION AND HOLDING TIME

Number of Samples	Analysis	Method SW 846	Minimum Sample Size	Container	Preservative	Holding time	Storage
11	pH					analyze immediately	
11	Temperature					done on location	
11	Turbidity					analyze immediately	
11	Cyanide Total	9010	2 L. (aqueous)	glass or plastic	NaOH	14 days	4 degrees
55			500 g. (solid)	glass or plastic	none	14 days	4 degrees
11	Mercury	7470 / 7471	1 L. (aqueous)	glass or plastic	HNO3	28 days	4 degrees
55			500 g. (solid)	glass or plastic	none	28 days	4 degrees
11	Total Metals	7000 Series /	1 L. (aqueous)	plastic	HNO3	6 months	4 degrees
55		ICP 6010	500 g	plastic		6 months	
11	Volatile Organics	8240A / 8260	3 - 40 ml. (aqueous)	septum vials	HCl	10 days	4 degrees
55			3 - 4 oz. (solid)	teflon lined glass septa	none		
8		EPA 18 M	0.5 L. (gas)	Tedlar Bag	none	48 hours	
11	Semi-volatile Organics	8270 A	3 L. (aqueous)	amber glass container w	none	Extraction - 7 days	4 degrees
55			3 - 4 0z. (solid)	teflon lined lid	none	Extraction - 14 days	4 degrees
						Analysis - 40 days after extraction	
11	Pesticides & PCBs	8080	3 L. (aqueous)	amber glass container w	none	Extraction - 7 days	4 degrees
55			3 - 4 0z. (solid)	teflon lined lid	none	Extraction - 14 days	4 degrees
						Analysis - 40 days after extraction	

2.0 Field Sampling Procedures

During the SI, soil, soil vapor and groundwater samples will be collected at various locations to delineate areas of potentially affected soils.

2.1 Sampling Program Design

The sampling program will follow the SAMP (Appendix B) as set forth in the work plan. All macro cores will be pre-screened with a PID prior to handling and sampling (see Appendix D; HSCP, Section 6.0).

2.1.1 Soil Sampling

Soil sampling will follow the SAMP (Appendix B) as set forth in the work plan.

2.1.2 Field Analysis of Soil Gas

GC calibration, sampling and field analysis of soil gas will follow the SAMP (Appendix B) as set forth in the work plan.

The GC will be utilized as per DER QC Guidelines for Field Screening Methods and stated in the Work Plan Section 2.1.4 Soil Gas Survey and in a manner consistent with the manufacturers instructions. A representative from HNu will be available for technical assistance.

2.1.3 Water Sampling

Groundwater sampling will follow the SAMP (Appendix B) as set forth in the work plan.

The two-inch diameter monitoring wells will be installed into the shallow aquifer to an estimated depth of 25 feet. The Engineer will be responsible for determining the location of each well site and determining the ground elevation. Actual installed well depths will be based on depths of the target formations and interpretation of well cuttings. Logging of the wells will be required with split spoon samples taken continuously during drilling. The samples are to be analyzed by the Hydrogeologist and a boring log developed which is representative of the geologic column adjacent to the well. All wells shall be developed, after the well seal and grout have set, in order to remove native silts and clays from the well bore and to insure quality groundwater samples.

Initial groundwater samples will be collected from the three monitoring wells subsequent to well development. Additional samples may also be collected, if necessary, at other undefined locations to further delineate or confirm information relative to this SI.

Laboratory analysis parameters are listed in the SAMP, Table 2-1 and the Work Plan, Attachment A; Superfund Target Compound List, and as defined by NYSDEC, TAGM 4046.

2.2 Sample Collection and Handling Procedures

2.2.1 Sample Collection

***Soil Samples*:** Soil grab samples will be collected from soil borings at 20 points. Geoprobes will be used for sample collection using a four-foot macro core. Subsequent to field soil vapor sample collection, the macro cores will be split in half and grab samples collected as outlined in the SAMP.

The hand augers, stainless-steel spatulas, split-barrel samplers or Geoprobes will be decontaminated between each use by the following procedure:

- Wash with tap water and Alconox® detergent,
- Dry with lint-free cloth,
- Rinse with hexane,
- Rinse with analyte-free deionized water, and
- Air dry.

Other sample handling tools (e.g., spatulas) will either be single-use disposable items or will be similarly decontaminated between each use.

***Water Samples*:** Water samples will be grab samples collected directly from the monitoring wells using Teflon bailers in accordance with procedures outlined in the SAMP. Samples will be analyzed unfiltered for total metals.

***Field Soil Gas Samples*:** Soil gas samples will be collected as outlined in the SAMP and analyzed on site using a portable GC, operated in accordance with manufacturer's recommendations.

2.2.2 Sample Containers and Preservation

A summary of the recommended bottle types and preservation for the project is provided in Table 2-1, Sample Bottle Types, Preservation and Holding Time, of this QAPP. Bottles used will be supplied by the laboratory.

2.2.3 Sample Labeling

Preprinted sample labels will be affixed to sample bottles prior to delivery to the site.

The following information is required on each sample label:

- ALF site,
- Date and time of sample collection,
- Sampler's initials,
- Contractor/company name,
- Unique sample number,
- Preservative, and
- Analysis required.

Each sample will be given a unique identification name corresponding to the type of sample and the location from which it was taken. Sample names will consist of the following parts:

M-LOC-##

where, M	=	Sample Medium:
		S - soil
		W - water
		A - air
LOC	=	Location:
		Location will be as noted specific monitoring well
	Or	grid node identification point

= Sample sequence number.

QC samples will be labeled as follows

- Rinse blank (equipment) identification numbers will have the prefix "RB" and will be numbered in the order in which they were taken during the specific sampling event and with the date of collection (e.g., RB1-10-15-96).

- Trip blank identification numbers will have the prefix "TB" and will be numbered in the order in which they were taken during the specific sampling event, as well as the month, day, and year (e.g., TB1-10-15-96).

- Blind duplicate samples will be assigned an arbitrary designation by the sampler. The sampler will record in the field notebook the arbitrary designation along with the correct designation of the well from where the blind duplicate was obtained, the month, day, and year, and the suffix "DUP." The arbitrary designation submitted to the laboratory on sample bottle labels or on the chain-of-custody form will not include the suffix "DUP" or other indication that the sample is a duplicate.

Samples will be promptly labeled upon collection. The sample container will then be placed in a resealable plastic bag and immediately placed in a cooler with sealed bags of ice.

2.2.4 Sample Packaging and Shipping

Sample packaging and shipping procedures are designed to ensure that the samples will arrive at the laboratory intact and with the proper chain-of-custody forms.

Samples will be prepared for shipment as outlined below:

- Ensure that sample containers have the sample labels securely affixed to the container.

- Check the caps on the sample containers to ensure that they are properly sealed.

- Complete the chain-of-custody form with the required sampling information and ensure that the recorded information matches the sample labels. If the designated sampler relinquishes the samples to other sampling or field personnel for packing or other purposes, the sampler 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.

- Using duct tape, secure the outside drain plug at the bottom of the cooler.

- Place one to two inches of cushioning material at the bottom of the cooler.

- Place the sealed sample containers into the cooler.

- Place ice in plastic bags and seal. Place ice bags loosely in the cooler.

- Fill the remaining space in the cooler with cushioning material.

- Place chain-of-custody forms in a plastic bag and seal. Tape the forms to the inside of the cooler lid.

- Close the lid of the cooler and secure with duct tape.

- Attach a Chain of Custody Seal to cooler.

Samples will be shipped to the laboratory within 48 hours of the time of collection. Shipments will be accompanied by the chain-of-custody form identifying the contents. The original form will accompany the shipment; copies will be retained by the sampler for the sampling office records.

2.3 Custody Procedures

All samples will be transferred from individual to individual under very specific procedures. This applies to field transfers, delivery transfers and laboratory transfers.

2.3.1 Field Sample Custody

Field sample custody assures that samples are not tampered with from sample collection through transport to the analytical laboratory. Persons will have custody of the sample when the samples are in their physical possession, in their view after being in their possession, or in their personal possession and secured.

When samples are secured in a restricted area accessible only to authorized personnel, they will be deemed in the custody of such authorized personnel. Field custody documentation consists of both field logbooks and chain-of-custody forms.

2.3.2 Field Log

Field logs will contain a daily record of events, observations, and measurements during field activities. Logs may include notebooks or forms. Information pertinent to sampling activities will be recorded in the log. Entries in the log will include the following:

- Name and title of author
- Contractor/company name
- Name(s) of field crew
- Location of sampling activity
- Sample matrix
- Number/volume of samples
- Date and time of collection
- Preservatives used
- Description of sample location
- Sampling method
- Sample identification numbers
- Field observations
- Field measurements

2.3.3 Chain-of-Custody Forms

A chain-of-custody form is a mechanism for tracing custody from the time of collection through reporting of results. The form is initiated by the sampler, who will note the sample location, sampling date and time, and sample matrix and parameters of interest. The sampler then signs the form, includes any pertinent remarks about the samples, and seals it in the sample cooler. Any transfer of samples from individual to individual must be noted on the chain-of-custody form.

3.0 Analysis Procedures

3.1 Laboratory Sample Custody

All samples will undergo laboratory custody procedures to insure sample identification and integrity throughout the analysis process.

3.1.1 Laboratory Sample Receipt

Upon receipt at the laboratory, the sample custodian will inspect the samples for integrity, check the shipment against the chain-of-custody, and document any discrepancies on the chain-of-custody form. The laboratory will maintain samples under chain-of-custody at all times.

The laboratory will contact the firm that collected the samples (Fagan Engineers) to resolve discrepancies. When the shipment and the chain-of-custody are in agreement, the sample custodian will initiate an internal chain-of-custody.

The samples will be logged into the laboratory data system and a unique number will be assigned to each sample. The analyses required are specified by codes assigned to the sample at log-in.

A work order will be created, including a summary of the sample analyses to be completed.

3.1.2 Laboratory Sample Storage

After the samples are labeled, they will be moved to locked refrigerators where they will be maintained at 4° Celsius. Samples to be analyzed for VOCs will be stored separately to minimize the risk of contamination. Access to the refrigerators will be limited to authorized personnel.

Samples and sample extracts will be maintained in secure storage until disposal. Samples will be held for a minimum of 60 days and extracts for 90 days after data submission. The sample disposal date will be noted on the laboratory chain-of-custody by the sample custodian.

3.1.3 Laboratory Document Control

The goal of document control is to assure that documents for a specified project will be accounted for when the project is complete. Document control will begin with the initial client contact and continue throughout the project to include correspondence, faxed information, and phone logs. This information will be kept by the laboratory project manager for the duration of the project. When the project is complete, the information will be filed in the project case file. Internal chain-of-custody forms will be maintained by the sample custodian until sample disposal. Upon sample disposal, the forms will be placed into the project file.

3.2 Calibration Procedures and Frequency

Standards used in the calibration of equipment will be traceable, directly or indirectly, to USEPA-approved reference materials. Standards received will be entered into standard logs. Each analytical group will maintain standard preparation logs that track the preparation of standards used for calibration and QC purposes.

3.2.1 Field Instruments

Field analytical equipment will be calibrated prior to each day's use, in accordance with the manufacturer's instructions, and such calibration will be recorded in the field log (see Appendix B; SAMP, Section 3.1.2). Instruction manuals for the operation of field analytical equipment will be available with the equipment.

3.2.2 Laboratory Equipment

Calibration of laboratory equipment will occur as specified for the analytical methods used during the project. Records of instrument calibrations will be maintained by the laboratory.

3.3 Preventative Maintenance

All equipment must undergo regular maintenance to insure that QC is maintained at all times.

3.3.1 Field Instruments and Equipment

Prior to any field sampling, each piece of field equipment will be checked for proper operation. If the equipment is not operational, it will be serviced prior to use. Meters that require charging or batteries will be fully charged or have fresh batteries. If instrument servicing is required, the appropriate task manager is responsible for following the maintenance schedule and arranging for prompt service.

Non-operational field equipment will be either repaired or replaced. Appropriate spare parts will be maintained for field meters. Fagan Engineers is located within 1 mile of ALF site and maintains an inventory of common spare parts.

An operational procedure for calibration of various field equipment is provided within specific sections of the SAMP.

3.3.2 Laboratory Instruments and Equipment

Instruments and equipment will be serviced only by qualified personnel. Repairs, adjustments, and calibrations are documented in the appropriate logbook or data sheet.

Instrument Maintenance: Preventive maintenance of laboratory equipment will follow the guidelines recommended by the manufacturer. A malfunctioning instrument will be repaired by in-house staff or through a service call to the manufacturer as appropriate.

The laboratory shall maintain a sufficient supply of spare parts for its instruments to minimize downtime. Whenever possible, backup instrumentation shall be retained.

Analytical equipment is often maintained under a service contract, which allows for preventative system maintenance and repair on an "as-needed" basis. In any case, the laboratory shall have sufficient trained staff to allow for the day-to-day maintenance of equipment.

Equipment Monitoring: On a regular basis, the operation of balances, incubators, ovens, refrigerators, and water purification systems will be checked and documented. Any discrepancies will be immediately reported to the appropriate laboratory personnel for resolution.

3.4 Analytical Procedures

Table 2-1, Superfund Target Compound List in the SAMP (Appendix B) lists analytes of interest. The specific analytical methods to be employed for delineation activities are listed in Table 3-1, Analytical Methods of this QAPP. The methods for investigation and disposal characterization will be the most recent version of SW-846.

Table 3 - 1

ANALYTICAL METHODS

Samples	QC Samples	Analysis	Method SW 846
8	*3	pH	
8	*3	Temperature	
8	*3	Turbidity	
8	*3	Cyanide Total	9010
39	16		
8	*3	Mercury	7470 / 7471
39	16		
8	*3	Total Metals	7000 Series /
39	16		ICP 6010
8	*3	Volatile Organics	8240A / 8260
39	16		
8	*3	Semi-volatile Organics	8270 A
39	16		
8	*3	Pesticides & PCBs	8081
39	16		

Quality Control Samples Per Sample Delivery Group (SDG)

1 Duplicate
1 Equipment Blank
1 Matrix Spike
1 Marix Spike Duplicate

* No equipment blank sample will be taken for groundwater samples as only dedicated equipment will be used to collect samples.

3.5 Quality Control Checks

Laboratory duplicates (splits), laboratory blanks, standards, matrix spikes (MS), matrix spike duplicates (MSD), field duplicates, trip blanks, and rinse blanks will be analyzed to provide the means for assessing data quality from both the field and laboratory. Brief explanations of these QC samples follow:

- Laboratory duplicates will be used to measure analytical precision;
- Laboratory blanks will be used to assess reagent quality, background from analytical instruments, as well as analytical variability;
- Reference standards/materials will be used to assess analytical accuracy;
- Field duplicates will be used to assess the overall precision of environmental sampling and laboratory analysis;
- Matrix spikes and matrix spike duplicates are samples that are spiked with known quantities of specific compounds and results are recorded in percent levels of recovery to validate or verify quality control of analytical instrument during the specific run sequence.
- Trip blanks will be used for VOC analyses to measure the effects of storage, field sampling, and transport of the samples; and
- Equipment rinsate blanks (field blanks) will be used to determine the effectiveness of equipment cleaning procedures.

Detailed descriptions of the QC checks for field and analytical data are provided below. The frequencies of QC checks are provided in Table 3-2, Quality Control Samples.

3.5.1 Field Operations

To assess the sample decontamination procedures and the effects of sample handling, trip blanks and equipment rinsate blanks will be performed. Duplicate and replicate sampling will be performed to measure control within the sample collection system.

The trip blank will consist of a set of sample containers filled with certified laboratory grade, analyte-free water. The sample containers will not be opened in the field. The equipment rinsate will serve as a check on the equipment decontamination process. Analyte-free water will be passed through decontaminated sampling equipment, transferred to a sample bottle, and returned to the laboratory.

The analyte-free water to be used for trip blanks, field blanks, equipment rinsate blanks, and decontamination procedures will be demonstrated to be analyte-free water in accordance with the criteria or requirements set forth in USEPA guidance.

TABLE 3 - 2
QUALITY CONTROL SAMPLES

Quality control sample	Frequency of collection
Laboratory Duplicate	1 per 20 Environmental Samples (5%) or 1 per sampling event
Field/Equipment Blank	1 per 20 Environmental Samples (5%) or 1 per sampling event
Trip Blank	1 per Shipment of Samples for Volatile Organics Analyses

Field duplicates are two samples collected independently at a sampling location during a single act of sampling. A replicate or split sample is a single sample collected then divided in two equal parts. Duplicate soil samples submitted for VOC analysis will be co-located grab samples. Soils for duplicate samples will be collected from an aliquot of soil that has been homogenized by coning and quartering.

3.5.2 Laboratory Operations

Method blanks will serve as a measure of contamination attributable to a variety of sources, including glassware, reagents, and instrumentation. The method blank will be initiated at the beginning of an analytical procedure and is carried through the entire process.

Analytical data will be assessed for accuracy, precision, and completeness. Procedures used to assess the data will be in accordance with the appropriate laboratory method.

Surrogate spikes are organic compounds that have similar properties to those being tested. They will serve as indicators of method performance and accuracy in organic analyses.

Laboratory duplicates will serve to measure method precision in inorganic and supplemental analyses.

3.6 Quality Assurance Objectives

The QA for the SI are the same as described in Section 4 of this SI QAPP. Descriptions of accuracy, precision, completeness, representativeness and capability are provided in the QAPP. QAPP Tables 4-1, Quality Control Requirements for Inorganics and Table 4-2, Quality Control Requirements for Organic Methods, list the accuracy and precision objectives.

Completeness of laboratory tests goal is 100 percent. Any data deficiencies, and their effect on project goals, will be evaluated and summarized in the project report.

4.0 Data Reduction, Review and Reporting

4.1 Field Data Reduction, Review, and Reporting

Information collected in the field through visual observation, manual measurement, or field instrumentation will be recorded in field notebooks, data sheets, or forms. Such data will be reviewed by the appropriate project manager for adherence to this QAPP and consistency of data. Any concerns identified as a result of this review will be discussed with the field personnel, corrected if possible, and, as necessary, incorporated into the data evaluation process.

Field data calculations, transfers, and interpretations will be conducted by the field personnel and reviewed for accuracy by the appropriate project managers. Field documentation and data reduction prepared by field personnel will be reviewed by the appropriate project manager. Logs and documents will be checked for the following:

TABLE 4 - 1
QUALITY ASSURANCE REQUIREMENT
TCL - INORGANICS

Audit	Frequency	Control limits	Corrective action
Laboratory Control Sample Analysis	1 in 20 samples	Recovery within laboratory control limits.	1. Reanalyze and examine results of other QC analyses. 2. If recovery is still outside limits, and other QC criteria are met, prepare new LCS, reextract and reanalyze. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. 4. Document corrective action.
Matrix Spike (MS) & MS Duplicate Analysis	1 per group of similar concentration and matrix, 1 per case of samples, or 1 in 20, whichever is greater.	Recovery within laboratory control limits.	1. Reanalyze. 2. If recovery is still outside limits, qualify data. 3. Document corrective action.
Laboratory Duplicate analysis	1 per group of similar concentration and matrix, 1 per case of samples, or 1 in 20, whichever is greater.	Recovery within laboratory control limits.	1. Investigate problem and reextract or reanalyze. 2. Document corrective action.
Field Duplicate Analysis	1 per matrix and analytical batch and every 20 samples of similar matrix	50% RPD for waters and 100% RPD for soil.	If these criteria are not met, sample results will be evaluated on a case by case basis.
Furnace Analysis	Every sample must be injected in duplicate and spiked; method of standard addition is required when sample absorbance or concentration ≥50% of spike concentration and % recovery is not within control limits.	Recovery and RSD within method requirements.	1. Reanalyze. 2. If limits are still exceeded, qualify data. 3. Document corrective action.

TABLE 4 - 1 continued
QUALITY ASSURANCE REQUIREMENT
TCL - INORGANICS

Audit	Frequency	Control limits	Corrective action
Calibration Verification	Calibrate daily and each time instrument is set up; verify at more frequent of 10% or each 2 hours.	Within laboratory control limits.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action - samples cannot be analyzed until calibration control limit criteria have been met.
Calibration Blank	At beginning and end of run and at a rate of 10% during run.	Less than the Reporting Limit.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document corrective action - samples cannot be analyzed until calibration control limit criteria have been met.
Preparation Blank Analysis	1 per batch of samples digested, or 1 in 20, whichever is greater.	Less than the Reporting Limit	1. Reanalyze. 2. If limits are still exceeded, clean instrument and recalibrate analytical system. 3. Document corrective action - samples cannot be analyzed until blank criteria are met.
Method Blank Analysis	Prior to sample analysis; every 20 samples, and with each analytical batch	Less than the Reporting Limit.	1. Reanalyze. 2. If limits are still exceeded, clean instrument and recalibrate analytical system. 3. Document corrective action - samples cannot be analyzed until blank criteria have been met.
Field/Equipment Blank Analysis	Every 20 samples	Less than the Reporting Limit.	1. Investigate problem. 2. Write an explanation.
Reagent Blank	1 in 10 or with every batch	Less than the Reporting Limit.	1. Reanalyze. 2. If recovery is still outside control limits, qualify the data. 3. Document corrective action.

TABLE 4 - 2
QUALITY ASSURANCE REQUIREMENT
TCL - ORGANICS

Audit	Frequency	Control limits	Corrective action
Initial Calibration	Prior to sample analysis and when continuing calibration criteria are not met.	Three concentrations bracketing expected concentration range for compound of interest. RSD criteria listed in method must be met, otherwise calibration curve must be used for quantitation.	1. Identify and correct problem. 2. If criteria are still not met, recalibrate. 3. Document corrective action - samples cannot be analyzed until calibration control limit criteria are met.
Continuing Calibration	Daily	Within method specified criteria.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate. 3. Document corrective action - samples cannot be analyzed until calibration control limit criteria are met.
Method Blank Analysis	Prior to sample analysis; every 20 samples, and with each analytical batch	Less than the Reporting Limit.	1. Reanalyze 2. If limits are still exceeded, clean instrument and recalibrate analytical system. 3. Document corrective action - samples cannot be analyzed until blank criteria have been met.
Field/Equipment Blank Analysis	Every 20 samples	Less than the Reporting Limit.	1. Investigate problem 2. Write an explanation.

TABLE 4 - 2 continued
QUALITY ASSURANCE REQUIREMENT
TCL - ORGANICS

Audit	Frequency	Control limits	Corrective action
Laboratory Control Sample Analysis	1 in 10 samples or with each analytical batch whichever is more frequent	Recovery within laboratory control limits	1. Reanalyze and examine results of other QC analyses. 2. If recovery is still outside limits, and other QC criteria are met, prepare new LCS, reextract and reanalyze. 3. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS.
Surrogate Spike	All samples and blanks (including MS/MSD)	Recovery within laboratory control limits.	1. Reanalyze. 2. If recovery is still outside control limits, qualify the data. 3. Document corrective action.
Matrix Spike (MS) & MS Duplicate Analysis	1 per group of similar concentration and matrix, 1 per case of samples, or 1 in 20, whichever is greater	Recovery within laboratory control limits.	1. Reanalyze. 2. If recovery is still outside limits, qualify data. 3. Document corrective action.
Laboratory Duplicate Analysis	1 per group of similar concentration and matrix, 1 per case of samples, or 1 in 20, whichever is greater	Recovery within laboratory control limits.	1. Investigate problem and reextract or reanalyze. 2. Document corrective action.
Field Duplicate Analysis	1 per matrix and analytical batch and every 20 samples of similar matrix	50% RPD for waters and 100% RPD for soil.	If these criteria are not met, samples results will be evaluated on a case by case basis.
Trip Blanks	1 per shipment of samples	Less than the Reporting Limit	1. Investigate problem. 2. Write an explanation.

- General completeness,
- Format,
- Readability,
- Usage of appropriate procedures,
- Appropriate instrument calibration and maintenance,
- Reasonableness in comparison to present and past data collected,
- Correct sample locations, and
- Correct calculations and interpretations.

Where appropriate, field data forms and calculations will be processed and included in appendices to the appropriate report. The original field logs, documents, and data reductions will be kept in the project file at the appropriate contractor's office.

4.2 Laboratory Data Reduction, Review, and Reporting

The calculations to be used for data reduction are specified in each of the analysis methods referenced previously. Whenever possible, analytical data will be transferred directly from the instrument to a computerized data system. Raw data will be entered into permanently bound laboratory notebooks. The data entered will be sufficient to document factors used to arrive at the reported value.

Concentration calculations for chromatographic analyses (volatile organic compounds [VOCs], semivolatile organic compounds [SVOCs], and polychlorinated biphenyls [PCBs]) are based on response factors. Quantitation will be performed using either internal or external standards in accordance with the analytical method.

Inorganic analyses are based on regression analysis. Regression analysis will be used to fit a curve through the calibration standard data. The sample concentrations will be calculated using the resulting regression equations.

Soil values will be reported on a dry-weight basis. Unless otherwise specified, values will be reported uncorrected for blank contamination.

Raw data will be examined to assess compliance with QC guidelines. Surrogate, MS, and QC check sample recoveries will be reviewed, in addition to checking samples for possible contamination or interferences. Concentrations will be checked to ensure that the systems are not saturated; if necessary, dilutions will be performed.

Any deviations from the guidelines will call for corrective action. Those deviations determined to be caused by factors outside the laboratory's control, such as matrix interference, will be noted with an explanation in the report narrative. Calculations will be checked and the report reviewed for errors and oversights.

Once a report is complete, it will be reviewed for discrepancies, errors, or omissions. The data will then be submitted to the laboratory project manager for review. They will review the package, see that any necessary corrections are made, and a copy of the package will be filed in the laboratory project file.

The standard data package for the SI initial phase at ALF site includes, at a minimum, the following items:

- Narrative,
- Analytical results, and
- QC results.

Analytical results will be reported according to analysis type, and including the following information, as applicable:

- Sample ID,
- Laboratory ID,
- Date of collection,
- Date of receipt,
- Date of analysis,
- Results, and
- Detection limits.

Applicable QC results will be reported as follows:

- Trip blank results,
- Surrogate spike recoveries,
- MS/MSD recoveries,
- Control sample recoveries,
- Duplicate sample results, and
- Method and equipment blank results.

Sample results on the report forms will be corrected for dilutions.

4.3 Review of Laboratory Data Packages

Review of laboratory raw data and ASP Category B data packages will be performed by subcontractors yet to be selected and will provide a Data Usability Summary Report (DUSR). Each of these firms have previously provided third party data validation on NYSDEC projects. The DUSR will include an assessment of completeness of the data package, compliance with general method guidelines, holding times QC data, verification of results of raw data and QC data corresponding to data summary sheets and QC verification forms and project-specific requirements. Specifically, this evaluation will include the following:

- Holding times,
- Blank contamination,
- Surrogate spikes recoveries (where applicable), and
- MS and MSD (where applicable).

The review process will provide information on general method and project compliance, will describe data deficiencies, protocol deviations and QC problems and their effects on data usability. The DUSR report is not intended as an exhaustive evaluation of method performance. Table 4-1, Quality Control Requirements for TCL Inorganics and Table 4-2, Quality Control Requirements of TCL Organic Analysis define the quality assurance levels acceptable for this SI Work Plan.

4.4 Project File

Documentation will be placed in a single project file, which will be maintained by Fagan Engineers. This file will consist of the following components:

- Agreements (filed chronologically),
- Correspondence (filed chronologically),
- Memos (filed chronologically), and
- Notes and data (filed chronologically by topic).

Reports (including QA reports) will be filed with correspondence. Analytical laboratory documentation and field data will be filed with notes and data. Filed materials may be removed by authorized personnel on a temporary basis only.

4.5 Quality Control Reports to Management

QC reports will be submitted as documentation of compliance with QA/QC objectives. The reports also serve to update the status of the project and to indicate any changes or deviations from the initial plan. Items to be included in the reports include the following:

- Changes to this QAPP;
- Summary of QA/QC programs;
- Results of systems and performance audits;
- Significant QA/QC problems, recommended solutions, and results of corrective action;
- Data quality assessment;
- Evaluation of compliance with DQOs and the resulting impact on decision making; and
- Limitations on the use of measurement data.

4.6 NYSDEC Reporting

A complete NYSDEC ASP Category B deliverables package of laboratory analyses conducted as part of the SI will be provided to the NYSDEC Project Coordinator within 30 days of receipt of final data by the City of Elmira or Fagan Engineers. A preliminary raw data report of the laboratory analyses results will be available to the NYSDEC within 21 days of the date the final sample is collected. In addition, the QA/QC reports which evaluate the laboratory data and sampling and analytical procedures DUSR Report used for each sample will also be provided to the NYSDEC Project Coordinator within 30 days of receipt by the City of Elmira or Fagan Engineers.

5.0 Audit And Corrective Action

Laboratory and field work conducted as part of the project may be subject to performance and systems audits. Performance audits check the operation of a specific study component such as a sampling method or an analytical procedure. Systems audits are broader and include a thorough evaluation of both laboratory and field QA methods, such as data validation procedures, corrective action procedures, or sample custody procedures. Audits may be internal (conducted by QA personnel within the organization being audited) or external (conducted by the NYSDEC or another outside agency).

Audits are randomly scheduled by QA personnel and are generally not announced beforehand. If QA personnel find what seems to be a systematic problem with a particular component of the sampling and analysis program, they will normally perform a series of audits on related activities to identify and correct the problem. Audit results are incorporated into the project reporting system, normally in the monthly report.

5.1 Laboratory Audits

Fagan Engineers or the City of Elmira may conduct an independent audit of the project laboratories to verify analytical capability and compliance with the QAPP. The laboratory contracted will be a NYSDOH, ELAP, ASP / CLP certified laboratory.

In addition, the project laboratories can demonstrate their capabilities through the analyses of performance evaluation samples supplied by the USEPA or NYSDOH. The performance evaluation sample analyses will be performed at the request of the NYSDEC.

5.2 Field Audits

Internal performance and systems audits of field activities at the ALF site will be coordinated by the Project Manager. If the Project Manager deems necessary, a field audit will be conducted to verify that the project sampling procedures are being correctly followed.

A checklist will be prepared based on information contained in the QAPP. Using the checklist, auditors will evaluate whether field personnel are operating in compliance with procedures specified in these plans, including:

- Equipment calibration,
- Field documentation,
- Sample collection,
- Sample labeling, handling, and custody,
- Data collection and record keeping, and
- Equipment and personnel decontamination.

Audit reports will be submitted to the NYSDEC. The report will summarize the audit findings, including deficiencies which adversely affect the data. Any corrective action taken will also be included in the report.

H:\WPDATA\97-150\QAP.818

APPENDIX D

HEALTH AND SAFETY CONTINGENCY PLAN

APPENDIX D

HEALTH AND SAFETY/CONTINGENCY PLAN
FORMER AMERICAN La FRANCE SITE
100 EAST La FRANCE STREET
ELMIRA, NEW YORK

1.0 INTRODUCTION

1.1 Scope And Objectives

On behalf of the City of Elmira, Fagan Engineers has prepared this Site Investigation (SI) Work Plan for site investigation and selected remedial actions at the former American LaFrance Brownfield (ALF) site 100 East LaFrance Street, in the City of Elmira, in Chemung County, New York. This document presents the health and safety procedures to be implemented for site personnel engaged in these field activities. This SI Work Plan has been prepared in response to the Clean Water / Clean Air Bond Act Environmental Restoration of Brownfield Sites, Title 5, 1996.

The purpose of this Health and Safety/Contingency Plan (HSCP) is to protect the project employees and public from any potential exposures during activities involving potentially impacted soils and water. The Site Investigation Work Plan describes the activities to be performed. These activities include soil borings, installation of groundwater monitoring wells, soil and water sampling, soil vapor analysis, and decontamination of equipment. The elements of this HSCP include procedures for personnel protection, potential offsite airborne releases, medical surveillance program requirements, training requirements and decontamination.

On behalf of the City of Elmira, Fagan Engineers will be retaining various firms to assist in the performance of the work described in the Site Investigation Work Plan. In accordance with Occupational Safety and Health Administration (OSHA) regulations and guidelines, these firms will be responsible for developing and implementing their own health and safety plans. The firms' plan(s) can be based on the guidelines and information provided herein.

As described in the SI Work Plan the field activities include the following:

- Soil sampling for evaluation of potential contamination of the site.
- Installation of monitoring wells up and down gradient of the site.
- Surface soil sampling for delineation of potential surface risks at the site.
- Groundwater sampling
- Survey activities.

A health and safety plan addressing the remedial action will be prepared upon finalization of the SI Work Plan. The SI Work Plan will provide the general means and methods that the remedial action will incur.

The Project Manager will be the designated on-site Health and Safety Representative (HSR). The HSR will have the necessary training and experience to implement the HSCP.

3.0 HAZARD EVALUATION

SI site activities will involve the potential exposure to hazardous constituents and conditions. The primary SI tasks are as follows:

- Soil sampling,
- Installation of groundwater monitoring wells, and
- Groundwater sampling

Fagan Engineers personnel will be involved with all aspects of this project including soil and groundwater sampling. The personnel, equipment, and procedures specified for these activities reflect the level of protection needed. Reclassification of activities may be performed as more environmental data are collected and evaluated. A summary of historical data from past usages of the site are as follows.

3.1 Historical Data

Chlorinated solvents: Machine shops were in use at this site. Chlorinated solvents were typically and extensively used as degreasers. Paint thinners would also have been extensively used in the paint shops.

Semivolatile organics: Fire trucks were undercoated at this facility. Undercoating is a petroleum based product. Historical records also indicate the presence of a fuel oil tank on the site. The foundries which operated on the site would also have contributed phenolic compounds. A tar substance was observed on the ground surface during the Phase I site inspection.

Metals: Foundries, paint shops, paint spray booths and plating operation could have released heavy metals at the site.

PCB's: There is at least one documented PCB release at the site which occurred in 1983. The release resulted from the unauthorized, unsupervised in illegal "salvaging" of PCB containing transformers stationed on the roofs of numerous site buildings. As response action resulted, supervised by DEC, with an established clean up level of 50 ppm for these areas known to be contaminated. However, due to the unsupervised and illegal nature of the salvaging operations, it is not certain that all areas impacted by the known release were ascertained. It is also possible that other releases, unknown to the authorities, could have occurred during this approximate time frame. Therefore, it is recommended that test pits and limited composite samples be

obtained and analyzed to verify that all impacted areas have been addressed, and that residual PCB levels are appropriate to future site uses.

Please refer to a recent Phase I Environmental Assessment of the former American LaFrance property conducted by Fagan Engineers dated December, 1996 included as Appendix A of the SI Work Plan.

3.2 Hazards

Some safety hazards are the result of the work itself. The use of heavy equipment to perform drilling activities poses potential physical hazards to workers. Protective equipment can impair a worker's hearing, and vision. Site personnel will be instructed to constantly look for potential safety hazards and to remain clear of heavy equipment to the extent feasible. Project activities are not anticipated to result in off-site exposure. The disturbance of material will be minimal and performed in a controlled manner.

Buried utilities will be located and marked before drilling and GeoProbe activities commence.

Several potentially hazardous materials, hexane, nitric acid and Alconox (soap) may be used during the decontamination of sampling equipment. The Alconox will be diluted with water prior to use, and small quantities of hexane and nitric acid (less than ten milliliters) will be used for decontamination. Material Safety Data sheets for these compounds will be available at the site during sampling and equipment decontamination.

The overall hazard rating is low. The selection for the overall hazard rating of the site is based on the anticipated concentration and types of compounds, the Phase I Environmental Assessment included in Appendix A, the use of small diameter probes (two inch) for intrusive investigation and sampling and using a 4.25 and/or six inch hollow stem auger for drilling of the monitoring wells.

4.0 MEDICAL SURVEILLANCE REQUIREMENTS

Site personnel involved with potential exposure to impacted soil or water must be participants in a medical monitoring program in accordance with 29 CFR 1910.120. The exam must indicate no medical restrictions that would inhibit personnel from performing the required work tasks. A written copy of this certification for site personnel will be maintained in each firm's project files.

5.0 PERSONAL PROTECTIVE EQUIPMENT

5.1 Level of Protection

Based on the hazard evaluation and the activities to be performed, the protective equipment was selected. The level of protection by activity is as follows:

- **Drilling**

  Drilling will be initiated at Level D protection with associated dermal protection described below. A hard hat and eye protection will be worn when drilling activities are being performed.

- **Equipment Decontamination**

  Equipment decontamination will be performed at Level D protection with the associated dermal protection described below, unless an upgrade in protection was required during the sampling event. If an upgrade was required, decontamination will be performed at that level.

- **Soil Sampling**

  GeoProbe collection will be obtained using Level D protection with latex or nitrile gloves.

  Level D protection includes the following clothing and hand protection:

  - Work clothes,
  - Latex gloves,
  - Safety work boots/shoes, and
  - Safety glasses.

  A tyvek coverall will be worn when potentially impacted material is being handled. An upgrade in protection to Level C will include the following respiratory and dermal protection:

  - Full-face air purifying respirator with GMC-H organic vapor/acid gas high efficiency particulate filter cartridge,
  - Latex inner gloves,
  - Safety work books/shoes,
  - Nitrile outer gloves, and
  - Liquid resistant tyvek coverall.

5.2 Modification for Personal Protection Requirements

Modifications will be made as conditions warrant. These modifications will be documented and approved by the HSO.

6.0 MONITORING EQUIPMENT

A photoionization detector (PID) (HNu with 10.2 eV lamp or equivalent) will be used during disturbance of potentially impacted soil (i.e., drilling). This equipment is intended to be used to provide warning and allow appropriate action to be taken to prevent exposure from contaminants released into the atmosphere.

6.1 Action Levels for Determining Protection Levels

The level of protection will be determined according to sustained concentrations of vapors detected with the PID. If, at any time, sustained VOC concentrations exceed background levels in the workers' breathing zone during Level D activities, an upgrade to Level C will be warranted. If sustained VOC concentrations exceed 5 parts per million (ppm) above background levels in the workers' breathing zone for Level C activities, an upgrade to Level B will be warranted.

For the purpose of this plan, breathing zone is defined as that zone above the worker's waist. Background level is defined as the concentration of VOCs in an area free of site-generated airborne contaminants (generally located upwind of the work area). Instruments will be calibrated and operated in accordance with manufacturer's specifications.

Background will be determined on a daily basis. PID will be used where soil is disturbed (i.e., sampled). Based on the measurements and the activities being performed, the HSC will determine the protection level and procedures to be followed upon continuation of the work.

6.2 Health and Safety Equipment Calibration

The air monitoring equipment will be calibrated daily prior to initiating on-site work activities. Calibration records will be entered on a daily calibration record form and maintained separately.

7.0 STANDARD OPERATING PROCEDURES

The following standard operating procedures (SOPs) will be adhered to by all Fagan Engineers personnel and subcontract personnel for on-site activities related to this project:

- The "buddy system" will be used during the performance of potentially dangerous activities.

- Eating, drinking, chewing gum or tobacco, smoking or any other practice which increases the potential for hand-to-mouth transfer and ingestion of material is strictly prohibited during drilling and sampling activities. Areas will be designated for such activities.

- Potential contamination avoidance should be practiced. Wherever possible, personnel should not walk or sit in potentially contaminated areas.

- Fagan Engineers and subcontract personnel must adhere to the information contained in this HSCP.

- A safety meeting is mandatory before initiating work and periodically thereafter as needed.

- For Fagan Engineers personnel this plan incorporates, by reference, the policies and procedures established by Fagan Engineers Corporate Health and Safety Program.

7.1 Site Entry Procedures

Prior to performance of on-site activities related to this HSCP:

- The HSR will review the contents of this HSCP with project personnel who will be on site and answer any questions regarding its content.

- The air monitoring equipment will be checked and calibrated.

- Personnel will dress out in the appropriate level of protection at the work area.

- The number of workers on property is anticipated to be less than six at a time.

7.2 Site Exit Procedures

Prior to leaving the property:

- Personnel shall undergo personal decontamination.

- Personnel shall ensure that the work area and equipment are secured.

8.0 DECONTAMINATION

Personnel working at the project site may become impacted in a number of ways:

- Contacting vapors, gases, mists, or particulates in the air;

- Being splashed by impacted materials and

- Using impacted instruments or equipment.

Protective clothing and respirators help prevent the wearer from becoming impacted or inhaling constituents, while good work practices help reduce the contamination of protective clothing, instruments, and equipment.

Even with these safeguards potential exposure remains. Harmful materials can be transferred into clean areas exposing unprotected personnel. To prevent such occurrences, decontamination procedures have been developed and will be implemented.

The extent of required decontamination measures depends on the following factors:

- Type of contaminants,
- Amount and concentration of contamination,
- Levels of protection worn,
- Reason for leaving impacted zone, and
- Work function.

The wide variation of site activities and exposure potential does not allow for the use of one general constituent reduction procedure; instead, several procedures will be used depending on the activity. These procedures are described in the following sections.

8.1 Equipment

Any equipment used in intrusive activities at the site will be cleaned with a high-pressure, water spray before leaving the site. Each piece of equipment will be inspected after cleaning for any soil or sludge by the HSR. Equipment that is used in the intrusive activities will be cleaned to the satisfaction of the HSR or his designated assistant prior to leaving the site.

8.2 Personnel

The project area will have an area for the workers to don, store, and remove protective equipment. Prior to removal of protective equipment, personnel will remove constituents from boots, gloves, and disposable suits in the Contamination Reduction Zone. A soap wash followed by a water rinse will be sufficient in most cases.

The disposable coveralls will be placed in double plastic bags for disposal. If other protective equipment is thoroughly impacted, the HSR may decide to dispose of this equipment rather than to try to clean the equipment.

Personnel will wash hands and face following removal of protective clothing. Personnel wash-water residues will be collected, treated (if necessary), and properly disposed of.

9.0 SITE-SPECIFIC TRAINING

The HSO will implement a project-specific training program for project employees. The HSR, as the on-site representative of the HSO, will instruct employees in proper material handling

techniques; proper methods for the use, storage and disposal of decontamination fluids; preventive maintenance of safety equipment; personal hygiene practices; and personal protective equipment.

The training program will provide instruction for site employees on responding effectively to an emergency. The appropriate response to fire, explosions, and the shutdown of operations will be reviewed. Project employees will be instructed as to the proper response to field monitoring results. Emergency procedures, areas of the site that have restricted access, methods used for project decontamination, and general safety will also be covered in the training.

The project-specific training program will cover the following topics:

- Site history,
- Project organization,
- Explanation of effects of toxic chemicals identified at the site,
- Requirements of personal protection (e.g., respirators, etc.),
- Prohibited actions or procedures,
- Safety precautions,
- Emergency procedures,
- Decontamination procedures,
- Work area, and
- Air monitoring program.

Applicable site emergency procedures will be described by the HSR. Prior to working on site, replacement employees will be required to receive the initial training given by the HSR.

Records of personnel attendance at training sessions will be maintained at Fagan Engineers' office.

Each HSO will be responsible for verifying that project personnel have the sufficient training and experience required by their job function and responsibility.

Safety meetings will be held by the HSR to discuss safety problems, changes in site conditions, monitoring results, or other safety-related topics. Attendance lists, including signatures and topics discussed, for safety meetings will be maintained.

10. 0 REPORTS AND RECORD KEEPING

Records of health and safety activities for the Site Investigation will be maintained by Fagan Engineers. The records will document air monitoring levels, exposure levels, protective equipment worn, incidents, medical monitoring and training.

10.1 Logs and Reports

The HSR shall maintain logs and reports covering the implementation of the HSCP. Typical reports include the following:

- **Training Logs (shall be completed for both initial training and refresher training)**
  - Employee signatures,
  - Topics covered,
  - Materials used,
  - Equipment demonstration,
  - Equipment practice for each employee,
  - Date, and
  - Time.
- **Daily Logs**
  - Date,
  - Area (site specific) checks,
  - Equipment utilized by employees and job function,
  - Protective clothing and devices worn by employees,
  - Violations of the HSCP,
  - Instances of job-related injuries and illness,
  - Area monitoring results, and
  - HSO signature and date.

- **Incident Report**

Describes injuries, off-site release or accident (will be reported in writing to the Fagan Engineers project manager within 48 hours of incident).

- **Medical Certifications**

Submitted to the HSO prior to employee working on site.

10.2 Record Keeping

Fagan Engineers and subcontractors shall maintain health and safety records for the project in accordance with OSHA regulations. Access to records by employees is permitted as required under state and federal regulations. Medical files are confidential and access to these files will only be provided to parties allowed by federal law.

11.0 COMMUNITY AIR MONITORING PLAN

The object of community air monitoring is to protect the immediate community from contact with contaminants generated during the Site Investigation. The intrusive activities proposed for this investigation limit the potential for contaminant release and have the capability of quick and efficient control in case of any release.

Ground intrusive activities will involve the use of small diameter GeoProbes (one inch) being pushed into the soil for intrusive investigation of soil and groundwater. Monitoring wells will be installed up and down gradient of the site using a 4.25 inch hollow stem augar to drill the monitoring wells.

11.1 Particulate Air Monitoring

No monitoring for particulates is anticipated during the Site Investigation of this project. The GeoProbe and drilling activities will not generate significant particulate levels in the air. Also, the site is being used as a stagging area for the building of a North South Arterial with surface dirt work being conducted on all areas of the site. These activities at times generate significant levels of dust. Roadway construction may be completed by the startup of this project. Analysis of particulate matter would only be done if site conditions and activities warrant it.

11.2 Organic Vapor Monitoring

Organic compounds if present are anticipated to be at low levels. Activities at the foundry ceased approximately 10 years ago, and with the shallow surface water any VOCs may have either volatilized or been washed away with the groundwater. If VOC compounds are present it would be anticipated to be in the areas where the coal carbonization (coke making) operation and the quenching areas were located and part of those areas were covered with concrete floors which have previously been removed.

During intrusive activities, GeoProbe sampling and drilling of monitoring wells, a photoionization detector (PID) (HNu with 10.2 eV probe or equivalent) will be used. This equipment will be utilized

to provide warning and allow appropriate action to be taken to prevent exposure from contaminants released into the atmosphere. If, at any time, sustained VOC concentrations exceed background levels in the immediate work area perimeter VOC levels will be monitored and recorded more frequently at two prevailing down wind sample locations.

If the ambient air concentration of organic vapors exceeds 5 ppm above the background, work activities will be halted and monitoring continued. Once the organic vapor level decreases below 5 ppm above background, work activities can resume.

If the VOC level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the HSO will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

11.3 Major Vapor Emissions

If following the cessation of work activities, or as the result of an emergency, VOC levels persist above 5 ppm the background level, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone then the Major Emission Response Plan shall be immediately placed into effect.

- if organic vapor levels are approaching 5 ppm above background.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

11.3.1 Major Vapor Emissions Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in section 12 (Contingency Plan) of this HASP will go into effect.

2. The local police authorities will immediately be contacted by the HSO or HSR and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the HSO.

12.0 CONTINGENCY PLAN

Emergency response procedures have been developed to cover extraordinary conditions that may occur during the Site Investigation activities.

12.1 General Response Considerations

Emergencies must be dealt with in a manner that minimizes the health and safety risks to site personnel and the public. Site personnel will not be required to perform emergency related tasks for which they have not received training.

The following procedures shall be implemented in the event of an emergency:

- First aid or other appropriate initial action will be administered by those closest to the accident/event. This assistance will be coordinated by the ranking individual on site and will be conducted in a manner so that those rendering assistance are not placed in a situation of unacceptable risk. The primary concern is to avoid placing a greater number of workers in jeopardy.

- Employees shall immediately report all accidents and unusual events to:

  - HSO,
  - Project Manager and
  - HSR.

- The HSR is responsible for conducting the emergency response in an efficient, rapid, and safe manner. The HSR will decide if off-site assistance and/or medical treatment are required and shall be responsible for alerting off-site authorities and arranging for their assistance.

- The HSR will be responsible for notification of NYSDOT Engineer and Coldspring Construction Manager of any emergencies that may effect the health and safety of others working on the project in the area.

- The HSR will provide to the above-referenced personnel an Incident Report which includes the following:

  - A description of the incident (including date, time, and duration);

  - Date, time, and name of all persons/agencies notified and their response; and

  - A description of corrective actions implemented or other resolution of the incident.

- All workers on site are responsible for conducting themselves in a mature, calm manner in the event of an accident/unusual event to avoid spreading the danger to themselves and to surrounding workers.

12.2 Responsibilities

The HSR or a designated substitute shall have responsibility for directing response activities in the event of an emergency. He/she will:

- Assess the situation;
- Determine required response measures;
- Notify appropriate response teams;
- Determine and direct on-site personnel during the emergency; and
- Contact and coordinate with government agencies.

The HSR or a designated substitute shall coordinate response activities with those of public agencies.

- **Immediate Emergencies Phone Numbers**

  Police, Fire and Ambulance 911

- **Emergency Support**

  Fagan Engineers Office
  (607) 734-2165

EMR (medical consultants)	(800) 229-3674
USEPA (24-hour hotline)	(800) 424-8802
NYSDEC (Scott Rodabaugh)	(518) 474-2121
NYSDOH (David Napier)	(716) 423-8071

The Fagan Engineers project staff will have available the home phone numbers for their HSR, HSO and project manager. No work is expected to be done during non-daylight hours or on weekends. Cell phones are available in Fagan Engineers vehicles.

12.3 Emergency Response Equipment

Before site operations are initiated, the following emergency equipment must be provided at the site:

- Portable eyewash stations (hand Held);
- List of persons and phone numbers for emergency notification; and
- Facility locations of water for washing hands and face.

12.4 Site Emergency

Procedures for emergency evacuation will be established for the work area even though the contaminants being handled and the procedures employed make this an extremely unlikely occurrence. The rendezvous point will be the Northeast corner of the site at the intersection of Clemens Center Parkway and Pennsylvania Avenue. Emergency procedures for incidents will be described by HSR during the initial safety meeting.

12.5 Hospital

St. Joseph's Hospital is the identified hospital for the SI activities facility. The directions to the hospital are as follows: Take Home Street east to Spaulding Street. Proceed Northeast (left) on Spaulding Street to Pennsylvania Avenue. Proceed North (right) on Pennsylvania Avenue over bridge (Pennsylvania Ave. changes to Madison Avenue at bridge) to Church Street. At Church Street proceed East (right) half block to Emergency Entrance. The emergency procedures provide for the use of an ambulance service to take injured personnel to the hospital. This will be the procedure for this project. The following information shall be given for directions to the emergency agency:

- **Site Property Incidents**:

  Former American LaFrance Plant Site
  100 East LaFrance Street at Home Street and Erie Street
  City of Elmira

H:\WPDATA\97-150\HASP.903