Report. HW862012. 6.1. 1988
Preliminary Assessment

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NUS CORPORATION
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[redacted]

FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

02-8710-106-PA
REV. No. 0

PRELIMINARY ASSESSMENT
NYSEG - DANSVILLE GAS PLANT SITE
DANSVILLE, NEW YORK

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8710-106
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

JUNE 27, 1988

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

Anthony F. Culmone Jr.

ANTHONY F. CULMONE JR.
SITE MANAGER

REVIEWED/APPROVED BY:

Ronald M. Naman

RONALD M. NAMAN
FIT OFFICE MANAGER

NUS CORPORATION

POTENTIAL HAZARDOUS WASTE SITE

PRELIMINARY ASSESSMENT

02-8710-106-PA
Rev. No. 0

NYSEG - Dansville Gas Plant Site	NYD980531446
Site Name	**EPA Site ID Number**
Ossian Street Dansville, New York	02-8710-106
Address	**TDD Number**

Date of Site Visit: Off-Site Reconnaissance conducted November 3, 1987

SITE DESCRIPTION

NYSEG-Dansville, a former gas manufacturing plant which operated bewteen 1861 and 1947, is now a customer service facility and gas pumping station located in the rural community of Dansville, Livingston County, N.Y. The site covers approximately 8.5 acres and is located in a primarily residential neighborhood. During the operating years of the plant, a drainage ditch existed along the east side of the plant and emptied into the Dansville Canal. The Dansville Canal flowed into Canaseraga Creek. At some time after the plant closure, the site was covered with clean fill or paved with asphalt and fenced, limiting access to employees. The data indicate that wastes may have been disposed of in the canal, spills during operations may have occurred, and discharge of wastewater into the drainage ditch was possible.

Information provided by the New York State Department of Environmental Conservation (NYSDEC) indicates that contaminants associated with gas manufacturing are present in the soil. Since the surface of the site has been covered with clean fill or paved, the present concern is groundwater contamination and the potential for contaminated groundwater discharge into Canaseraga Creek.

PRIORITY FOR FURTHER ACTION: High ☐ Medium ☐ NFRAP ☒

RECOMMENDATIONS

The physical characteristics of the region's topography, geology, and climate limit the potential for off-site migration of contaminants. This situation presents a very limited potential hazard to the public. No further action is recommended.

The NYSDEC Region 8 is conducting a Remedial Investigation at the facility. The NYSDEC's recommendations at this time are for a continued investigation, monitoring the existing situation, or discontinuing the program based on their preliminary assessment of risk through the data collected by their site investigation.

Prepared by: Anthony F. Culmone Jr. of NUS Corporation **Date:** June 27, 1988

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980531446

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
NYSEG - Dansville Gas Plant Site	50 Ossian Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Dansville	NY	14437	Livingston	051	35

09 COORDINATES	
LATITUDE	LONGITUDE
42° 33' 36" N	077° 41' 58" W

10 DIRECTIONS TO SITE (Starting from nearest public road)

Travel NY63 north into Dansville. Make a left onto Ossian St. The site is 3 blocks down Ossian St. on the left.

III. RESPONSIBLE PARTIES

01 OWNER (if known)	02 STREET (Business, mailing, residential)
New York State Electric and Gas Corp.	4500 Vestal Parkway East

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Binghamton	NY	13902	(607) 729-2574

07 OPERATOR (if known and different from owner)	08 STREET (Business, mailing, residential)
Anthony Morrow, Metro - Operating Supt.	50 Ossian Street

09 CITY	04 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Dansville	NY	14437	(316) 335-2241

13. TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: ____ (MONTH DAY YEAR) ☒ B. UNCONTROLLED WASTE SITE (CERCLA 103c) DATE RECEIVED: 6/9/81 (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01. ON SITE INSPECTION BY (Check all that apply)

☒ YES DATE: 4/21/86 (MONTH DAY YEAR) ☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☒ D. OTHER CONTRACTOR

☐ NO ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): TRC

02 SITE STATUS (Check one)

☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1861 / 1947 (BEGINNING YEAR / ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Coal tar or coal gasification products such as cresols, naphthalene, quinoline, sulfide, arsenic, barium, cadmium, lead, zinc, phenols.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Contaminants on site pose a limited threat to the surrounding population via potential direct contact or off-site contamination of air and groundwater, (See attachment A)

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ NFRAP (No further remedial action planned)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	08 TELEPHONE NUMBER
Amy Brochu	U.S. EPA, Region 2, Edison, New Jersey	(201) 906-6802

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Anthony F. Culmone Jr.	U.S. EPA	NUS Corp., FIT 2	(201) 225-6160	6/1/88

ATTACHMENT A

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

The drainage ditch running into the Dansville Canal , and subsequently to Canaseraga Creek, may have received wastewater and may have had wastes buried there. Other concerns would be for direct contact by workers involved in subsequent subsurface investigations and excavations.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE: NY	02 SITE NUMBER: D980531446

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☒ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. _____ *(SPECIFY)*
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

- TONS: Unknown
- CUBIC YARDS: Unknown
- NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☒ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		It is suspected that tar sludges and waste
OLW	OILY WASTE			tar may have been disposed of on site.
SOL	SOLVENTS			There is a high probability of spills
PSD	PESTICIDES			having occurred and wastewater being
OCC	OTHER ORGANIC CHEMICALS	Unknown		discharged into a drainage ditch.
IOC	INORGANIC CHEMICALS	Unknown		
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Arsenic	7740-38-2	on-site burial	0.044	mg/L
MES	Barium	7740-39-2	on-site burial	0.352	mg/L
MES	Cadmium	7440-43-9	on-site burial	0.014	mg/L
MES	Lead	7439-92-1	on-site burial	0.031	mg/L
MES	Zinc	7440-66-6	on-site burial	0.371	mg/L
OCC	Phenols, total		on-site burial	0.15	mg/L
OCC	Cresol	1319-77-3	on-site burial	0.110	mg/L
			See Attachment B		

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Not Applicable		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references, e.g. state files, sample analysis, reports)*

Analysis of the soil samples collected by NYSEG in 11/81 was performed in accordance with 40 CFR 261 (Federal Register, Vol. 45, No. 98, May 19, 1980)following the EP Toxicity method. These results were provided to the NYSDEC by NYSEG. Additional soil gas and air quality surveys were conducted by TRC for the NYSDEC in April 1986

ATTACHMENT B

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Naphthalene	91-20-3	on-site burial	0.930	mg/L
OCC	Quinoline	91-22-5	on-site burial	0.350	mg/L
IOC	Sulfide		on-site burial	530.0	mg/kg

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: NY	02 SITE NUMBER: D980531446

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 6000
04 NARRATIVE DESCRIPTION

Wastewater effluent may have been discharged into a drainage ditch which emptied into the Dansville Canal. Evidence indicates that tar sludge may have been disposed of in the canal. These wastes are persistent in nature and may have leached into the groundwater. When necessary, Dansville obtains supplemental water supplied by two wells approximately 3 miles northeast of the site.

01 [X] B. SURFACE WATER CONTAMINATION
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 6000
04 NARRATIVE DESCRIPTION

The Dansville Canal, now inactive, emptied into Canaseraga Creek. Evidence indicates the possibility of tar sludges being buried in the canal. This indicates the potential for off-site groundwater migration. During periods of limited runoff, Canaseraga Creek's flow is maintained primarily by groundwater. Canaseraga Creek supports an active local sport fishery.

01 [X] C. CONTAMINATION OF AIR
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 6000
04 NARRATIVE DESCRIPTION

Since the plant closure, the site has been covered with clean fill or paved with asphalt. This presents little danger; however, should site excavation occur, volatiles may be released and particulates may become airborne.

01 [X] D. FIRE/EXPLOSIVE CONDITIONS
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5000
04 NARRATIVE DESCRIPTION

The exact volume of the constituents is unknown. Some of the detected substances, along with other chemicals presently undetected but possibly present, possess characteristics of a combustible or flammable nature.

01 [X] E. DIRECT CONTACT
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5000
04 NARRATIVE DESCRIPTION

The site, except the lawn area between the access road and Ossian Street, is fenced in , limiting any potential contact to employees and cleanup crews should excavation occur. Direct contact to the general public would be limited to the lawn area by the access road, and to exposure to accidental spills which could occur during the removal process. The site has been covered with clean fill or paved with asphalt.

01 [X] F. CONTAMINATION OF SOIL
02 [X] OBSERVED (DATE: 11/81) [ ] POTENTIAL [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: Unknown (Acres)
04 NARRATIVE DESCRIPTION

The results of a NYSEG soil sample investigation revealed the presence of coal tar and other substances associated with the coal gasification process. Biodegradation of coal tar present in the soils is very slow or nonexistent. The volatile fraction of the coal tar is expected to leach slowly into the groundwater or vaporize slowly into the air. Polynuclear aromatic hydrocarbons and heavy metals are not expected to vaporize or leach into groundwater at any significant rate.

01 [X] G. DRINKING WATER CONTAMINATION
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION

There is a very slight potential for contamination of drinking water. Dansville's water supply is provided by two surface reservoirs approximately 2 miles southeast of the site. The reservoirs are fed by the headwaters of Mud Creek. A slight potential exists for contamination of two wells northeast of Perkinsville, approximately 3 miles from the site. These wells are used to provide a reserve water supply for Dansville.

01 [X] H. WORKER EXPOSURE/INJURY
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION

There is little danger present at this time to employees since the site has been covered with clean fill or paved. The potential for exposure exists if excavation during a cleanup action occurs.

01 [X] I. POPULATION EXPOSURE/INJURY
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5000
04 NARRATIVE DESCRIPTION

Fire and explosion may pose a threat due to the nature and unknown quantities of the wastes indicated to be present. Population exposure may occur should excavation take place since there may be a release of volatiles and particulates. These conditions could become a potential threat by air contamination or runoff during firefighting activities.

EPA POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: NY	02 SITE NUMBER: D980531446

II. HAZARDOUS CONDITIONS AND INCIDENTS *(CONTINUED)*

01 [X] J. DAMAGE TO FLORA — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Migration of contaminants into groundwater that discharges into Canaseraga Creek (approximately 0.5 mi. from the site) may damage aquatic flora.

01 [X] K. DAMAGE TO FAUNA — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

Migration of contaminants on site to Canaseraga Creek may damage fish. Local residents fish in the creek for trout and other species. NYSDEC stocks trout upstream. Healthy bass and walleye populations exist downstream from Dansville.

01 [X] L. CONTAMINATION OF FOOD CHAIN — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exist for contamination of trout and other fish caught in Canaserga Creek. These fish are potentially eaten by humans.

01 [X] M. UNSTABLE CONTAINMENT OF WASTES *(Spills, Runoff, Standing liquids, Leaking drums)* — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5000 — 04 NARRATIVE DESCRIPTION

The site has been covered with clean fill, and there is no present evidence of surface contamination. While a water pipe was excavated during the 1960s, a circular foundation with a brown liquid within was encountered in the middle of the lawn. Exposure would be limited to those working on the site since the site is secured by fencing. No liners were used on the site.

01 [X] N. DAMAGE TO OFF-SITE PROPERTY — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential damage to off-site property exists through the probability of the leaching of wastes into the groundwater causing soil contamination and groundwater contamination.

01 [X] O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists for contamination of storm drains should runoff occur during excavation and potential removal of contaminated soil. Regular drainage flows into the canal which drains into Canaseraga Creek.

01 [X] P. ILLEGAL/UNAUTHORIZED DUMPING — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

The site is fenced preventing unauthorized access. Disposal of manufacturing wastes on the site as indicated by laboratory analysis, appears to exist. Waste disposal followed general practices accepted during the period of plant operation.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Inadequate data exist on the types and locations of holders used throughout the plant history. The holders are a potential source of contamination. Several areas of high terrain conductivity exist and may indicate the presence of gas-manufactured wastes. The tar pit, which is paved over, is another area of concern.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 6000

IV. COMMENTS

The site was originally used to manufacture gas for residential lighting. Technologies at the time of the plant operation did not provide insight for prudent disposal methodologies. Waste materials were disposed of in the most expeditious manner. Biodegradation of coal tar wastes is very slow. This indicated that the characteristics of the detected wastes and those associated with this manufacturing process may be persistent, volatile, and ignitable.

V. SOURCES OF INFORMATION *(Cite specific references, e.g. state files, sample analysis, reports)*

NUS Corporation, Region 2 FIT Off-Site Reconnaissance conducted November 3, 1987, TDD No. 02-8710-106. // U.S. Department of the Interior, Geological Survey Topographic Map 7.5 - minute series, 1942, revised 1978, Dansville, N.Y. // Letter from P.G. Carney, Manager, Environmental Matters Dept., NYSEG, to Manmohan D. Mehta, Assistant Sanitary Engineer, NYSDEC, Re: NYSDEC Site Investigation; 9/19/86. // Letter to Diana Messina, U.S. EPA, from M. Gentils, NUS Corp., Dec. 9, 1987 Re: PA Report NYSDEC: NYSEG - Dansville Site File. // See Attachment C

ATTACHMENT C

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

V SOURCES OF INFORMATION, (cite specific references. e.g., state files, sample analysis, reports)

Telecon Note: Conversation between N. Wise , Village Clerk - Dansville, N.Y., and A. Culmone, NUS Corp., dated 5/13/88.
Telecon Note: Conversaton between T. Wolfinger, Township Clerk Dansville, N.Y., and A. Culmone, NUS Corp., dated 5/31/88.
Telecon Note: Conversation between D. Koswoski, NYSDEC - Avon Office Fisheries, and A. Culmone, NUS Corp., dated 6/1/88.

APPENDIX A

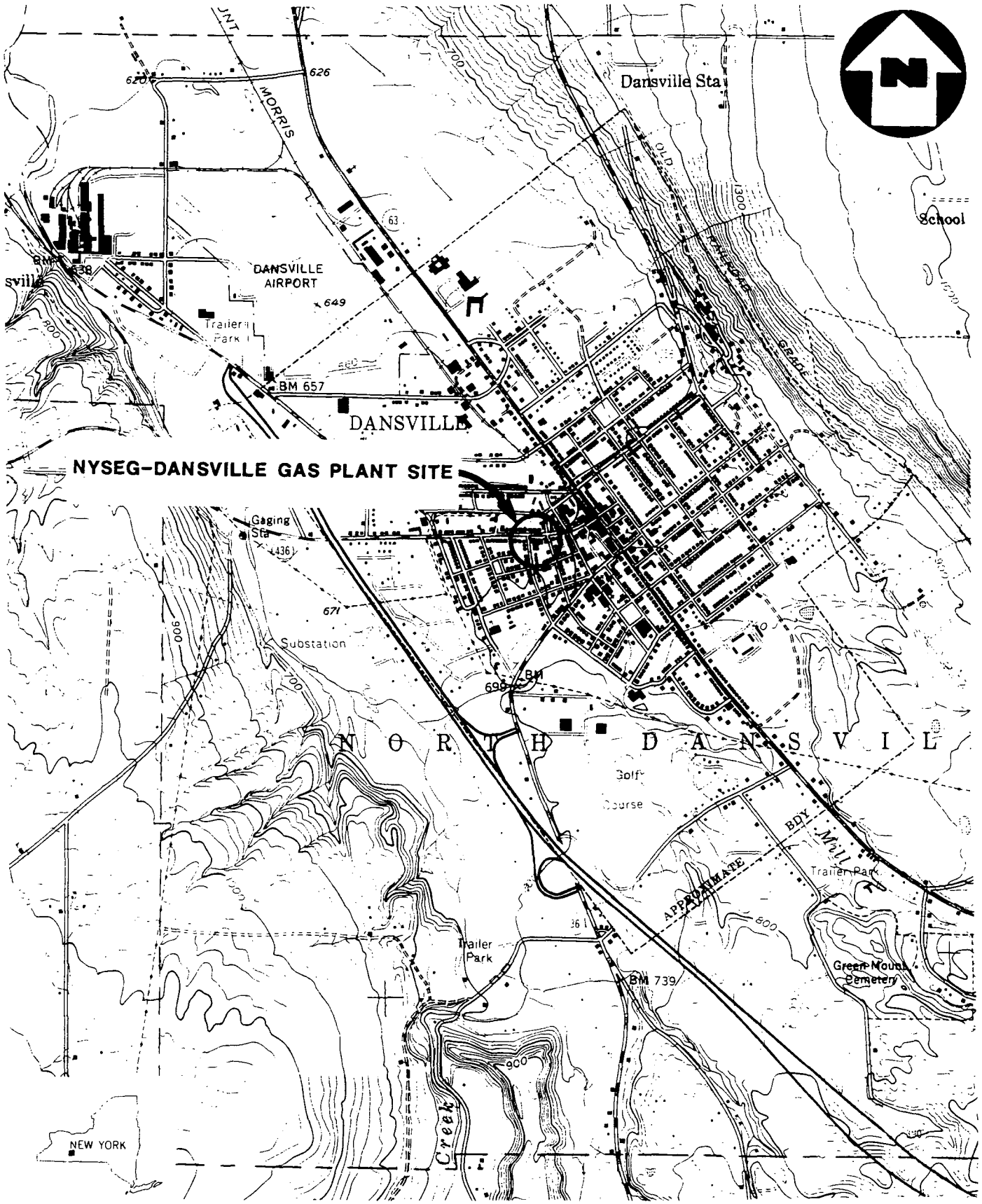
MAPS AND PHOTOGRAPHS

NYSEG-DANSVILLE GAS PLANT SITE

DANSVILLE, NEW YORK

NOVEMBER 3, 1987

MAPS



(QUAD) DANSVILLE, N.Y.

FIGURE 1

SITE LOCATION MAP

NYSEG-DANSVILLE GAS PLANT SITE, DANSVILLE, N.Y.

NUS CORPORATION

SCALE: 1" = 2000'

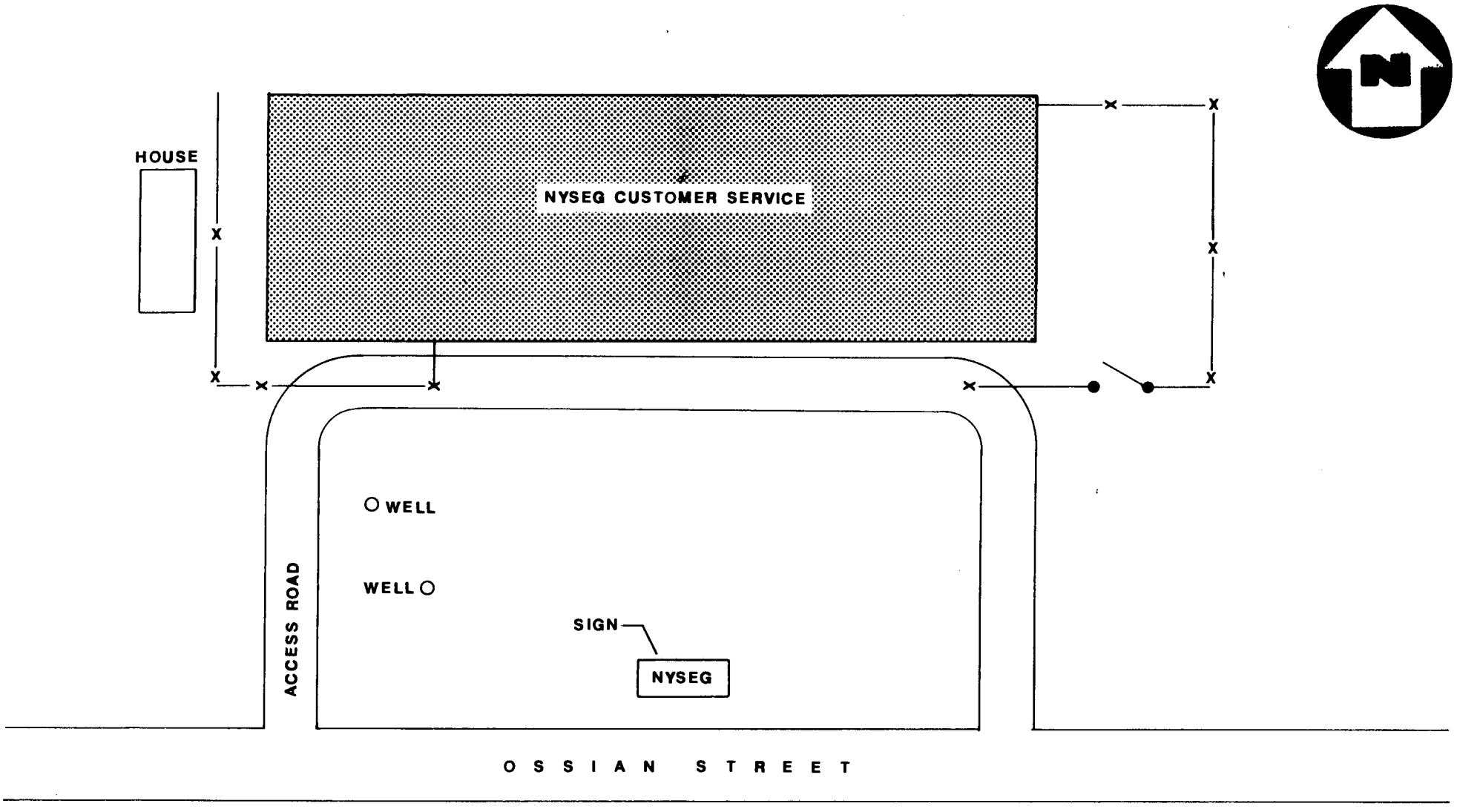


FIGURE 2

SITE MAP

NYSEG-DANSVILLE GAS PLANT SITE, DANSVILLE, N.Y.

(NOT TO SCALE)

NUS CORPORATION

02-8710-106-PA
Rev. No. 0

EXHIBIT A

PHOTOGRAPH LOG

NYSEG-DANSVILLE GAS PLANT SITE
DANSVILLE, NEW YORK

OFF-SITE RECONNAISSANCE: NOVEMBER 3, 1987

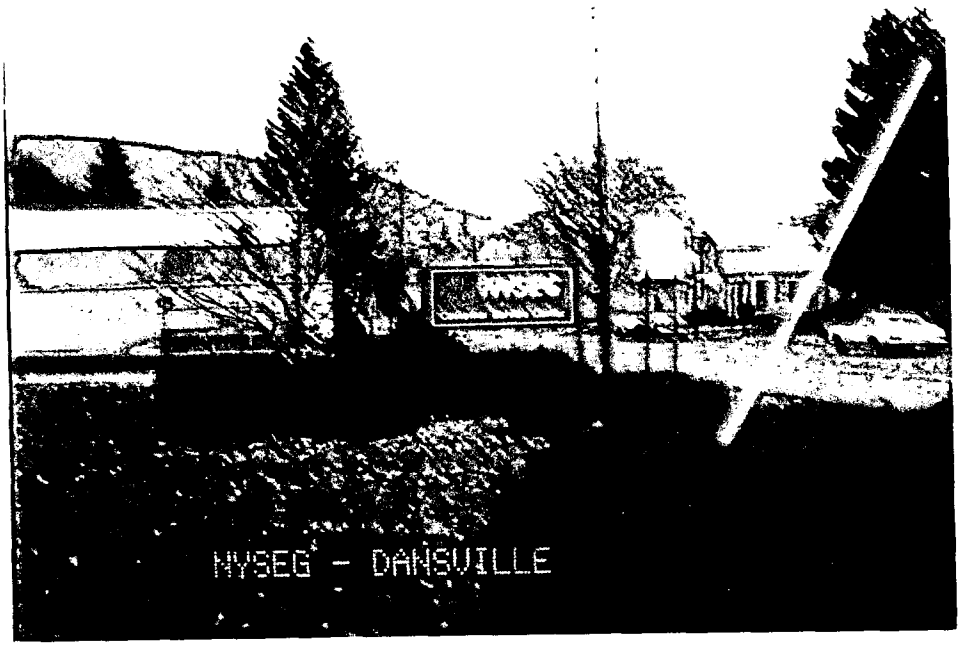
NYSEG-DANSVILLE GAS PLANT SITE
DANSVILLE, NEW YORK
NOVEMBER 3, 1987

PHOTOGRAPH INDEX

Photo Number	Description	Time
P-5	View looking east from access road.	1516
P-6	View looking north on access road-customer service center.	1520
P-7	View looking north on the access road into the site.	1521
P-8	Groundwater monitoring wells on front of property.	1525

Photographs taken by Peter Morton.

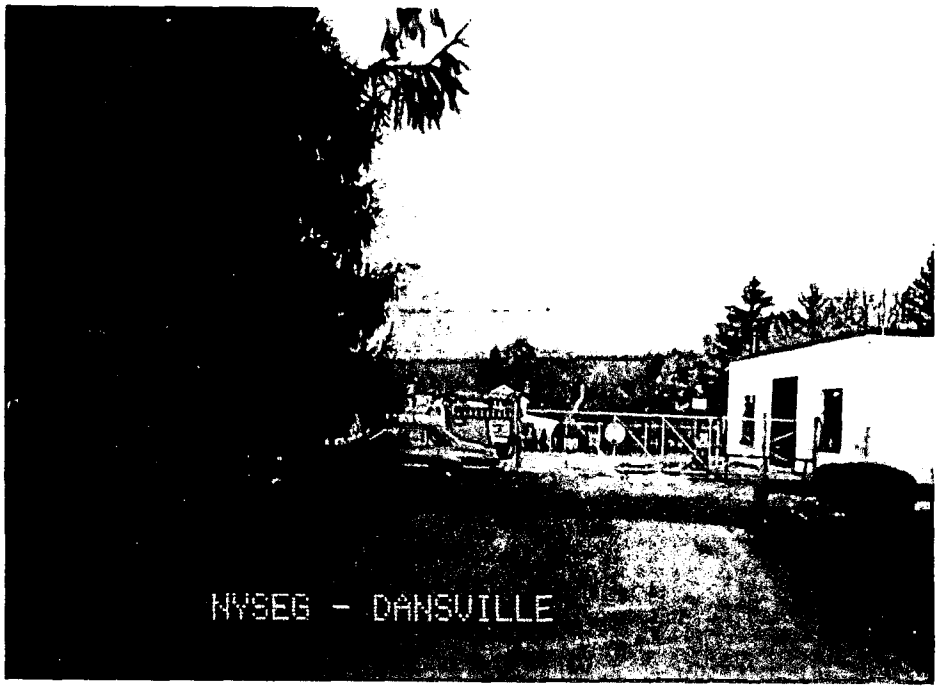
NYSEG-DANSVILLE, DANSVILLE, NEW YORK



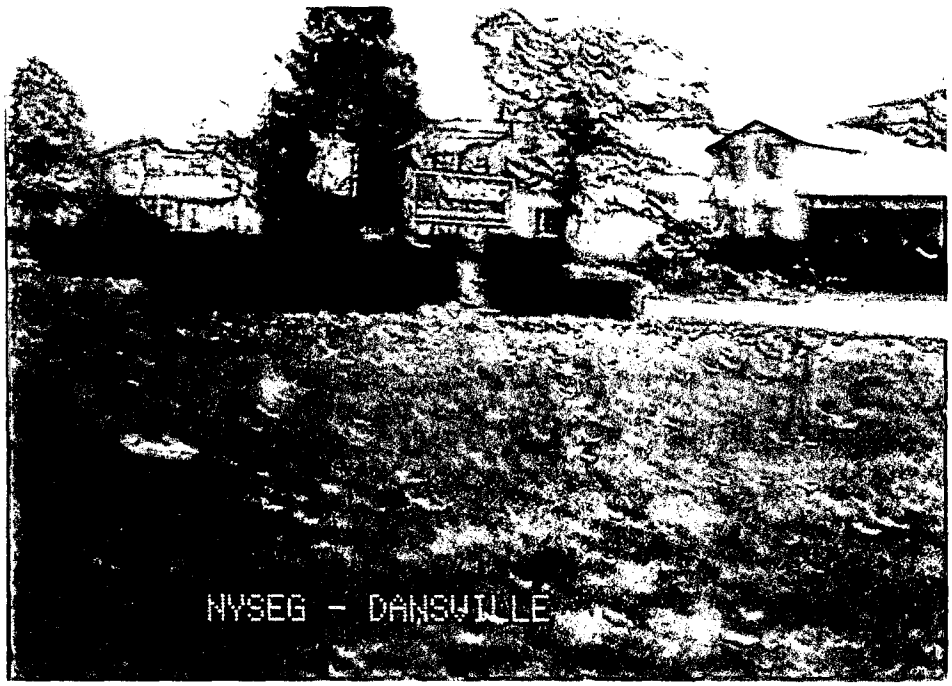
P-5 November 3, 1987 15:16
View looking east from access road.

P-6 November 3, 1987 15:20
View looking north on access road-customer service center.

NYSEG-DANSVILLE, DANSVILLE, NEW YORK



P-7 November 3, 1987 15:21
View looking north on access road into the site.



P-8 November 3, 1987 15:25
Groundwater monitoring wells on the front of the property.

APPENDIX B

BACKGROUND INFORMATION

0005-F
02-8710-106

PRELIMINARY ASSESSMENT
OFF SITE RECONNAISSANCE
INFORMATION REPORTING FORM

Date: 11-3-87

Site Name: NYSEG Dansville Gas Plant TDD: 02-8710-106

Site Address: Ossian St
Street, Box, etc.

Dansville
Town

Livingston
County

N.Y.
State

NUS Personnel:

Name	Discipline
Michael N. Gentile	Geology
Peter Molton	Geology

Weather Conditions (clear, cloudy, rain, snow, etc.):

Cloudy

Estimated wind direction and wind speed: SE - 5-10

Estimated temperature: 50°

Signature: Michael N. Gentile Date: 11-3-87

Countersigned: Peter Molton Date: 11-9-87

PRELIMINARY ASSESSMENT

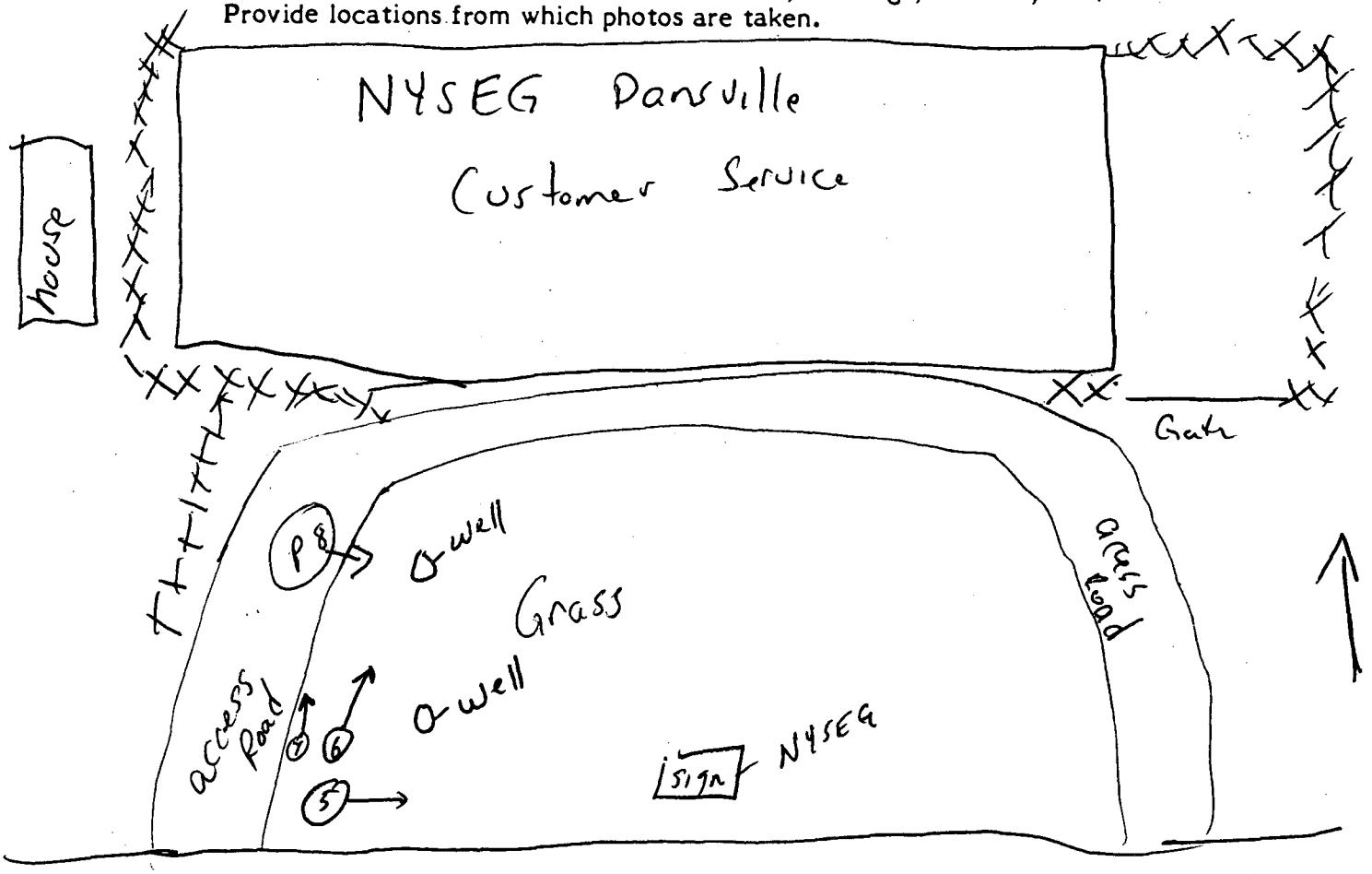
INFORMATION REPORTING FORM

Date: 11-3-87

Site Name: NYSEG Dansville TDD: 02-8710-106

Site Sketch:

Indicate relative landmark locations (streets, buildings, streams, etc.).
Provide locations from which photos are taken.



Signature: Michael N. Gentile Date: 11/9/87

Countersigned: Peter Morton Date: 11-9-87

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 11-3-87

Site Name: NYSEG Dansville TDD: 02-8710-106

Notes (Periodically indicate time of entries in military time):

NYSEG Dansville is a customer service. It is fenced in to Provide security for truck 2. groundwater monitoring wells on front property. Plant has a gas pump inside facility. Unknow Creek about 1/2 mile West on Ossian St.

Signature: Michael N. Ghent Date: 11-3-87

Countersignature: Peter Beaty Date: 11-9-87

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: _____

Site Name: _____ TDD: _____

Notes (Cont'd):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: _____ Date: _____

Countersignature: _____ Date: _____

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 11-3-87

Site Name: NYSEG Danville TDD: 02-8210-106

Photolog:

Frame/Photo Number	Date	Time	Photographer	Description
P-5			R. Morton	East View looking ~~North~~ from access Road
P-6			P. M	View poking North on access Road
P-7			P.M	View looking North on access Rd.
P-8			P. M	Picture of monitoring Wells on front Property

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: Michael M. Gerstl Date: 11-3-87

Countersignature: [signature] Date: 11-9-87

NYSEG

Mehta
Office Copy

September 19, 1986

File
Dansville-Avon

Manmohan D. Mehta
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Division of Solid and Hazardous Waste
New York State Department of
Environmental Conservation
6274 East Avon-Lima Road
Avon, NY 14414

Subject: Dansville Site Investigations

Dear Mr. Mehta:

This letter is in response to your letter of August 1, 1986 concerning the subject investigations. To ease the process of review each comment from your August 1, 1986 letter is stated followed by NYSEG's response:

NYSDEC Statement:

1) All Task-2 activities should be conducted in Conformance with the requirements of NYSDEC's Generic Phase II investigation work plan and the contract laboratory protocols.

NYSEG Response:

The NYSEG investigative approach was presented and discussed at our July 17, 1986 meeting as well as on July 25, 1986 in a meeting with C. Goddard- NYSDEC Albany. The result of both meetings were statements by NYSDEC conveying the opinion that the NYSEG program was in general conformance with the NYSDEC Generic Phase II investigation Work Plan.

Analytical information will be generated in general conformance with the Contract Laboratory Protocols.

NYSDEC Statement:

2) Task-2 work plan should be revised based on findings of Task-1 report. It should include justification for the location of monitoring wells and discussion on materials needed to properly construct wells, seal annular space and secure wells.

NYSEG Response:

All Task 2 work plans are revised based on Task 1 findings. Justification must be and is provided for the location of each field event regardless of type. The materials and construction of monitoring wells is specified in the generic work plan followed by the consultant and referred to in the site specific Task 2 work plan and addresses each of the NYSDEC points.

NYSDEC Statement:

3) As discussed with you, EPA's Hazard Ranking System (HRS) scoring and documentation sheets are to be utilized within the generated report.

NYSEG Response:

The purpose of HRS scoring is to determine the level of hazards at an unknown site where very little site specific information is available. The derived score is then compared to a trigger value and placed in juxtaposition with all other scored sites to allow a prioritization of funds and work effort by the regulatory body. The system has virtually no value to NYSEG. There is no need for NYSEG to develop a HRS score to prioritize the sites as all sites are to be studied, with investigations starting within a defined time period. NYSEG is aware of each site and the general characteristics of each site, and has prioritized the sites with a system that has considered a variety of environmentally sensitive factors. This assessment along with NYSEG's position regarding the HRS was discussed at the 7/25/86 meeting with Mr. Goddard.

NYSDEC Statement:

4) Cuttings and development water should be drummed until analysis proves them to be non-hazardous.

NYSEG has performed the four hazardous waste characteristic analyses on samples from each site presently under investigation (EP toxicity, ignitability, currosivity, reactivity). The samples which were analyzed were collected at the location(s) representing the most contaminated material found at that time on each site. No soil samples failed the hazardous waste tests. From these results NYSEG would conclude that cuttings and development water would be non-hazardous. It would seem most appropriate to deal with the small volumes of non-hazardous material generated by drilling by retaining them on site. This could be done by returning the material to a test pit, which would not further degrade the site, and would allow NYSEG to deal with the site in total.

NYSDEC Statement:

5) GC/MS peaks greater than 10% of the nearest calibrating standard should be identified and quantified, when encountered during analysis.

NYSEG Response:

The technical need for this level of identification and quantification is questionable. The sites under investigation are not dumping sites where unknown material have been placed, the sites are such that we are aware of the history at the site and have defined parameters of concern. The parameter list for a typical GC/MS scan includes the majority of parameters typically associated with a coal gasification site. The likelyhood of making a false negative conclusion by not including the peak greater than 10% of the nearest calibrating standard is remote. Going further with this thought, if the analysis were performed for the peaks in question the data would be of questionable value as no standards exist to make the risk assessment meaningful.

NYSDEC Statement:

6) A letter of agreement should be signed between NYSDEC and NYSE&G for further site investigation at this site to include requirements of 1-5 above and to establish accurate work schedules for the field activities to allow sufficient oversight of these activities by the Department.

NYSEG Response:

This issue of letters of agreement was discussed with Mr. Goddard at our 7/25/86 meeting. Until such time as Mr. Goddard determines that a need exists for a letter of agreement, NYSEG believes it is inappropriate to enter into such a formal agreement. NYSEG welcomes NYSDEC review, but is sensitive to impact on schedule. Sufficient oversight by NYSDEC can only be gauged by the Department. We would request that you share our sensitivity to schedule.

Sincerely,

Peter D. Carney

P.G. Carney, Manager
Environmental Matters Department

PGC/ca

cc: P. Schmied - NYSDEC, Avon
C. Goddard - NYSDEC, Albany

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December 9, 1987

Ms. Diana Messina
U. S. Environmental Protection Agency
Region 2
Edison, New Jersey 08817

Dear Diana:

One of the sites assigned to FIT 2 for FY '88 Preliminary Assessment is the NYSEG Dansville site in Dansville, Livingston County, New York, under EPA No. NYD980531446. Through investigation of New York State Department of Environmental Conservation background files, it has been discovered that NYSDEC Region 8 is currently conducting an RI/FS.

Considering this information, a Preliminary Assessment Report (Form 2070-12) is not warranted.

Very truly yours,

Michael N. Gentils

Michael N. Gentils

Reviewed and Approved:

MNG/mm

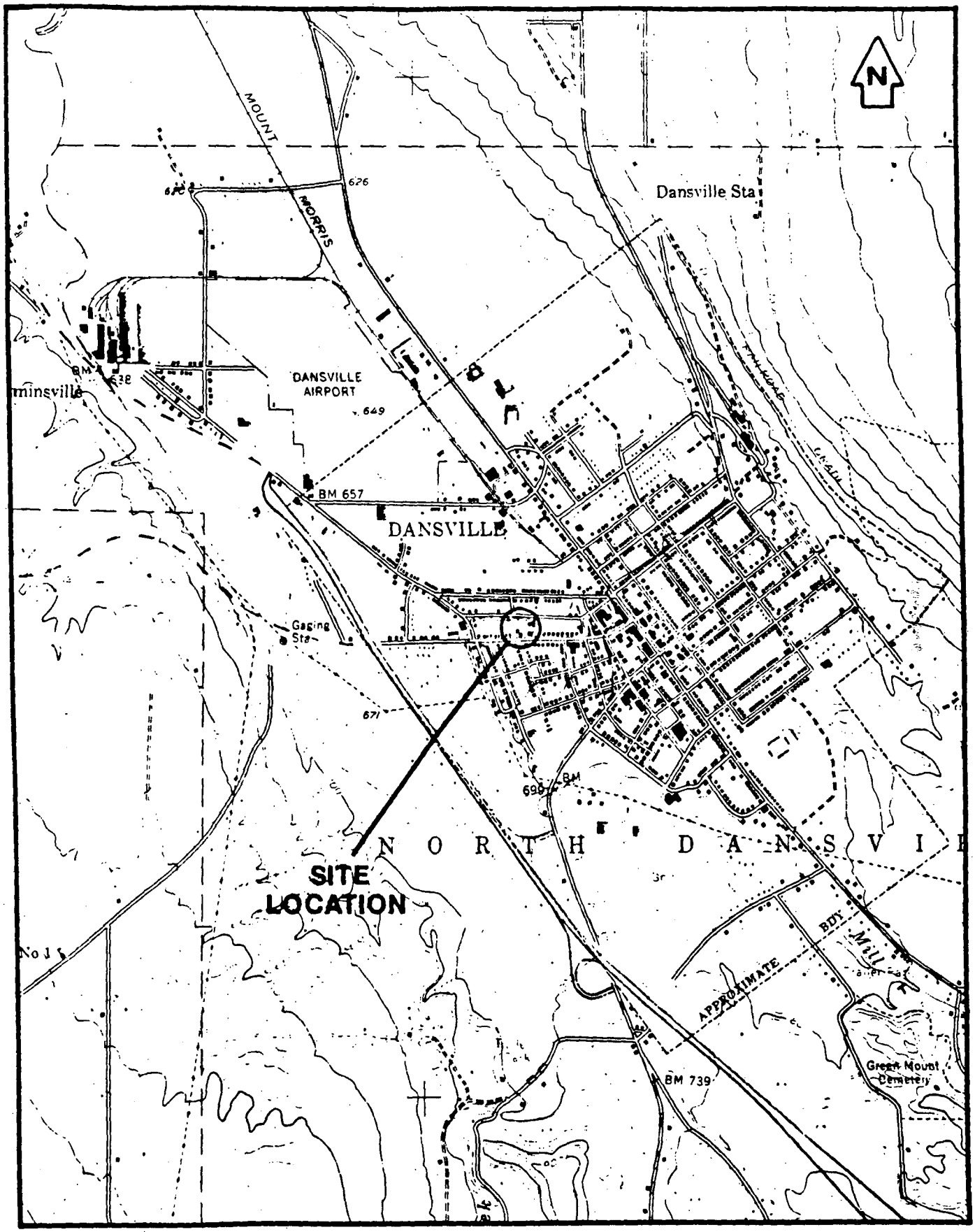

Figure 1-1. Dansville Site Location Map

2.0 SITE HISTORY

As part of Task 1, information on the history of the plant was obtained. The gas plant is discussed in both the 1881 History of Livingston County and the 1902 History of Dansville available in the Dansville Public Library. The library also contains 1872 and 1902 maps and an 1882 photograph of the town and site. NYSEG files contain a 1941 letter reviewing organizational changes at the gas plant as well as a late 1920's photograph of the site.

Because the gas manufacturing plant closed January 1, 1930, it was difficult to get information on how the plant was operated. The three retired NYSEG employees interviewed by TRC began working at the site shortly after the Second World War, more than 15 years after plant closure. Only one previous employee was identified who is still living and who worked at the site while it was manufacturing gas. However, he worked in the meter department and customer service, and therefore, his knowledge of the gas plant operations is limited.

The information from these sources was reviewed and is summarized as follows:

- Site chronology
- Plant operations
- Plant closure and present conditions

Table 2-1 lists the more significant events in the gas plant's history.

2.1 Site Chronology

Industrial activity at the Dansville site began with the Gilman Foundry, which was located on the southwest third of the present NYSEG property. The foundry, which existed from 1842 to 1926, may have contributed to any potential contamination at the site.

TABLE 2-1

CHRONOLOGICAL SEQUENCE OF EVENTS
AT THE DANSVILLE SITE

1842 - 1926	Gilman Foundry operated on southwest third of present NYSEG property.
1861	Dansville Gas Light Plant started operating on the southern end of the property. The operation consisted of one building and one gas holder (10,000 ft^3).
1894	Dansville Gas Light began domestic service (Dansville Historian Notes)
1895	Dansville Gas Light merged with the local electric company forming Dansville Gas and Electric Company.
1896	Land purchases on the east side of the property allowed extension of a railroad spur to the plant and erection of additional storage facilities.
1902	A larger gas holder (40,000 ft^3) was built to increase storage capacity from 10,000 ft^3 to 50,000 ft^3.
1906	Additional land on east side purchased. This area includes the present pole yard and discovered tar well.
1921	Newfield Gas Company was contracted to supply natural gas to Dansville Gas and Electric Company from local wells. The natural gas supply was insufficient, resulting in intermittent service to customers.
1924	Dansville Gas and Electric was purchased by New York Central Electric Company.
1925	An electric line from Elmira to Dansville was completed and the electric plant at Dansville ceased production.
1926	New York Central Electric Company refurbished the gas plant and manufacture of gas started again.
1930	The gas manufacturing plant was closed and the Iroquois Gas Company contracted to supply natural gas to the village. Plant closure and removal of structures occurred some time between 1930 and June 1938.
1937	New York Central Electric Company merged with NYSEG.
1958	Remainder of the gas house removed from the site. The former electricity plant building still remains on the property.

Gas manufacture in Dansville was discussed as early as 1856. The Dansville Gas Light Plant was built on the southern end of the site and started operating in 1861. Initially, gas was distributed through wooden mains for street lighting and public buildings. An 1872 map shows the plant consisting of one building with one gas holder north of it (Figure 2-1).

Electricity replaced manufactured gas for street lighting with the construction of the first electric plant in 1888. By 1894, the gas plant was supplying domestic heating needs. In 1895, the gas company and electric company merged to form the Dansville Gas and Electric Company. During this time, what is now the oldest part of the present NYSEG Service Center was built to house the electric plant. Several land purchases east of the site were made, in order to extend a railroad spur to the plant and to erect additional work and storage facilities.

The 1902 History of Dansville contains photographs of the gas house and electric plant. The electric plant picture shows a ditch on the east side of the plant running north to the old canal. Because the ditch appears to be positioned so as to provide drainage from the gas plant to the canal, it may have received waste water. The gas house picture shows a 27 ft by 55 ft one story brick building with a gas holder behind it and the foundry to the west of it. That year, a new larger gas holder (40,000 ft^3) was being built to receive gas passing through the older holder (10,000 ft^3) (Figure 2-2). At that point, the plant produced 15,000 MCF (MCF = 1000 ft^3) per day of gas by the carburetted water gas method. The plant served 300 customers. About 4 kW-hr. of electricity were produced by coal-fired boilers. In 1906, additional land to the east was purchased. In August 1921, the Dansville Gas and Electric Company contracted with Newfield Gas Company to supply natural gas from local wells and manufacturing of gas was discontinued. However,

after a year, the supply of natural gas proved to be insufficient. Nevertheless, gas was not manufactured again until 1926.

In 1924, Dansville Gas and Electric was purchased by New York Central Electric Company. Construction of an electric power line from Elmira began immediately. When it was completed in 1925, electricity production in Dansville ceased. Extensive repairs and improvements to the gas plant were completed in 1926, so that gas manufacture could resume. A photograph from this latter period shows that the gas house had a second story added to the north end. The gas holder visible in the 1902 photograph had been replaced by the late 1920's. Also, the foundry which had been purchased in 1926 was removed by the time of this photograph. By the 1920's, a long north-south oriented building stood on the east side of the gas house and was used for offices, workshops and storage (Figure 2-3).

The gas manufacturing plant was closed sometime in 1930, and Iroquois Gas Company was contracted to supply natural gas to the town. In 1937, New York Central Electric Company was merged with New York State Electric and Gas (NYSEG). A 1938 aerial photograph shows that most of the gas plant had been removed. All that remained standing was the long north-south building and the southern half of the gas house. After the Second World War, the long building was removed and the remainder of the gas house was converted for use by the meter department. This structure was removed in 1958.

2.2 Plant Operations

Due to the closure date (January 1, 1930) of the Dansville Gas Plant, no living person who worked at the plant was found. Mr. Allen Dixon of Manlius, N.Y. did work at the site from 1923 until closure, but his responsibilities were with meters and customer service, and therefore, his knowledge of plant operations is limited.

The 1881 History of Livingston County states that, "Gas was first made from coal, next from naptha [sic] vapor, then from gasoline, subsequently from oil, and at present from naptha." Thus, the feed fuel changed four times in the first 20 years of plant operation. The initial product was probably "blue gas" produced by passing steam over incandescent coal. Subsequently, various grades of hydrocarbon liquids were employed to produce an "oil gas" of much greater heating value.

The 1902 History of Dansville includes a similar list: "Gas was first made from coal, next from naptha vapor, then from gasoline, subsequently from oil, thereafter from coal and now by the water process." This list omits the second reference to naphtha and substitutes coal instead. The "water process" most likely refers to carburetted water gas or more simply "water gas." Water gas is intermediate in heating value between blue and oil gas. Manufacture of water gas involved enriching the blue gas with oil. The process is described in more detail below.

The Dansville History mentions underground oil tanks with a capacity of 5,000 gallons. The article described the gas generator as "new" suggesting the conversion to water gas may have been fairly recent to 1902. It said that gas consumption at this time was 15 MCF per day (1000 ft^3 = 1 MCF) for 300 customers. Assuming gas production equaled gas consumption, the annual gas production for 1902 was about 5500 MCF. Gas production records for 1912 through 1918 (Table 2-2) indicate that average annual production was slightly less than 10,000 MCF. The number of customers served had expanded during this period to about 600.

A single photograph of the plant from the late 1920's, along with Mr. Allen Dixon's recollections, provided a sketchy outline of the plant's operation during its final decade. Figure 2-3 shows the plant lay-out as it was in the late 1920's. However, the position and size of the various tanks

is an approximation from one photograph. Standard practices for producing water gas are also assumed for the Dansville plant.

Gas was produced by passing steam over incandescent coke in reducing conditions (no oxygen). The water reacted with the carbon in an endothermic reaction to produce carbon monoxide, carbon dioxide and hydrogen gas with a heating value of approximately 300 Btu/ft^3. The gas was then injected into a carburetor where hot atomized oil was added. As the gas passed into the "superheater", the oil was vaporized and the molecules broken into smaller gas molecules. The resulting heating value of the gas depended on the type of oil and the oil to blue gas ratio. A value of 530 Btu/ft^3 was standard.

Because the basic reactions were endothermic, the coke bed had to be reheated by blowing air over it. The resulting "blast gas" could not be mixed with the water gas because of excessive nitrogen and carbon dioxide. Instead, it was burned in the carburetor and superheater to store heat for the next cycle. Mr. Dixon said 2 MCF of water gas was produced per cycle.

The raw gas contained steam, tar, oil, and sulfur which needed to be removed before the gas was stored or distributed. Much of the tar and oil was removed with the steam as it cooled in the condenser. The gas could be purified further in scrubbers with oil or water as the scrubbing liquid. The water-tar-oil liquor produced from the cleaning processes went to the tar separator where the three phases would separate. In the 20th century, it was likely that the tar was boiled to drive off the remaining water and then shipped out for sale to a tar refinery. The tar was temporarily stored in a "tar well" near the railroad tracks. Although some of the oil could be skimmed off for reuse, the oily water from the tar separator would be released as waste. Mr. Dixon had no knowledge of these cleaning processes.

After the first round of cleaning, the gas entered the gas relief holder which was a telescoping adjustable-volume tank. From the relief holder, the

gas was pushed through the sulfur purifier. The sulfur purifier consisted of iron oxide covered wood chips which reacted with the H_2S in the gas. Periodically, the adsorbed sulfur was released by blowing air over the purifier beds, producing sulfur dioxide (SO_2). Eventually, the iron oxide could not be regenerated and had to be disposed of. These wastes contained sulfur and cyanide. The gas was held in the 40,000 ft^3 gas holder for distribution.

Mr. Dixon recalls that the generator was 20 ft tall and coke was charged manually from the top. The tanks shown in Figure 2-3 lying on their side probably contained oil. The location of the condensers, scrubbers, and tar separator is not known. The sulfur purifiers were located in the south end of the gas house.

The spent iron oxide chips, which were stored in burlap bags, were piled on the west side of the gas house and disposed of periodically at a dump on Ossian Street, across Canaseraga Creek. The method of disposal of ash and clinkers from the generators is not known. Waste water from the tar separator may have flowed into the ditch which ran north to the old canal. A wood-sided tar pit was discovered in the 1970's under the pole yard near the railroad track. Also, tars were discovered in the sediments 4 feet below the pole yard when NYSEG employees did some shallow borings (NYSEG files).

Waste tar and tar sludges are the primary environmental concern at former manufactured gas sites. In the early part of the manufactured gas era, tar was treated as a waste and was usually disposed in the most expeditious manner. It is not known if wastes were placed in the inactive Dansville canal. The tar may have been burned as fuel in the plant.

Although the first tar refinery in the United States was established in Philadelphia in 1887 (Rhodes, 1966, pg. 14), a remote plant like Dansville Gas and Electric would not have exported tar until 1895 or 1896, when the railroad

spur was built. Thus, all tar produced prior to this date would require another form of handling. Assuming an average daily gas production of 5 MCF for the pre-1896 period and a tar production rate of 2 gal/MCF of oil gas (Gas Engineer's Handbook, 1969), 128,000 gallons of tar would have been produced during this period.

After 1896, the plant still needed to dispose of tar sludge from the tar separator. The sludge could not be refined because of its high concentration of particulate matter (mostly coke fines). In fact, although Mr. Dixon does not recall anything about tar generation, export or disposal, he remembered that the coke was washed before being charged into the generator. This suggests that New York Central Electric was trying to keep its tar sludges to a minimum and to maximize tar exports. The tar well discovered near the railroad tracks is on a piece of property that was not acquired by Dansville Gas and Electric until 1906. It is not known where the tar produced between 1896 and 1906 was stored.

The Gas Engineers Handbook contains data which show that approximately 1 gallon of tar is produced per 1000 ft^3 (1 MCF) of water gas produced. Table 2-2 shows the operating statistics of the Dansville gas plant for the years 1907 to 1930. The average annual volume of gas manufactured for 1912 to 1918 is 9761 MCF. Assuming this value for all the years between 1911 and 1921, and the 1902 value (5,500 MCF) for all the years between 1896 and 1911, when the plant ownership changed hands, 195,370 gallons of tar would have been produced during this period. When gas manufacture resumed again in the late 1920's, another 87,000 gallons would have been produced.

Estimates of tar sludge generation rates for water gas plants are not available. However, a study of coke oven tar sludge suggests that generation rates are on the order of 0.1% to 1% of total tar production (Environmental Research & Technology, 1984). It is reasonable to assume that generation

rates of water gas tar sludge are on the lower end of the range for coke ovens (0.1%), because the feed is cleaner (coke vs. coal). Based on these assumptions, 260 gallons of sludge would have been produced in the 1896 to 1930 period. The amount of spillage which may have occurred around the gas relief holder, tar separator and tar well is not known.

2.3 Plant Closure and Present Conditions

Few details are known about the plant closure. The gas holders were cut off at their foundations. Metal from the wall of the gas holder continues to protrude through the asphalt and needs to be periodically cut off. The foundation of the gas relief holder was still visible in the 1940's and a cavity existed below it.

The tar well was left intact. During the 1970's, the tar well caved in under the weight of a truck and needed to be repaved.

At some point after closure, soil was spread over the south end of the property for a lawn. Much of the remaining property is paved with asphalt. However, the east side is only paved with crushed stone and oil except for the 60 feet next to the building which has asphalt. Because all of the site has been covered with clean fill or paved, there is no evidence of surface contamination.

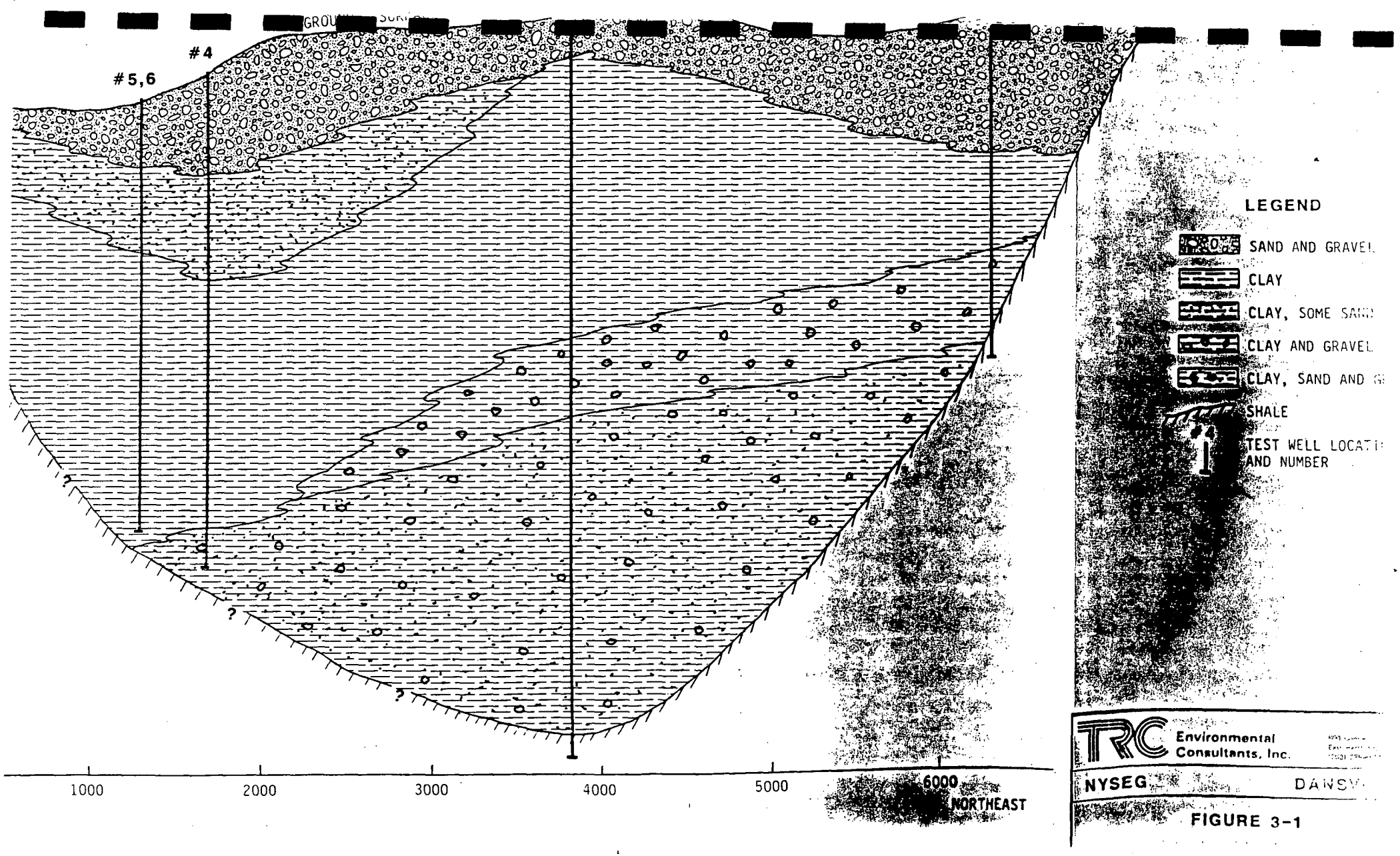
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FIGURE 3-1

3.2.1 Surface Water Hydrology

Average annual precipitation in the Dansville area is 30 inches. The heaviest average precipitation (17 inches) occurs during the growing season, May through October. Most of the non-growing season, November through April, precipitation (13 inches) occurs as snow and ice. The average mid-winter temperature is 25°F, while the average mid-summer temperature is 70°F.

The Village of Dansville lies on the extreme southern end of a flat linear valley, which trends northwest to the Genesee River Valley. In the Dansville area, the valley is bounded on three sides by steep mountains, which rise 700 to 1000 feet above the valley floor. The Canaseraga and Mill Creeks emerge from steep-walled canyons to join on the west side of town (Figure 1-1). The USGS gaging station, immediately downstream of the confluence of these two creeks, recorded steamflows from 1931 to 1960 (Gilbert and Kammerer, 1971). Average annual runoff during this period was 13.27 inches. Forty to fifty percent of the annual runoff occurred during March and April, when the spring thaw occurs. September is the low-flow month, contributing only 2% of the annual runoff. The relative contribution of ground water to streamflow is greatest during low-flow periods.

3.2.2 Ground Water Hydrology

The ability of the Quaternary deposits to transmit water is closely related to their mode of deposition. The fine grained clay deposits are impermeable layers and will yield only small quantities of ground water. The alluvium is permeable, but its saturated thickness is not large enough to make municipal water supply feasible. Nevertheless, this permeable layer could transmit any potential contaminants from the site to Canaseraga Creek.

The only depth to water information available for Dansville is from a local resident who drove a shallow well in order to irrigate his garden. He

reported that the depth to water was 16 feet. Ground water flow is probably westward toward Canaseraga Creek.

Dansville's water supply is provided by two surface reservoirs approximately 2 miles southeast of the site. The reservoirs are fed by the headwaters of Mud Creek. Two wells located northeast of Perkinsville (approximately 3 miles from the site) supplement the village water supply during periods of low rainfall. If necessary, these wells are capable of supplying up to 1.3 mgd, which is the average amount supplied by the surface reservoirs. There are no known wells being used for water supply within a one mile radius of the site.

3.3 Site Area Land Use

Site area land use analysis was conducted by driving by all the properties within a one mile radius of the site and mapping their present use. The map, Figure 3-2, was prepared using the 1978 revised Dansville, New York 7-1/2 minute USGS quadrangle map.

Within a one mile radius of the site, land use is roughly divided into 75% residential, 15% commercial-industrial, and 10% agricultural. Immediately surrounding the site, land use is primarily residential. One commercial operation is located north of the site on the north side of Battle Street. The property is operated by a meat wholesaler. A dry cleaning operation is located to the immediate southeast of the site area on Ossian Street. East of the site, past a small residential area, is a commercial lot occupied by a home heating oil distributing company, and a farm equipment dealership. There did not appear to be any storage tanks or underground pipe lines for heating oil at the distribution center.

Five schools are located within a one-mile radius of the site area. The closest is the Dansville Junior High School, at 1750 feet to the southeast

These probably represent abandoned gas distribution pipes as well as the remains of the large gas holder. The long north-south trending anomaly in the south lawn corresponds to a water pipe laid in the 1960's. While excavating the trench for the pipe, a circular foundation with a brown liquid within was encountered in the middle of the lawn.

4.2 Soil Gas

During the week of April 20, 1986, a soil gas survey was conducted in the south lawn (Figure 4-2). At each grid point, a hole 14 to 18 inches deep and 1-1/4 inches in diameter was augered. Immediately upon completion of the hole, a 1-1/2 inch OD PVC pipe was inserted approximately 12 inches. The pipe is outfitted with a rubber stopper with a teflon tube through it which leads to a stainless steel valve. The valve opens to an outlet in which the Century Organic Vapor Analyzer (OVA) probe tip is inserted. The OVA pumped the air out of the hole and measured the concentration of organic vapors in the soil atmosphere. Studies have shown that this method can detect volatile organic contamination in the ground water or soil (Lappala and Thompson, 1984). An area of elevated organic vapor concentrations was found in the middle of the lawn overlapping the area where the circular foundation was found (Figure 4-2). The augered holes typically went through 12 inches of top soil and then encountered rubble consisting of bricks and cinders.

4.3 Site Air Quality

On April 21, 1986, TRC conducted an air quality survey of the Dansville site. Using a Century Organic Vapor Analyzer, ambient airborne concentrations of total organic vapors were measured. Readings were taken at each of the grid points for the EM31 survey (Figure 4-1). The temperature was 32 to 35°F,

with a slight breeze and overcast skies. The low temperatures and breeze decreased the probability of detecting organic vapors.

The OVA was calibrated on the 1X scale with zero air and 19 ppm benzene standards from Kevlar bags. All of the outside ambient airborne concentrations were between 0.4 and 1.2 ppm, with 0.9 being the median value. In addition, the air inside the storm sewer system was tested by inserting the OVA probe into the manholes and drains. The results indicate slightly elevated concentrations of organic vapors in the storm sewer system (Figure 4-3).

An air quality survey of the inside of the NYSEG building was also conducted on April 21 (Figure 4-4). The values ranged from 1.2 ppm to 10 ppm and were highest in the storage room.

4.4 Soil Quality

In November of 1981, NYSEG collected two soil samples at the Dansville site. Both samples were taken along the south side of the pole storage yard from excavation #2 at depths of 8 and 12.5 feet (Figure 4-5). The soils were leached following the Extraction Procedure Toxicity* (EP Toxicity) method and analyzed for the eight EP Toxicity metals as well as copper, zinc, total phenols, ortho- and para-cresol, naphthalene and quinoline. In addition, the samples were analyzed for cyanide, sulfide, pH and flash point. The analytical results are summarized in Table 4-1.

The appearance of cresols, naphthalene and quinoline in the leachate indicates the presence of coal tar or coal gasification products in the soil.

*In accordance with 40 CFR 261 (Federal Register, Vol. 45, No. 98, May 19, 1980.)

TABLE 4-1

SUMMARY TABLE OF CHEMICAL DATA FOR THE DANSVILLE
COAL GASIFICATION SITE - DANSVILLE, NEW YORK

	Sample ID	DAN-01	DAN-02
	Date	11/2/81	11/2/81
	Depth	8'	12-1/2'
	Lab No.	81-1770	81-1771
Compound	Units		
Arsenic	mg/L	0.044	ND<0.025
Barium	mg/L	0.352	0.207
Cadmium	mg/L	0.002	0.014
Chromium	mg/L	ND<0.010	ND<0.010
Copper	mg/L	ND<0.05	ND<0.05
Lead	mg/L	0.031	ND<0.010
Mercury	mg/L	ND<0.0004	ND<0.0004
Selenium	mg/L	ND<0.002	ND<0.002
Silver	mg/L	ND<0.05	ND<0.05
Zinc	mg/L	0.371	0.345
Phenols, total	mg/L	0.15	ND<0.008
o-Cresol	mg/L	0.110	0.022
p-Cresol	mg/L	0.056	0.015
Naphthalene	mg/L	0.930	0.103
Quinoline	mg/L	0.350	0.0035
pH	-	7.4	7.1
Flashpoint	°F	>170	>170
Cyanide	mg/kg	ND<1	ND<1
Sulfide	mg/Kg	320	530

5.0 DISCUSSION OF FINDINGS

5.1 Summary of Findings

Based on the preliminary data gathered in Task 1, several observations were made regarding the former Dansville Gas Plant. Several questions were also raised which will be addressed in the remaining program tasks. The conclusions and questions include:

- Gas manufacture wastes have been identified in the subsurface on the NYSEG property. The extent of contamination has not been determined.

- Potential sources of the contaminants have been identified as:

  - tar well
  - materials disposed of in the canal
  - spills during operations
  - ash disposal
  - trench from the plant to the canal

- Inadequate data exist on the types and locations of holders used throughout the plant history. The holders are a potential source of contamination. This will require confirmation during subseguent investigations.

- No surface contamination was observed.

- Absence of coal tar odors and low Organic Vapor Analyzer readings, as compared to background, indicate no immediate respiratory hazard on-site. Further studies will be required, however, to assess potential risks during excavation because of the number of sensitive receptors in the area.

- The depth to ground water and direction and velocity of ground water flow needs to be measured in order to assess the potential for contaminant migration off-site.

- Several areas of high terrain conductivity exist and may indicate the presence of gas manufacture wastes. This will require confirmation during subsequent investigations.

5.2 Preinvestigative Evaluation

The objectives of the Task 2 and Task 3 investigations for the Dansville site are to obtain sufficient site specific field data to determine if there is an environmental problem at the site and to allow site characterization,

TABLE 5-1

SUMMARY OF POTENTIAL ENVIRONMENTAL PROBLEMS AT THE DANSVILLE SITE

Technical Factors	On-Site Soils	Ground Water	Sewers	Air
Chemicals Present	Two soil samples have been collected at the site and contain the following: • arsenic • barium • cadmium • lead • zinc • phenols • o-cresol • p-cresol • naphthalene • quinoline • sulfide The following chemicals may also be present in the soils: • benzene • toluene • ethylbenzene • xylenes • polynuclear aromatic hydrocarbons • heavy metals • cyanides	There are no ground water wells at the site and no ground water samples have been collected. Chemicals that may be expected in ground water if coal gasification wastes were deposited on site are: • benzene • toluene • ethylbenzene • xylenes • naphthalene • phenols • cyanide Low concentrations of polynuclear aromatic hydrocarbons may also be found in the ground water.	No sewer samples have been collected at the site, but the chemicals that may be expected in the ground water may also be expected in the sewers.	No air samples have been collected at the site but the more volatile chemicals present in the soil may also be present in the air.
Chemical Transport Mechanism	Volatilization to air and/or seepage and leaching of soluble or free liquid wastes to ground water.	The ground water surface is expected to be within 20 feet of the ground surface. The silt and clay soils expected at the site may contain occasional layers of more permeable sands and gravels. Shallow ground water movement is anticipated to be to the west with discharge to Canaseraga Creek.	The storm sewer along Battle Street flows into a drainage ditch just west of the Dansville site. The drainage ditch is in the location of the former canal which was used in the mid-1800s. Based on field observations, the discharge would eventually flow to Canaseraga Creek, but the ditch is overgrown with vegetation and, under most circumstances, most discharge would infiltrate down into the soil and eventually to the ground water.	Volatilization and particulate migration occur via wind scour; however, most of the site is paved or covered with gravel. Volatilization is the primary route when materials are exposed. Winds in the area are generally from the northwest.

TABLE 5-1
(CONTINUED)

SUMMARY OF POTENTIAL ENVIRONMENTAL PROBLEMS AT THE DANSVILLE SITE

Technical Factors	On-Site Soils	Ground Water	Sewers	Air
Expected Persistence of Chemicals in the Environment	Biodegradation of coal tar present in the soils is very slow or nonexistent. The volatile fraction of the coal tar (benzene, toluene, ethylbenzene, and xylenes) is expected to leach slowly into ground water or vaporize slowly into the air. Naphthalene, phenols, and cyanides are also expected to leach into the ground water slowly. The polynuclear aromatic hydrocarbons and the heavy metals are not expected to vaporize or leach into the ground water at any significant rate.	Any constituent of coal tar present in the ground water is not expected to biodegrade very rapidly except perhaps the phenols. These constituents are expected to remain in ground water until it discharges to a surface water body where vaporization will eventually occur.	Any constituent in the sewers is discharged into the ditch where the constituent would enter the soil or eventually the ground water. The persistence of the constituent would then be as described for on-site soils or ground water.	Contaminants are rapidly dispersed and susceptible to photo-oxidation.
Existing or Potential Receptors - Chemicals	The probability of direct contact to humans or animals is low since the site is paved and the coal tar constituents are buried. However, leaching and volatilization may transport these chemicals to other media such as ground water and expose humans and animals off-site.	Ground water may discharge to nearby surface water body (Canaseraga Creek). There are no known domestic water or industrial wells in a one-mile radius of the site.	The probability of direct contact to humans or animals is low since there is no access to the sewers other than through manholes. However, discharge into the ditch, which is accessible, may expose humans or animals off-site.	Humans or animals in the vicinity of the site are potential receptors of any chemicals present in the air.

TABLE 5-2

PRELIMINARY IDENTIFICATION OF REMEDIAL ALTERNATIVES
FOR THE DANSVILLE SITE

Medium	Conceptual Action	Remedial Measure	Remarks
Soils	Removal	Excavation and Disposal • contaminated soils • waste deposits	Off-site disposal will involve excavation and removal of contaminated soils and waste deposits with subsequent transportation to another location. Potential impact on air quality during excavation.
	Containment	Capping, Grading, Revegetation • wastes • contaminated soils	Commonly implemented together, they will prevent the movement of wastes, contaminated soils into the environment from erosion. The cap will also reduce infiltration and, therefore, the rate of leaching of chemicals from the soils into the ground water.
		Slurry Wall	Generally used in conjunction with extraction and treatment of ground water.
	Treatment	Solidification	Large quantity of soils would be involved. Potential impact on air quality during excavation.
		Extraction (soil flushing)	Not applicable for large quantities of material with diverse compositions. A variety of treatment technologies are potentially applicable to extracted wastes. Extracted soils may still contain much contamination.
		Land Treatment	Generally not effective for high molecular weight organic or metallic contaminated materials. Requires suitable land be available. Surface application will require revegetation to control erosion and periodic cultivation to stimulate biological activity.
	No Action	Posting	May not be applicable for a complete remedial action plan, but may be used as an element of a comprehensive plan. Will be considered in conjunction with other technologies.
Ground water	Removal/Treatment	Extraction of ground water via pumping	If large volumes of water are to be extracted, on-site treatment may be appropriate. May include recharge or discharge to surface drainage. Extent of contamination and required operating period is not known. May require years of operation.
		Stripping or carbon adsorption	Stripping may cause air contamination without proper and expensive controls applicable to organic constituents; contaminated carbon filters require appropriate disposal.
	In-situ Treatment	Biostimulation	Analysis/culture of the contaminated water to determine the present activity and nutrient levels needed to stimulate hydrocarbon-utilizing bacteria.
		Aquifer flushing	May include the use of chemical additives. Often used in conjunction with ground water removal.
		Other technologies	Cost-effectiveness is dependent on concentration and types of contamination. Physical or physical/chemical technologies such as oxidation, precipitation, etc. may be applicable to highly contaminated waters.

TABLE 5-2
(Continued)

PRELIMINARY IDENTIFICATION OF REMEDIAL ALTERNATIVES
FOR THE DANSVILLE SITE

Medium	Conceptual Action	Remedial Measure	Remarks
Ground water (Continued)	Containment	Slurry Wall	Generally used in conjunction with extraction and treatment of ground water.
		Capping	See Soils.
	Diversion	Low permeable barriers	Prevent chemical migration within shallow aquifer.
		Injection wells/interceptor trenches	Control ground water flow direction. Generally used in conjunction with ground water extraction. To be considered in conjunction with other technologies.
	No Action		
Air	Removal of Source	Excavation	Major excavation to remove source of volatilizing chemicals may result in short-term degradation of air quality when soils are exposed to the atmosphere.
	Control	Capping • clay liner • synthetic liner	The addition of a cover will considerably reduce the release of volatilized chemicals and may require collection and removal of contaminant vapors.
	No Action		To be considered in conjunction with other technologies.
Sewer	Removal	Excavation and Relocation of Sewers	Removal of sewers will involve excavation and removal of contaminated soils and pipes and may require subsequent transportation to an approved disposal site. Potential impact on air quality during excavation.
		Lowering Water Table via Pumping	If large volumes of water are to be extracted, on-site treatment may be appropriate. Extent of contamination and required operating period is not known.
		Plugging and Relocation of Sewers	Avoids the air quality concerns of excavation. However, the sewer line bedding may still act as a permeable conduit for contaminated ground water.
		Sealing Sewer Line	Coating the interior of the sewer line has the same advantages and disadvantages as plugging.
	Treatment	Stripping or Carbon Adsorbtion	Stripping may cause air contamination without proper and expensive controls applicable to organic constituents; contaminated carbon filters require appropriate disposal.
	No Action	Posting, Fencing Land Restrictions	To be considered in conjunction with other technologies.

6.0 RECOMMENDATIONS

The following activities are recommended for Task 2, and are designed to meet the data requirements described in Table 5-3. Recommended activities involve subsurface investigations, and sampling of site soils, ground water, sewers, and air. Detailed discussion of these proposed Task 2 activities is presented in Appendix A, Task 2 Sampling Plan.

Subsurface investigations will involve test pits, borings, and monitoring wells. Test pits will allow for discovery and investigation of buried structures and past disposal practices. Six soil borings will allow for determination of the stratigraphy of the unconsolidated sediments at the site, as well as delineation of potential aquifers; each boring will be converted into a monitoring well. The six wells will be grouped into three well nests, which will have a deep and shallow well. One well nest will be upgradient and two well nests will be downgradient. The wells will provide hydrologic information, such as vertical and horizontal hydraulic gradients, aquifer hydraulic conductivities, and seasonal fluctuations of water levels.

Various media at the site will be sampled for potential contaminants. An average of one soil sample will be collected from each test pit. At test pits which appear to be uncontaminated, a composite sample over the entire depth will be taken. At contaminated test pits, the most apparently contaminated zone will be sampled. Where several test pits are clustered in a contaminated area, samples will be collected from different levels in the various pits, in order to delineate the vertical extent of contamination.

During the excavation of test pits, air samples will be collected upwind, downwind, and at the test pit, in order to develop data for risk assessment of remedial activities involving excavation. Two sampling media will be used. One media will collect volatile organic compounds for GC/MS analysis while the other will be focused on polynuclear aromatic hydrocarbons.

Four weeks after installation, the ground water monitoring wells will be sampled. In addition, the storm sewer will also be sampled for analysis. The storm sewer which passes along the northern side of the site will be sampled at three locations: upstream, downstream, and in the middle of the site. The proposed test pit, boring/monitoring well, sewer, and air sampling locations are discussed in detail in the Task 2 Sampling Plan (Appendix A).

The analytical program is designed to fulfill the data quality requirements discussed in Section 5. The organic analyses for soil, ground water, and air will be done by GC/PID, with GC/MS confirmation on two soil samples collected from the test pits and two samples each from the first two ground water sampling rounds. This program will allow comparison of data from different media and will yield concentrations at the trace level which are sufficient for comparison with regulatory and health criteria.

A report will be prepared to assess the data obtained in Task 2 in conjunction with the site information developed in Task 1. On the basis of the Task 2 findings, a preliminary assessment of risk will be completed and recommendations for continued investigation (Task 3), monitoring the existing situation, or discontinuing the program will be provided where appropriate.

0008-C
02-8710-106

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
	5/31/88	11:25

DISTRIBUTION:

NYSEG - Dansville

BETWEEN:	OF:	PHONE:
Nancy Wise ~~Village Clerk~~	Village Clerk - Dansville	(716) 335-5530

ANO:

A. Culmone NUS Corp.

DISCUSSION:

Village of Dansville population 5000
Canaseraga Creek recreational fishing

ACTION ITEMS:

NUS 067 REVISED 0685

0007-C
02-8710-106

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
	5/31/88	15:00

DISTRIBUTION:

NYSEG - Dansville

BETWEEN:	OF:	PHONE:
Timothy Wolfinger	Township Clerk Dansville	(716) 335-2330

AND:

DISCUSSION:

site size - 2 parcels : 150'x250'
: 7.488 acres

Township population 6000

Canaseraga Creek upstream stocking of trout by NYSDEC

ACTION ITEMS:

NUS 067 REVISED 0685

0015-C
02-8710-106-PA

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	OATE:	TIME:
	6/1/88	15:50

DISTRIBUTION: NYSEG - Dansville File

BETWEEN:	OF:	PHONE:
Dave Kosowski	NYSDEC - Avon office	(716) 226-2466

AND: A. Culmone

DISCUSSION:

General fisheries health for Canaseraga Creek Dansville Area: trout fishing, south begins to change to bass and walleye: ~~Exote~~ healthy populations

Stocking programs: Trout in Dansville and above.

ACTION ITEMS:

NUS 067 REVISED 0685