ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

City of Utica Dump
Site No. 633015
Town of Utica, Oneida County

Final - April 1988

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Prepared for:

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

Thomas C. Jorling, Commissioner
Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., Acting Director

Prepared by:

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

EA Report DEC52D1

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK
PHASE II INVESTIGATIONS

CITY OF UTICA DUMP
TOWN OF UTICA, ONEIDA COUNTY
NEW YORK I.D. NO. 633015

Prepared for

Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-0001

Prepared by

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R.D. 2, Goshen Turnpike
Middletown, New York 10940

A Division of EA Engineering, Science, and Technology, Inc.

April 1988

CONTENTS

1. EXECUTIVE SUMMARY

The City of Utica Dump site (New York I.D. No. 633015) is an inactive dump located at the end of Incinerator Road in the City of Utica, Oneida County, New York (Figure 1-1). The site, approximately 55 acres in size, is situated in a remote swampy area bordered by the Erie Barge Canal to the north, the Mohawk River to the south and east, and the City of Utica's Hardfill landfill to the west.

The site was operated by the City of Utica from the early 1930s until 1972 as a dump to dispose of municipal wastes, which included wastes from some local industries. An onsite incinerator operated at the site from approximately 1930 to 1960. Currently, the site is covered and overgrown, however trash and debris is exposed along the eastern and southern edge of the filled material. The northwest corner of the site is used for the disposal of snow removed from the City of Utica streets during the winter. The property adjacent to the west has been used as the City's disposal area for "hardfill materials" since 1972. This property however, is not considered in this Phase II investigation.
A locked gate is now present at the entrance of Incinerator Road with a guard during working hours. In the past, the entrance was not guarded or locked and unauthorized access was apparently a problem.

Leachate seeps and pools are visible at several locations along the perimeter of the site. Several drum clusters, as well as multiple scattered drums, were observed throughout the site (Figure 1-2).

During the Phase II investigation, 2 drum samples, 2 ground-water samples, 1 seep sample and 1 seep sediment sample were collected and analyzed for the inorganic parameters and organic compounds of the Hazardous Substance List. Elevated levels of several volatile and semi-volatile organics and metals were detected in one of the drum samples. A release of several metals to surface water was observed at the site.

The final HRS scores for the site are as follows: Migration Score (S_M) = 7.96; Direct Contact Score (S_{DC}) = 50.0; and Fire and Explosion (S_{FE}) = N/A. The lower S_M is due to ground water and surface water not being used as a drinking water supply in a 3-mi radius of the site.

Site Coordinates:
Latitude: 43° 06' 18"
Longitude: 75° 11' 55"

CITY OF UTICA DUMP

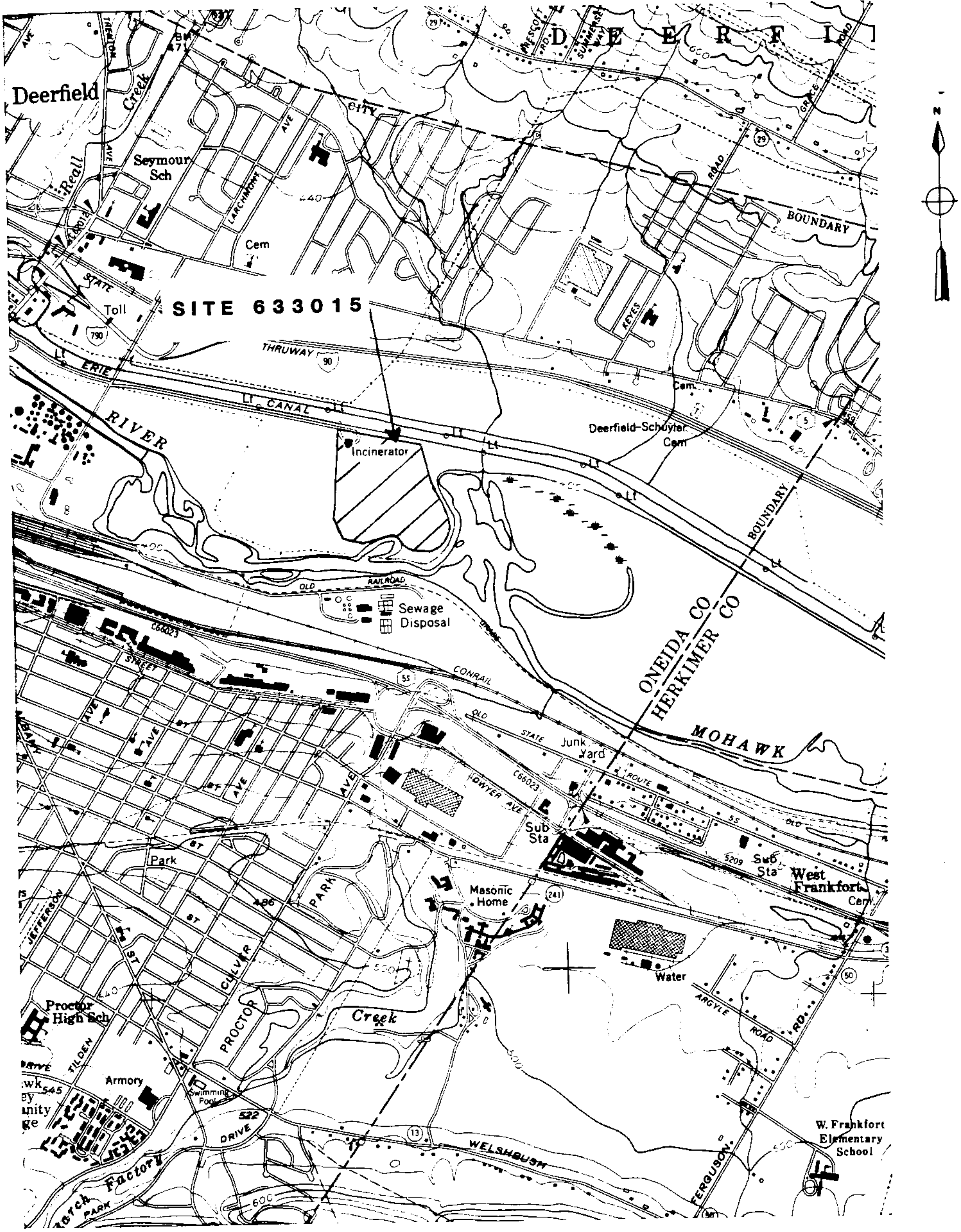

Figure 1-1

SCALE 1"=2000'

UTICA EAST QUAD

7.5 Minute Series 1978 Edition

CITY OF UTICA DUMP

Note: Base map modified from
23 June 1984 aerial
photograph (enlarged).

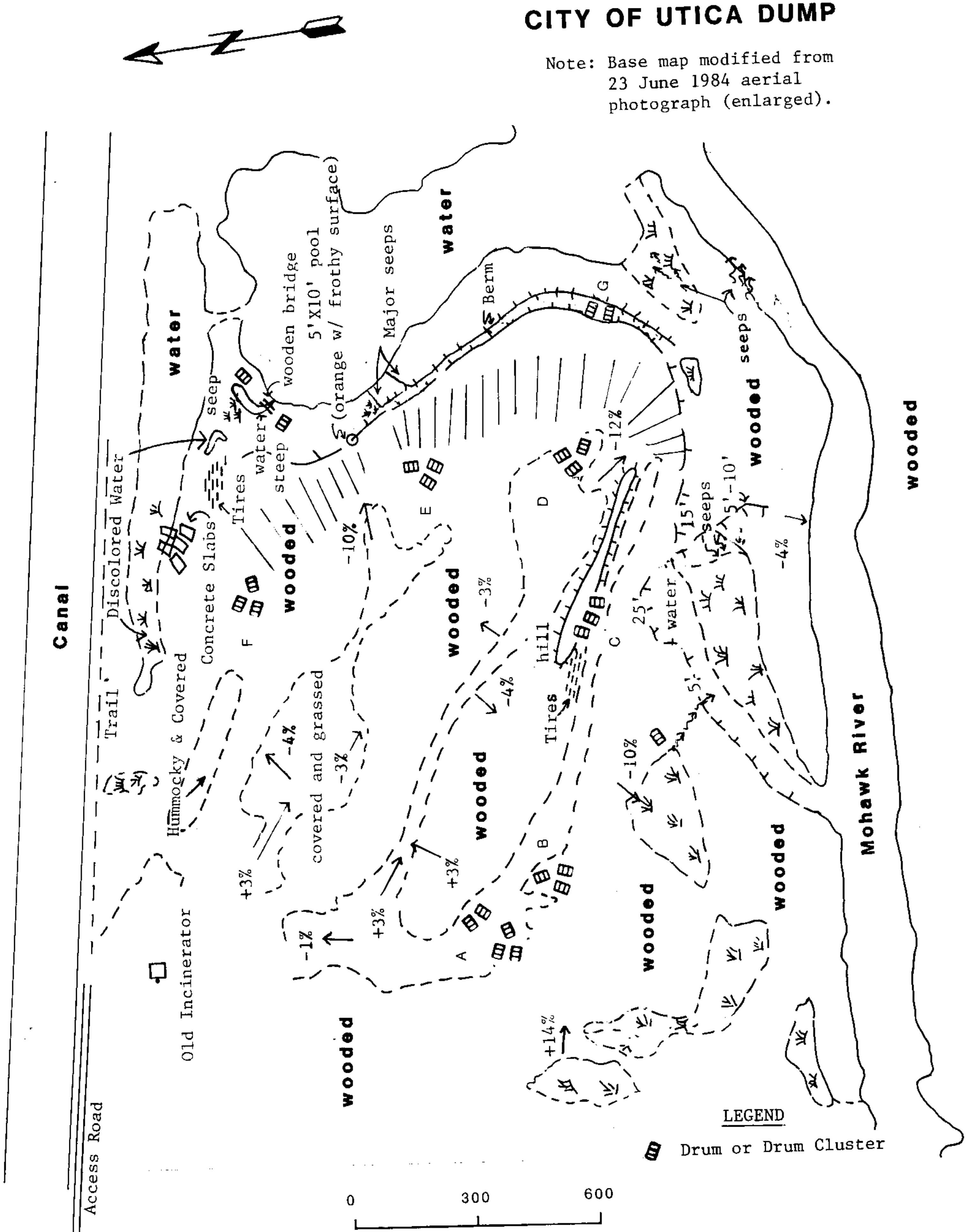

Figure 1-2. Site sketch City of Utica Dump

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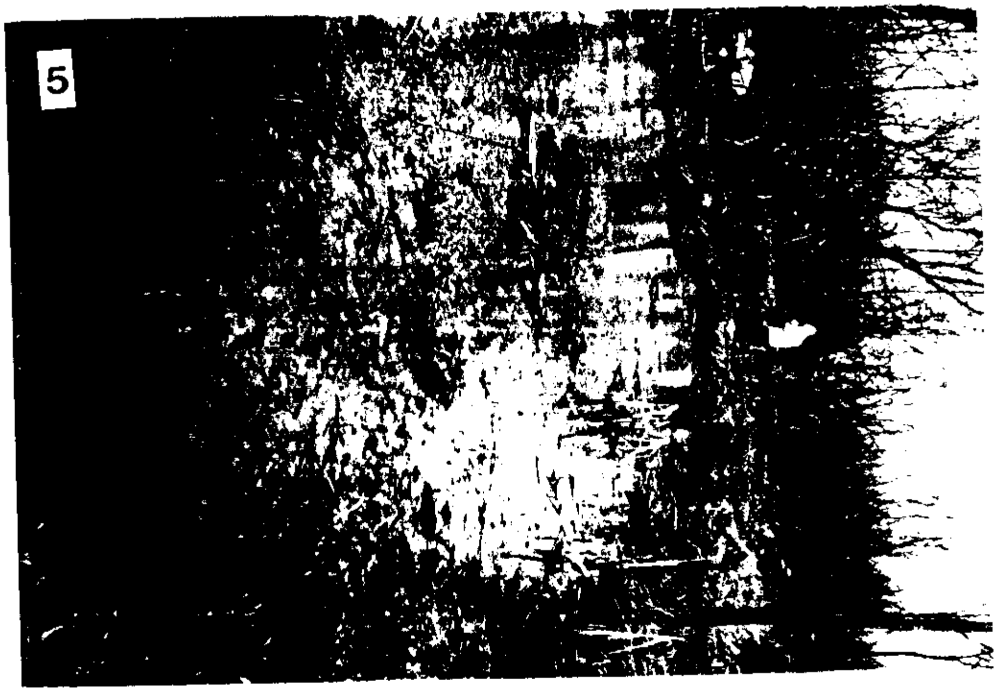

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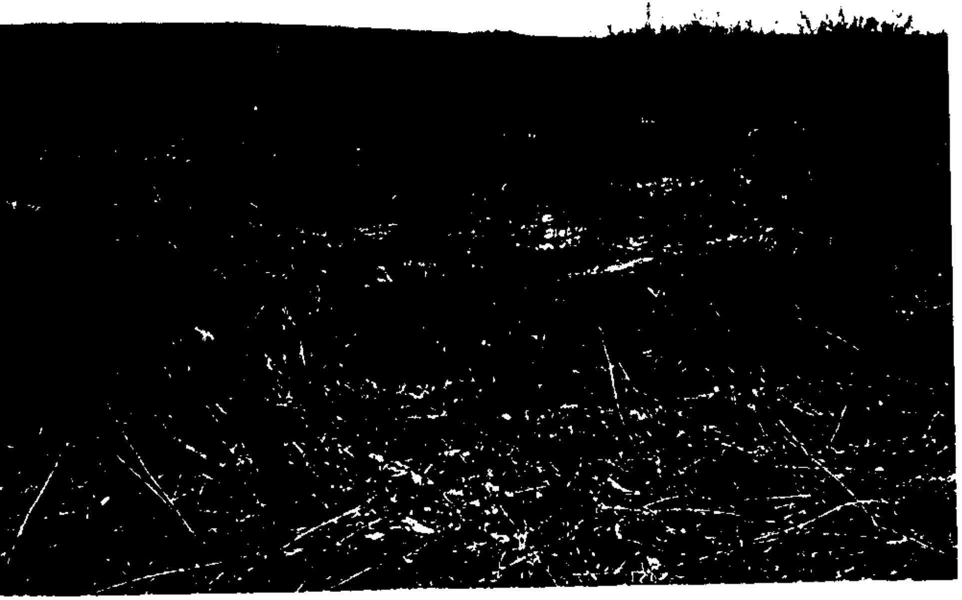

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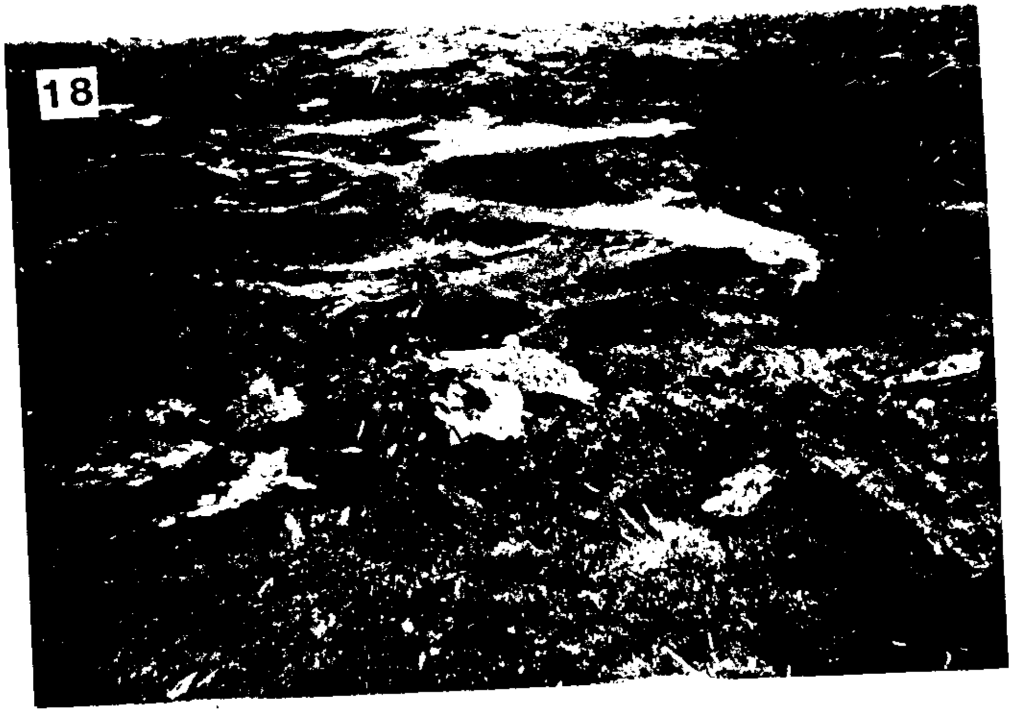

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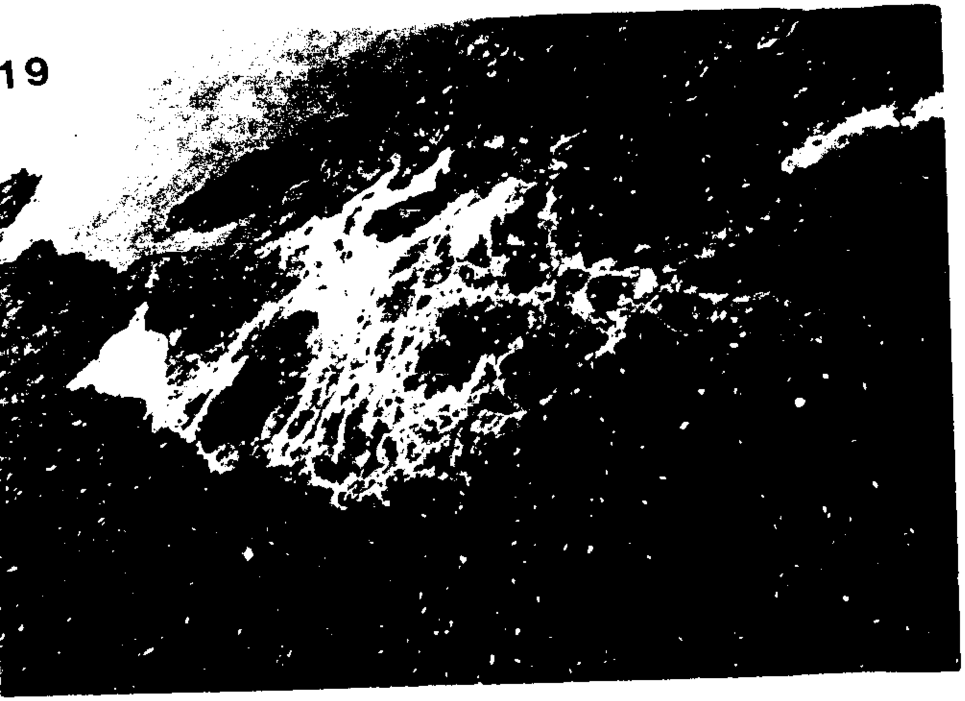

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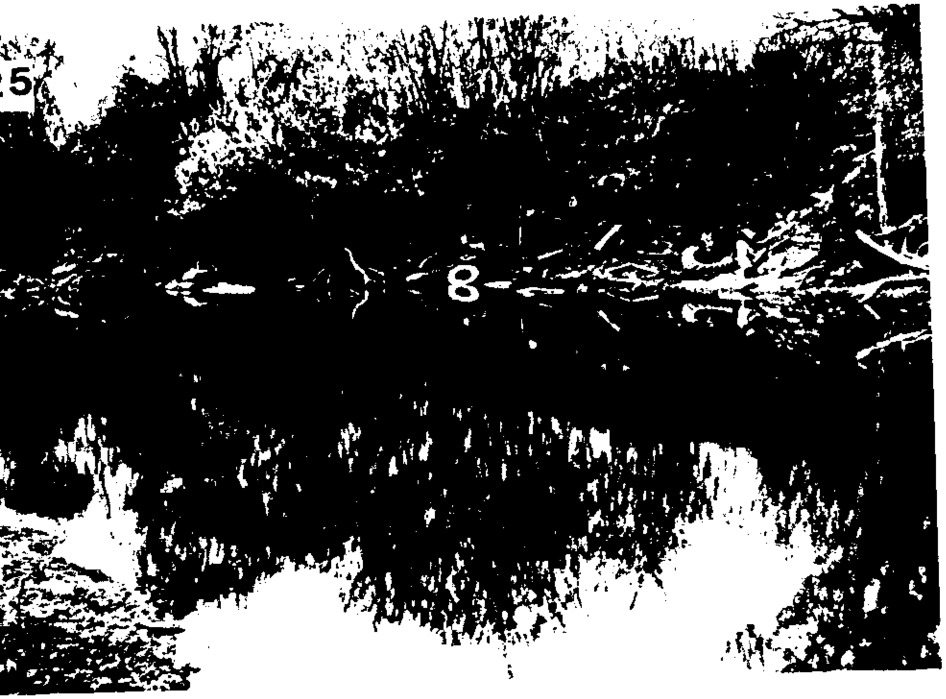

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PHOTO LOG - UTICA DUMP SITE
(1 May 1985, except as noted)

Photo	Description
1	View east along canal with locks open (19 April 1985).
2	View west along canal with locks closed (Figure 1-1).
3	Drum cluster and tires apparently identified in the vicinity of the old incinerator by the NUS Corporation's site inspection team (Appendix 1.4.1-7). These drums were observed by EA to be open top "DPW" drums with road debris, trash, or empty (19 April 1985).
4	Remains of the old onsite incinerator building.
5	View south across small swamp located approximately 400 ft east of the old incinerator (Figure 1-2) (19 April 1985).
6	View south of ponded water and debris (including major appliances) located approximately 100 ft southwest of Photo No. 5 (19 April 1985).
7	View of seep in southeast portion of site.
8	View east of the east/west trending swamp located in the northeast portion of the site (19 April 1985).
9 through 15	Panoramic view from a point approximately 200 ft northwest of Drum Cluster No. E (Figure 1-2). Photo No. 9 begins northwest toward the old incincerator (stack visible). Photo Nos. 10 and 11 are views toward the north and northeast. Photo Nos. 12 and 13 are views toward the east. Photo Nos. 14 and 15 are views toward the southeast and south, respectively. Drum Cluster No. D is located in upper right portion of Photo No. 14 and the upper left portion of Photo No. 15.
16	View west of the southern of two major seeps observed along the eastern perimeter of the site.
17	View northeast across inlet in southeast corner of the site.
18	Seeps located approximately 150 ft north of monitoring well UD-2 (Figure 3-1) and in lower left central portion of Photo No. 17.
19	Seeps flowing directly into Mohawk River southwest of monitoring well UD-2 (Figure 3-1).
20	View west along the Mohawk River near monitoring well UD-2.
21 and 22	Views west toward the debris exposed along the eastern toe of the dump. Debris slope in Photo No. 22 is approximately 10-15 ft in height.

PHOTO LOG (Cont.)

Photo	Description
23 and 24	Southwestern view of the bay/backwater area which flows directly in to the Mohawk River beyond the left center edge of Photo No. 23. This area is located in the south-central portion of the site.
25	North view of the exposed debris along the south toe of the dump located in the right-central portion of Photo No. 24.
26	North view of seeps flowing into the eastern end of the bay area shown on Photo No. 24.
27	West view across swamp and overflow channel located just west of (beyond) the bay area shown on Photo No. 23.
28	Northwest view of overflow channel (shown in Photo No. 27) where it discharges into the western (far) end of the bay area shown in Photo No. 23.
29	Drum Cluster No. A located in the western portion of the site where drum sample UD-D1 was collected (Figure 3-1).
30	South view of Drum Cluster No. B. Drum sample UD-D2 was collected from the green colored drum located near the left edge of the photo, and in Photo No. 31.
31	Drum in Cluster No. B from which sample UD-D2 was collected on 8 April 1987.
32 and 33	North and east views, respectively, of Drum Cluster No. C. These drums were empty and either open topped and/or rusted through. Many appear to have had plastic liners.
34	South view of Drum Cluster No. D. which was composed of open top, rusted through, empty and partially full drums of cured/hardened asphalt-like material.
35 and 36	Drum Cluster No. E which was composed of open top and rusted through drums containing what appears to be metallic slag (heavy in weight).
37	Drum Cluster No. F which was composed of open top and rusted through drums of what appeared to be trash and debris, plus one weathered plastic drum liner.
38	View south of Drum Cluster No. G observed for the first time on 8 April 1987.

PHOTO LOG (Cont.)

Photo	Description
39	South view of monitoring well UD-2 (center of photo) located on an inaccessible island due to flooding of the Mohawk River during the 7-8 April 1987 sampling activity.
40	Northeast view of monitoring well UD-3 (center of photo) during the 7-8 April 1987 sampling activity.
41 through 44	Southeast to south panoramic view of the Mohawk River, major seep just north of monitoring well UD-3 (shown near upper left center of Photo No. 43), and the collection of seep sample No. UD-SP1.

2. PURPOSE

The goal of the Phase II investigation of this site was to: (1) obtain available records on the site history from state, federal, county, and local agencies; (2) obtain information on site topography, geology, local surface and ground-water use, contamination assessments, and local demographics; (3) interview site owners, operators, and other groups or individuals knowledgeable of site operations; (4) conduct a site inspection to observe current conditions; (5) perform geophysical surveys around the site to evaluate the stratigraphy and potential presence of ground water contaminant plumes; (6) install test borings/monitoring well and perform environmental sampling; amd (7) prepare a Phase II report. The Phase II report includes a final Hazard Ranking Score (HRS), an assessment of the available information, and a recommendation for remedial work.

3. SCOPE OF WORK

3.1 RECORD SEARCH/DATA COMPILATION

A record search/data compilation and interviews were conducted as part of the Phase II investigation of the Utica Dump site. Appendix 1.3.1-1 contains a list of agencies or individuals contacted.

3.2 FIELD ACTIVITIES

3.2.1 Site Reconnaissance

EA Science and Technology conducted a site reconnaissance on 19 April 1985 and 1 May 1985 to familiarize key project personnel with the site (Figure 1-2 and Photos in Section 1). During the site reconnaissance, visible waste and/or filled areas were located, tentative locations for test borings/observation wells and sampling were selected, accessibility was evaluated and HNU measurements (upgradient and site-wide) were obtained to help the Safety Officer develop specific health and safety requirements for the field activities. No significant HNU readings above background were detected. Photographs of the site were taken and significant features were noted on an aerial photograph (Scale: 1" = 300', dated 23 June 1984) of the site.

3.2.2 Geophysical Surveying

Geophysical surveys of the site were conducted by Delta Geophysical, Inc. under EA's supervision on 30 and 31 May 1985.

The purpose of the geophysical investigation was to non-destructively, accurately, and cost effectively evaluate possible subsurface conditions at the site, including stratigraphy, depth to water, and potential contaminant plumes. The geophysical information (anomalous zones) were then used to aid in final selection of the locations for monitoring wells.

The existing site data (geology, area size, hydrogeology, etc.) was reviewed. Upon completion of the geophysical survey, interpretation of the geophysical data was made prior to leaving the site. Monitoring wells were then located in accordance with subsurface geophysical anomalous zones, general hydrogeologic information, and areas physically accessible to a drill rig.

The geophysical technique used first at the site was terrain conductivity (electromagnetic or EM) perimeter survey, using an EM-34 with 20-meter cable and effective depth of penetration of 45 and 90 ft below grade. The data gathered from this type of survey indicated zones of anomalous conductivity. The second technique used was resistivity. This method measured vertical changes in subsurface resistivity, providing data for evaluation of depth to ground water, depth to rock, and general stratigraphy (Appendix 1.3.2-1).

3.2.3 Observation Well Installation

For the purpose of establishing ground-water flow direction and to document a release of contaminants to the ground water at the site, monitoring wells were installed in a triangular pattern around the perimeter of the site. Based on local topography and the Mohawk River/barge canal, ground water was anticipated to flow towards the southeast. Monitoring Well UD-1 was installed on the northwestern edge of the site to characterize ambient ground water quality. Monitoring Well UD-2 was installed on the eastern edge of the site in an anomalous zone (possible subsurface contamination) detected by the geophysical terrain conductivity survey. Monitoring Well UD-3 was installed along the southeastern edge of the site, in another anomalous zone detected by the terrain conductivity survey. The three test borings/monitoring wells were installed at the site (Figure 3-1) on 27-28 June and 1 July 1985. This was performed under the fulltime supervision of an EA geologist.

Access to the well locations required the use of a track-mounted CME-45 drill rig. The three borings/wells (Well Nos. UD-1, UD-2, and UD-3) were completed in unconsolidated sediment using a 4-1/4-in. I.D. hollow stem auger. All wells were completed in the upper portion of the first ground water encountered. Well UD-1 was completed beyond the originally estimated depth, and 15 ft of 2-in. diameter slotted PVC well screen was installed rather than 10 ft. Well UD-1 was intended to monitor upgradient ground-water quality. Upon installation of all three wells and several water level measurement rounds, it was evident that Well UD-1A is upgradient of the dump site under normal conditions (Mohawk River and Canal at normal stages). During flood stages, however, ground-water flow direction apparently reverses (only two monitoring well locations were accessible, UD-1A and UD-3) and UD-1 is not upgradient of the dump site. Such a reversal was observed during the 7 April 1987 sampling event.

Upon arrival at the site during the surveying task (11 October 1985), it was noted that Well UD-1 had been vandalized and was unlocked. After notifying New York State Department of Environmental Conservation (NYSDEC), EA was told that

NYSDEC would have a replacement well (UD-1A) installed. Well UD-1A was installed under NYSDEC supervision on 5 April 1986 approximately 25-30 ft east of Well UD-1. EA's well installation procedures are detailed in Appendix 1.3.2-2. Grain size analysis was performed on selected representative sediment samples collected during drilling. The boring logs are presented in Figures 3-2 through 3-5 and resultant grain size analysis curves for selected sediment samples are provided in Figures 3-6 through 3-15.

On 8 and 9 July 1985, the monitoring wells were developed using a centrifugal pump. Polyethylene flexible pipe with a flat washer attached approximately 6 in. from the end was used as the suction line. The washers allowed the well to be surged as it was pumped. New polyethylene pipe and washers were used in each well.

Development of Wells UD-2 and UD-3 was completed shortly after well installation was completed. Well UD-1 recharges very slowly, and required additional development, performed during other field activities (e.g., pump tests and surveying). Details of EA's development procedures are provided in Appendix 1.3.2-2. Well UD-1A was developed by NYSDEC.

Upon completion and development of the monitoring wells, vertical elevation of the upper rim of each PVC well casing was surveyed to aid in evaluation of the ground-water flow direction. A Kern-Swiss Automatic Construction Level GKO-A was used to perform the surveying on 10 August 1985. Elevations were determined in ft below/above an assumed datum of 100 ft, established on the upper rim of the UD-1 PVC well casing. Replacement Well UD-1A was surveyed during the sampling event on 8 April 1987.

A short-term, low-yield pumping test was performed in monitoring Wells UD-1, UD-2, and UD-3 on 10 August 1985, using a centrifugal pump. Pumping test procedures are detailed in Appendix 1.3.2-2. Figures 3-16 to 3-21 show the pumping test data curves. Table 3-1 provides a summary of well data for the site.

3.2.4 Sampling

Sampling of the Utica Dump site was performed by EA personnel on 7 and 8 April 1987. The program originally included three ground-water samples (one each from UD-1A, UD-2, and UD-3), two surface water samples from the Mohawk River (one upstream and one downstream of the site), one seep sample, three surficial sediment samples collected at the location of each seep and surface water sample, and three drum samples. Upon arrival at the site, however, monitoring Well UD-2 was determined inaccessible due to flooding of the Mohawk River, and could not be sampled (Photo No. 39). Therefore, ground water samples were collected only from UD-1A and UD-3. The two surface water samples were not collected because the proposed sampling locations were also inaccessible. Therefore collection of the seep and seep sediment samples were carefully documented so as to directly confirm a release of contaminants detected in the seep, to the River (Photo Nos. 41 through 44). Two drum content samples were also collected, including one composed of white crystalline material and one composed of liquid with a strong solvent odor. Upon closer inspection of the third planned drum content sample, these drums appeared to be composed of cured/hardened asphalt and were not sampled. Refer to Figure 3-1 for sample locations.

The sampling procedures are detailed in Appendix 1.3.2-3. EA's Field-Data Sheets for purging and sampling are provided in Figures 3-22 and 3-23.

The analytical program for the water and sediment samples included the inorganic parameters and the organic compounds of the Hazardous Substance List. The program was performed in accordance with NYSDEC-CLP. The full CLP package of analytical results is enclosed as Appendix 3 of this report (bound separately).

TABLE 3-1 SUMMARY OF MONITORING WELL DATA FOR THE CITY OF UTICA DUMP SITE

	Observation Well			Ground Water		
Well No.	Stickup (Ft above ground surface	Total depth (ft below ground surface	Elevation of MP	Date	Depth (ft below MP)*	Elevation**
UD-1	1.82	29.5	100	16 OCT 1985	10.76	89.24
UD-1A	1.76	34.0	99.85	16 OCT 1985	---	
UD-2	2.50	17.5	89.8	16 OCT 1985	6.32	83.48
UD-3	2.30	17.5	89.26	16 OCT 1985	4.84	84.42
UD-1	1.82	29.5	100	07 APR 1987	13.82	86.18
UD-1A	1.76	34.0	99.85	07 APR 1987	13.35	86.50
UD-2	2.50	17.5	89.8	07 APR 1987	---	---
UD-3	2.30	17.5	89.26	07 APR 1987	2.30	86.96
UD-1	1.82	29.5	100	28 APR 1987	10.26	89.74
UD-1A	1.76	34.0	99.85	28 APR 1987	10.62	89.23
UD-2	2.50	17.5	89.8	28 APR 1987	6.26	83.54
UD-3	2.30	17.5	89.26	28 APR 1987	6.01	83.25

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* MP = Measuring point (top of PVC or steel well casing).

** Feet above or below an assumed datum of 100 ft, established at Well UD-1.

CITY OF UTICA DUMP

Note: Base map modified from
23 June 1984 aerial
photograph (enlarged).

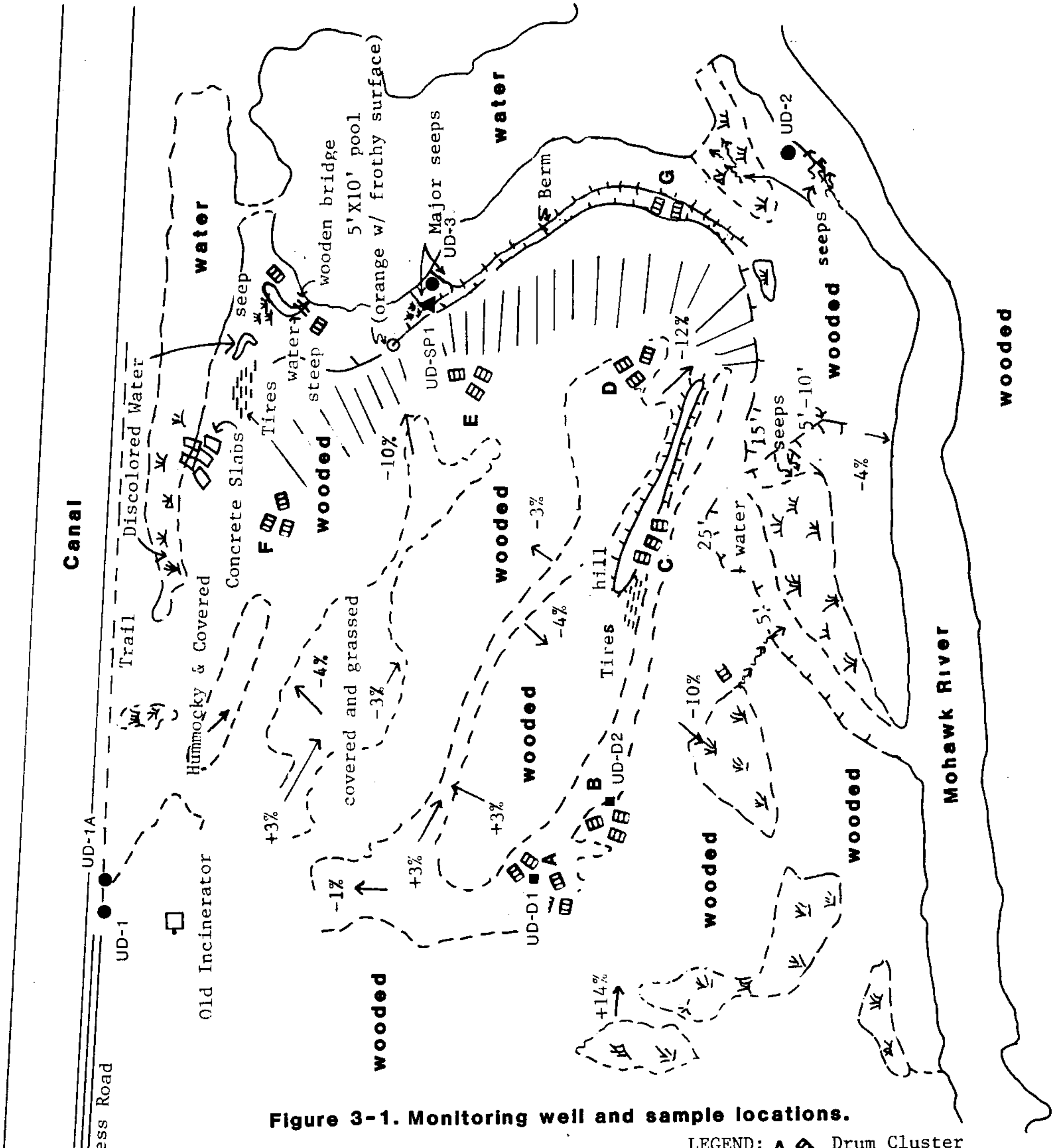


Figure 3-1. Monitoring well and sample locations.

0 300 600
Approximate Scale(feet)

LEGEND: A ⊗ Drum Cluster
Slope of Ground
↘3% Surface Slope
● Monitoring Well
▲ Seep Sample

Figure 3-2

ATLANTIC TESTING LABORATORIES, Limited

SUBSURFACE INVESTIGATION

Report No. CD642-1-4-86

CLIENT NYS Dept. of Environmental Conservation
Albany, NY

Location of Boring As staked by client

PROJECT Utica Landfill
I.D. No. 633015

Date, start 4-5-86 Finish 4-5-86

Boring No. UD-1 Sheet 1 of 1

Casing Hammer
Wt ______ lbs.
Fall ______ in.

Sampler Hammer
Wt 140 lbs.
Fall 30 in.
Casing ______
H S. Auger 3-1/4" ID

Ground Elev. ______

Ground Water Observations

Date	Time	Depth	Casing at
4-5-86	-	8.0'	-

DEPTH	CASING BLOWS/FT.	SAMPLE NO.	DEPTH OF SAMPLE FROM	TO	TYPE SAMPLE	BLOWS ON SAMPLER PER 6" SAMPLER O.D. 2"	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL f-fine m-medium c-coarse and — 35-50% some — 20-35% little — 10-20% trace — 0-10%	STANDARD PENETRATION NUMBER
		1	0.0	2.0	ss	4-7-14-4		cmf SAND and COBBLES	
		2	2.0	4.0	ss	12-11-8-10		cmf SAND, SILT and GRAVEL	
		3	4.0	6.0	ss	7-10-10-12		mf SAND and SILT	
		4	8.0	10.0	ss	2-2-3-4		Similar Soils	
		5	15.0	17.0	ss	3-4-6-7		Silty CLAY and some SAND	
	AUGER	6	20.0	22.0	WOH	2-3-3		Silty CLAY	
		7	25.0	27.0	ss	2-2-3-4		Silty CLAY; fine SAND (saturated)	
		8	30.0	32.0	ss	1-1-2-2		Silty CLAY and fine SAND	
		9	35.0	37.0	ss	6-6-5-7		Similar Soils	

Boring Terminated at 37.5'

NOTE: Monitoring well installed in boring; see attached well installation diagram.

SS — SPLIT SPOON SAMPLE

ATLANTIC TESTING LABORATORIES, LIMITED

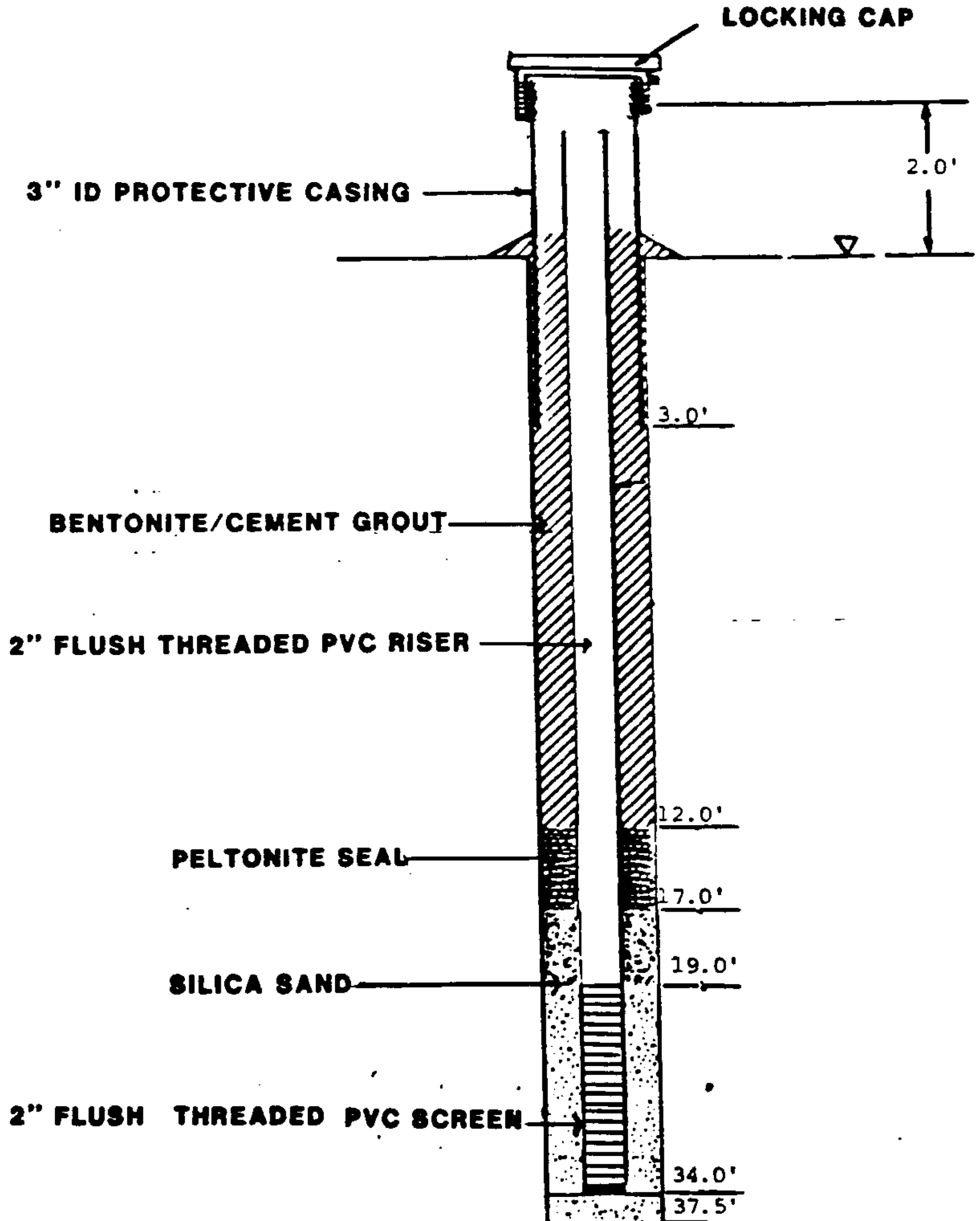
MONITORING WELL INSTALLATION DETAIL

PROJECT: Utica Landfill
I.D. No. 633015

PROJECT NO. CD642-1-4-86

CLIENT: NYS Dept. of Environmental Conservation
Albany, NY

WELL NO. UD-1



▽ @ 22'-25' bg
per AG

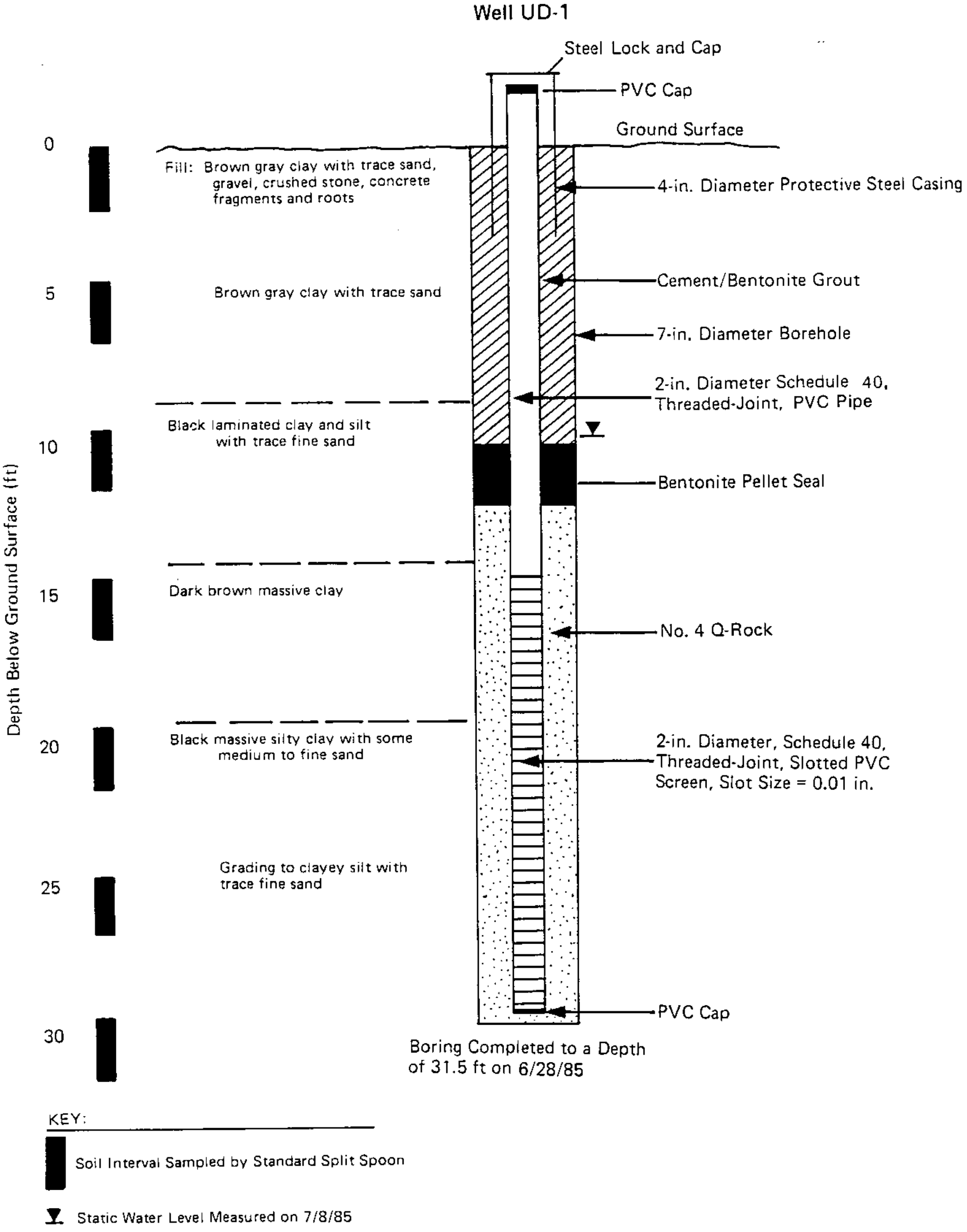


Figure 3-3. Boring log and well schematic, City of Utica Dump Site.

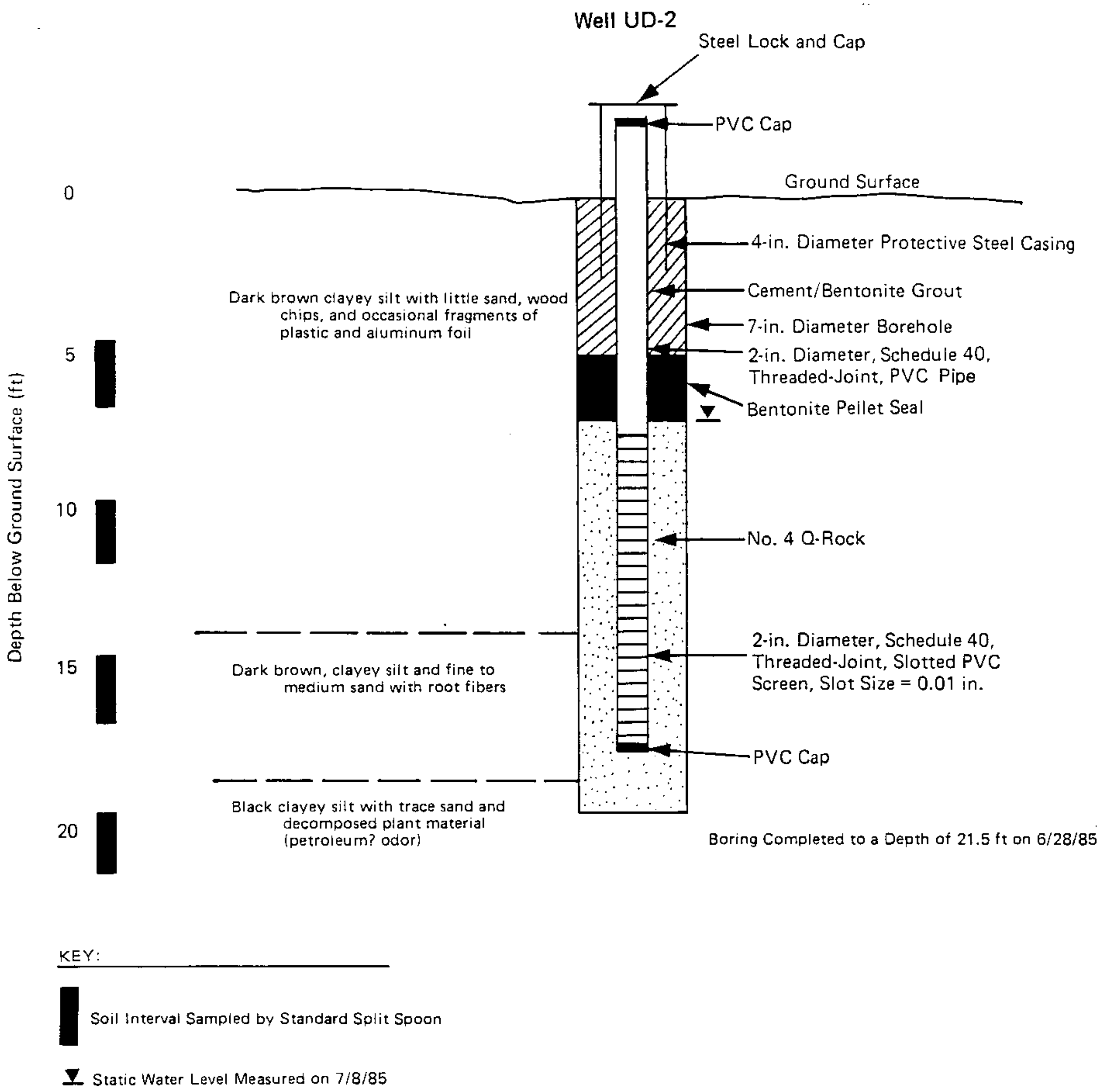


Figure 3-4. Boring log and well schematic, City of Utica Dump Site.

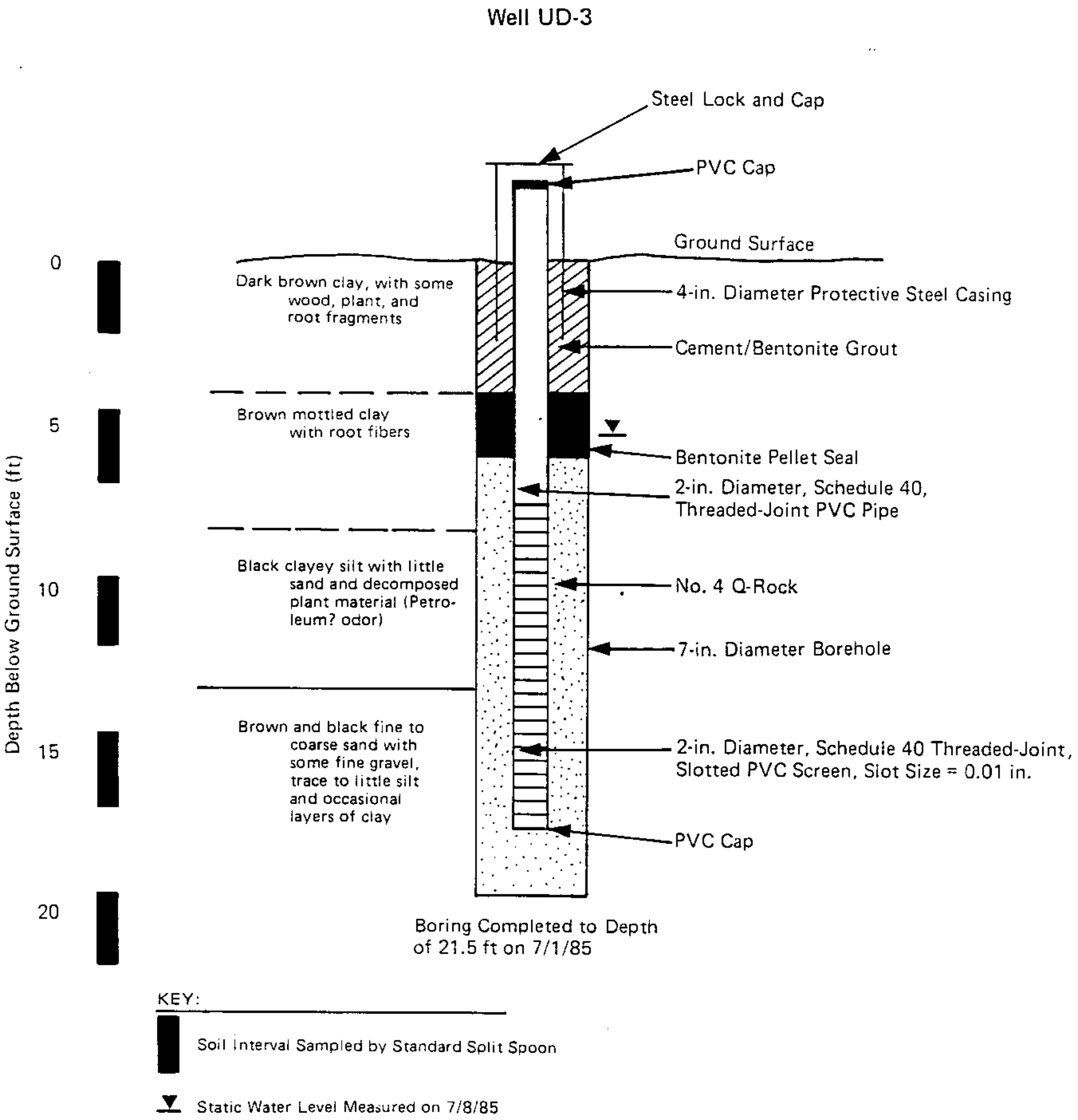


Figure 3-5. Boring log and well schematic, City of Utica Dump Site.

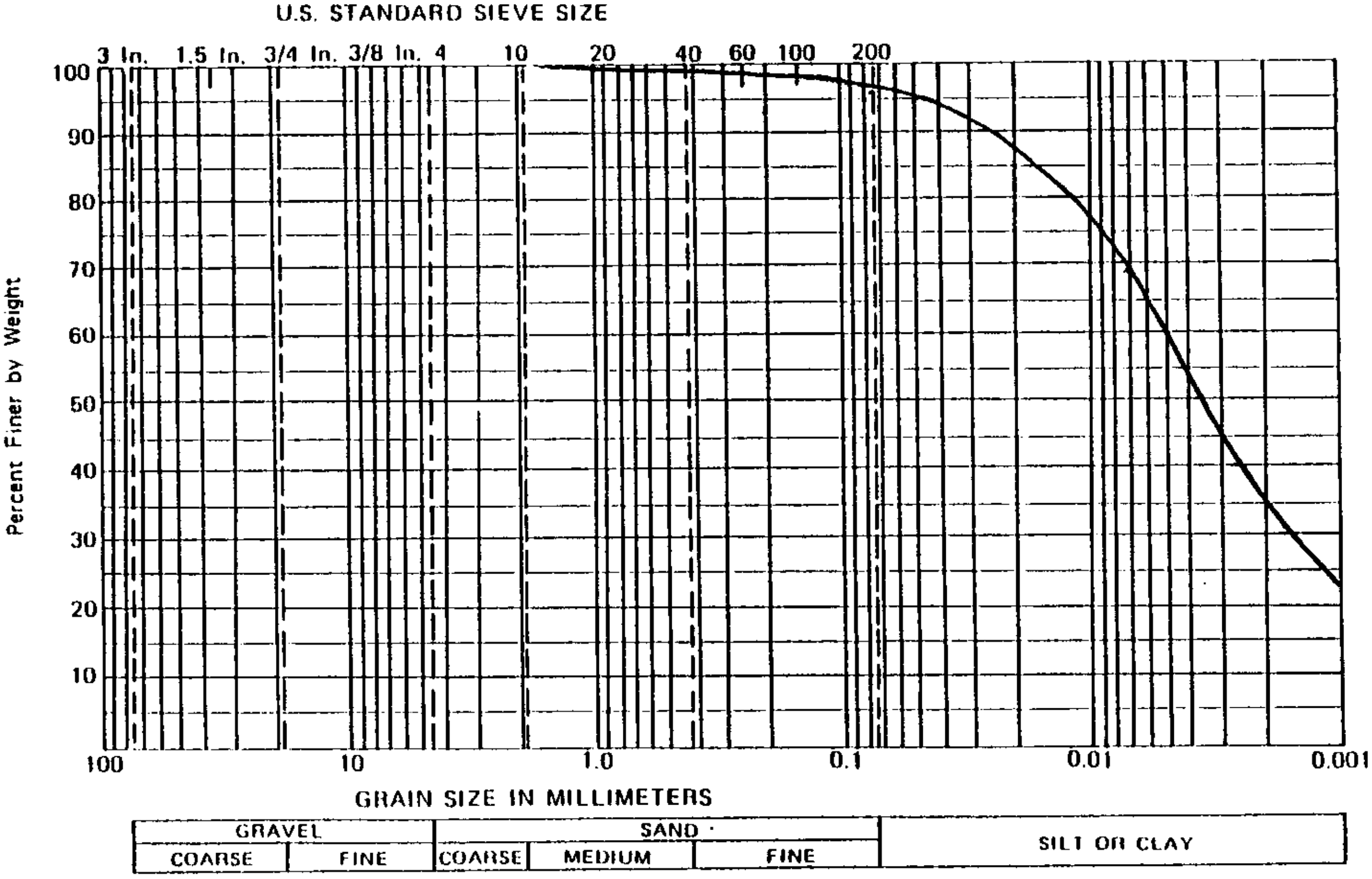
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-1 Sample No. 3

Depth 9.5-11.5 Elevation



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-1 Sample No. 5

Depth 19.5-21.5 Elevation

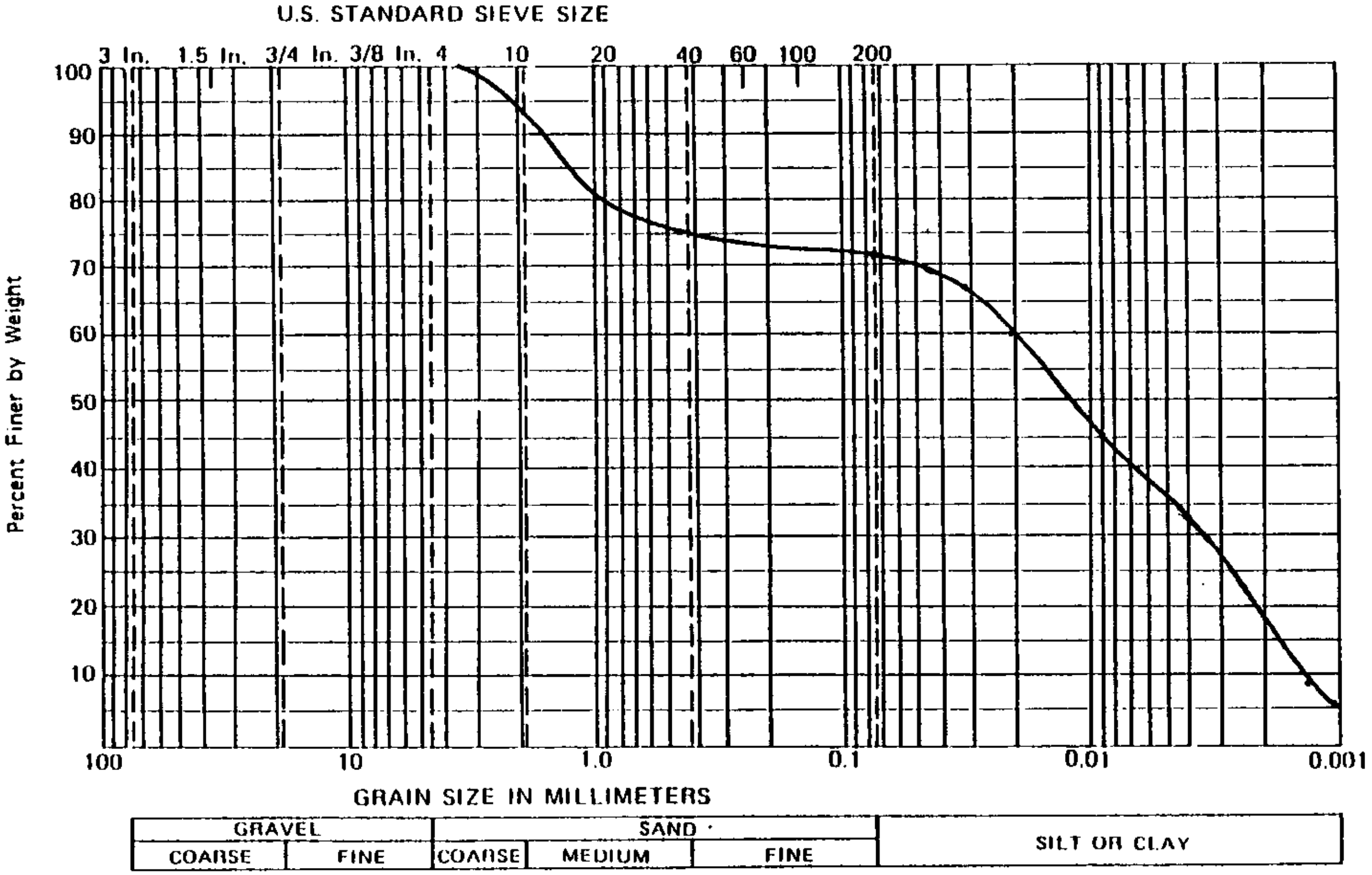


Figure 3-7

EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-1 Sample No. 6

Depth 24.5-26.5 Elevation

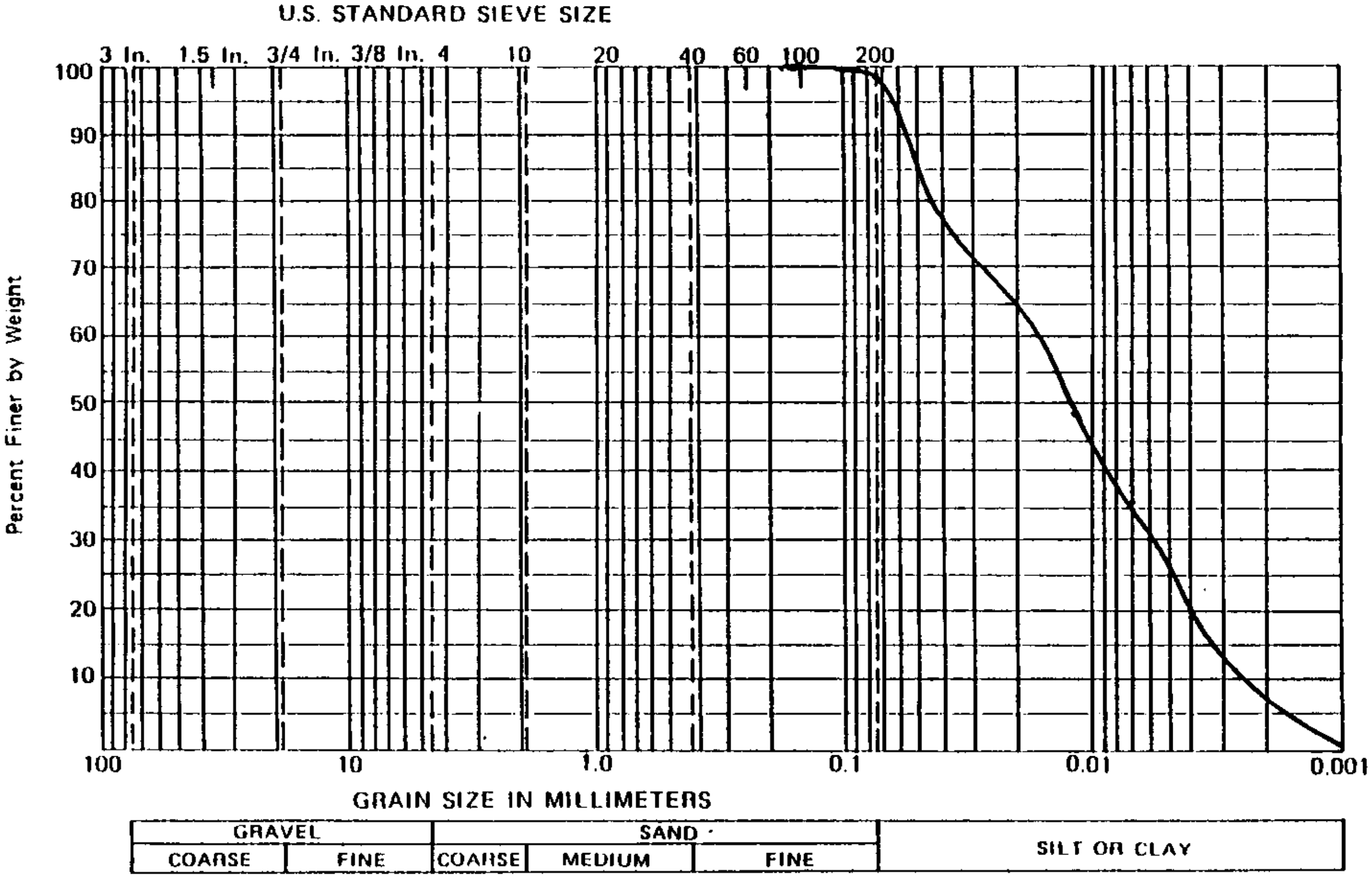


Figure 3-

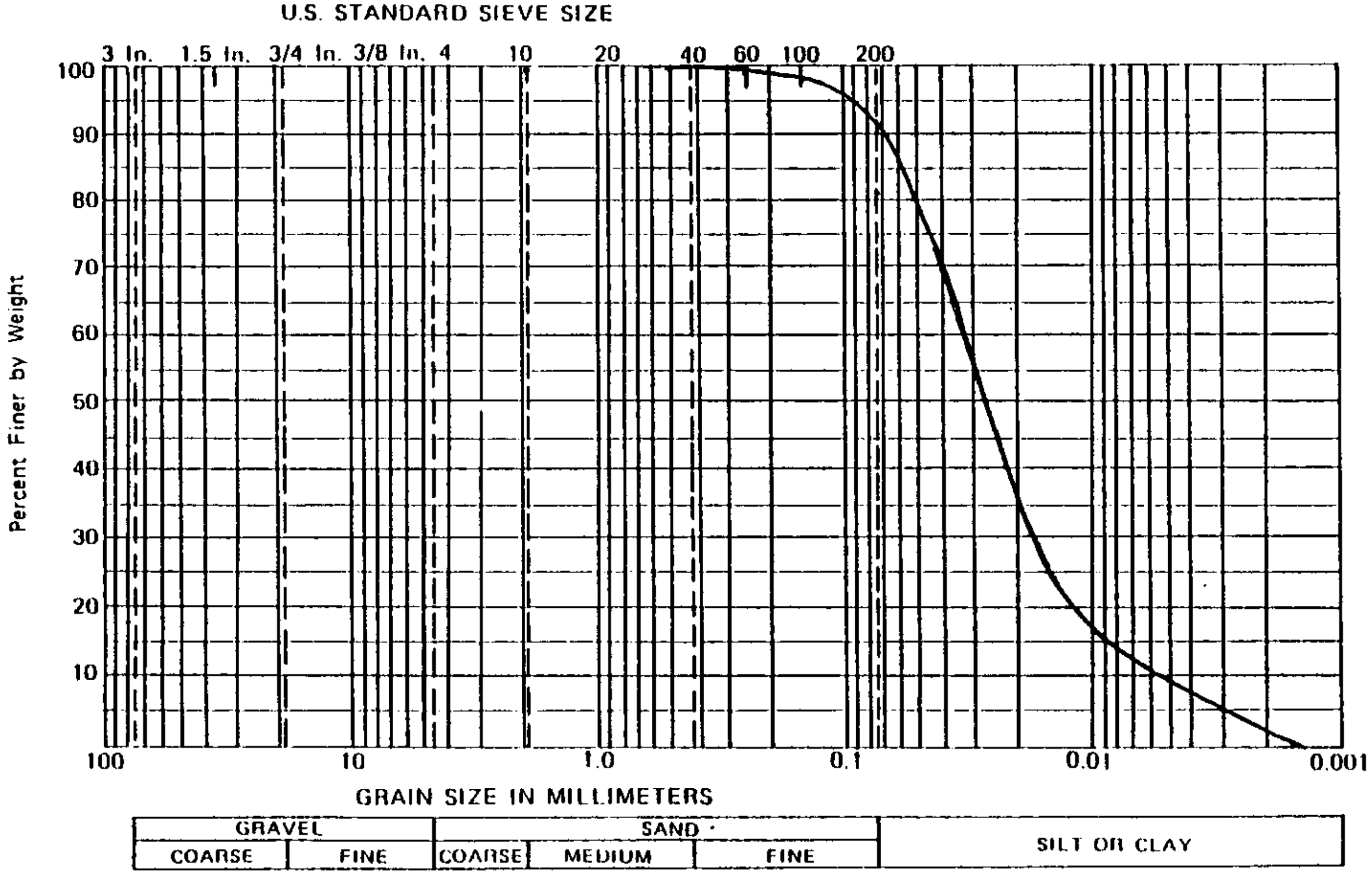
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-1 Sample No. 7

Depth 29.5-31.5 Elevation



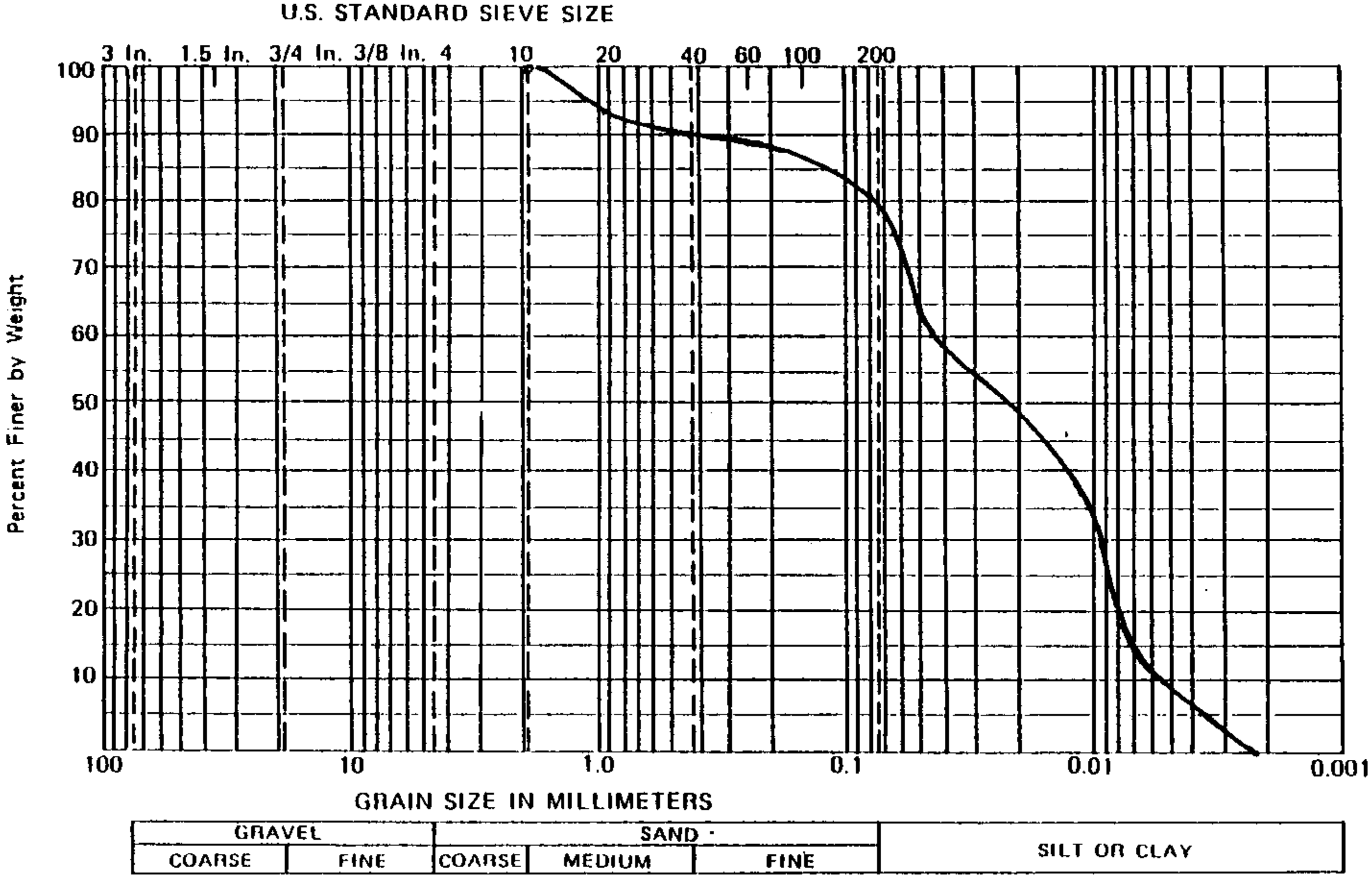
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-2 Sample No. 3

Depth 9.5-11.5 Elevation



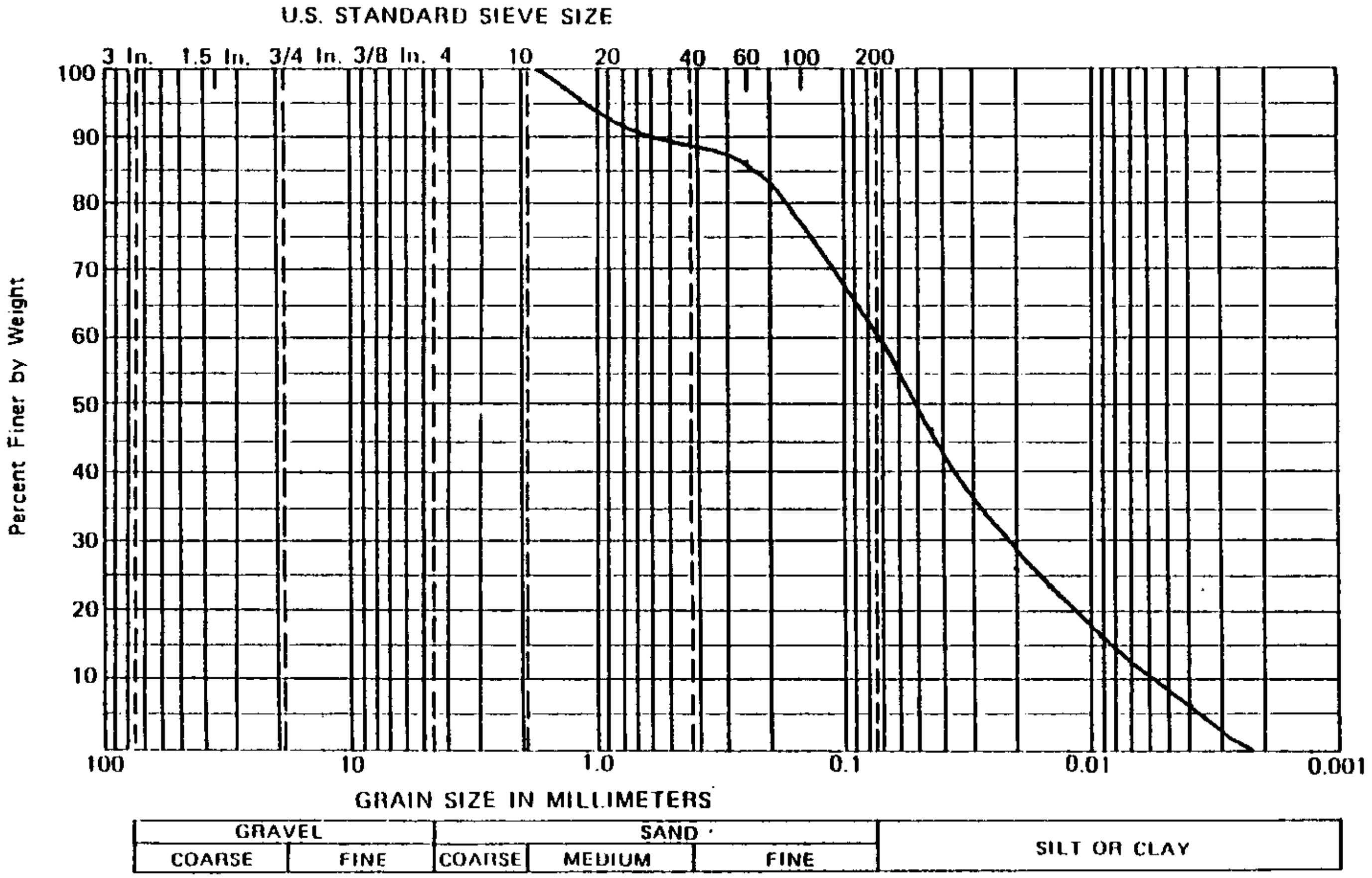
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-2 Sample No. 4

Depth 14.5-16.5 Elevation



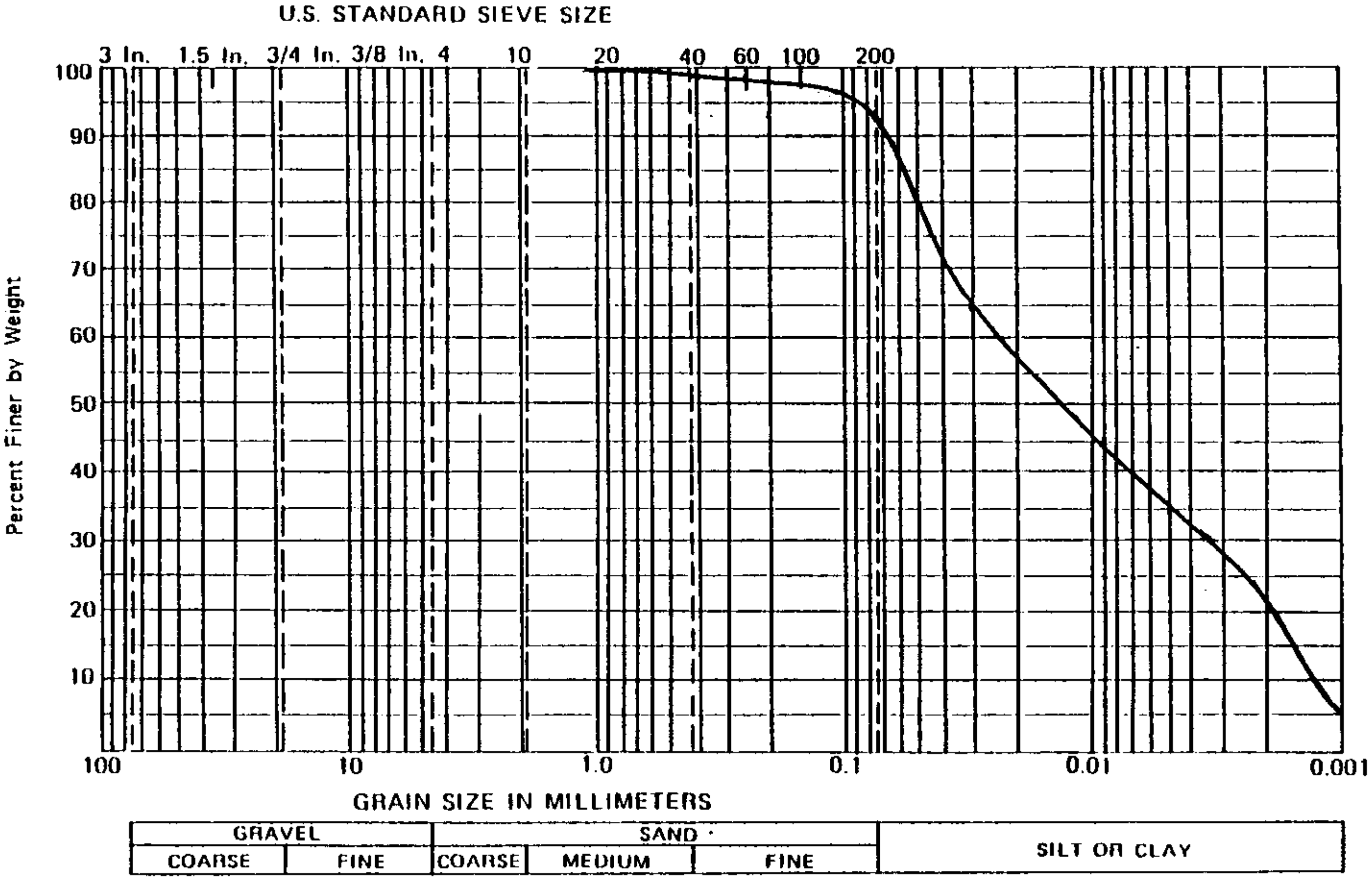
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-2 Sample No. 5

Depth 19.5-21.5 Elevation



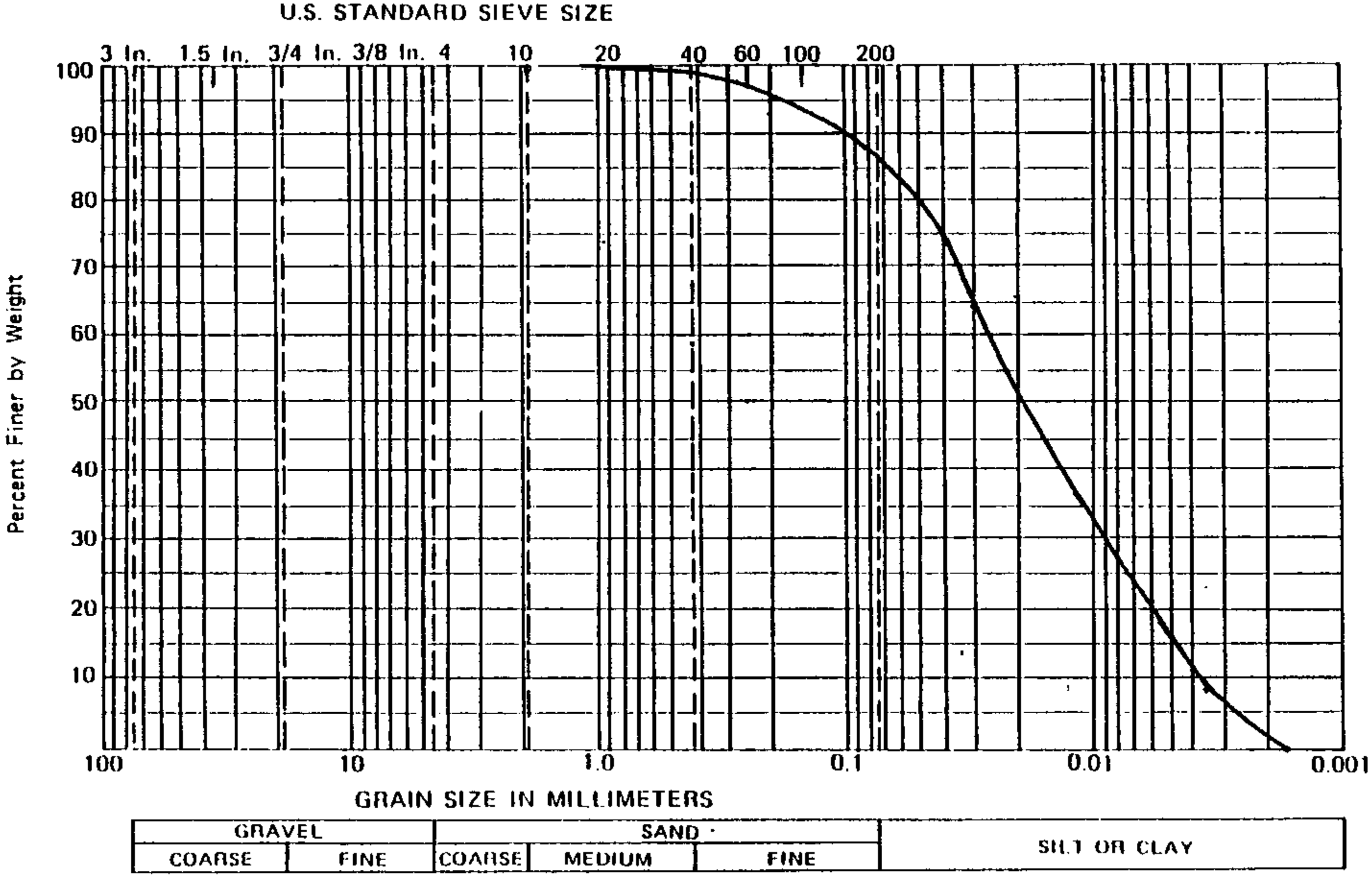
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-3 Sample No. 3

Depth 9.5-11.5 Elevation



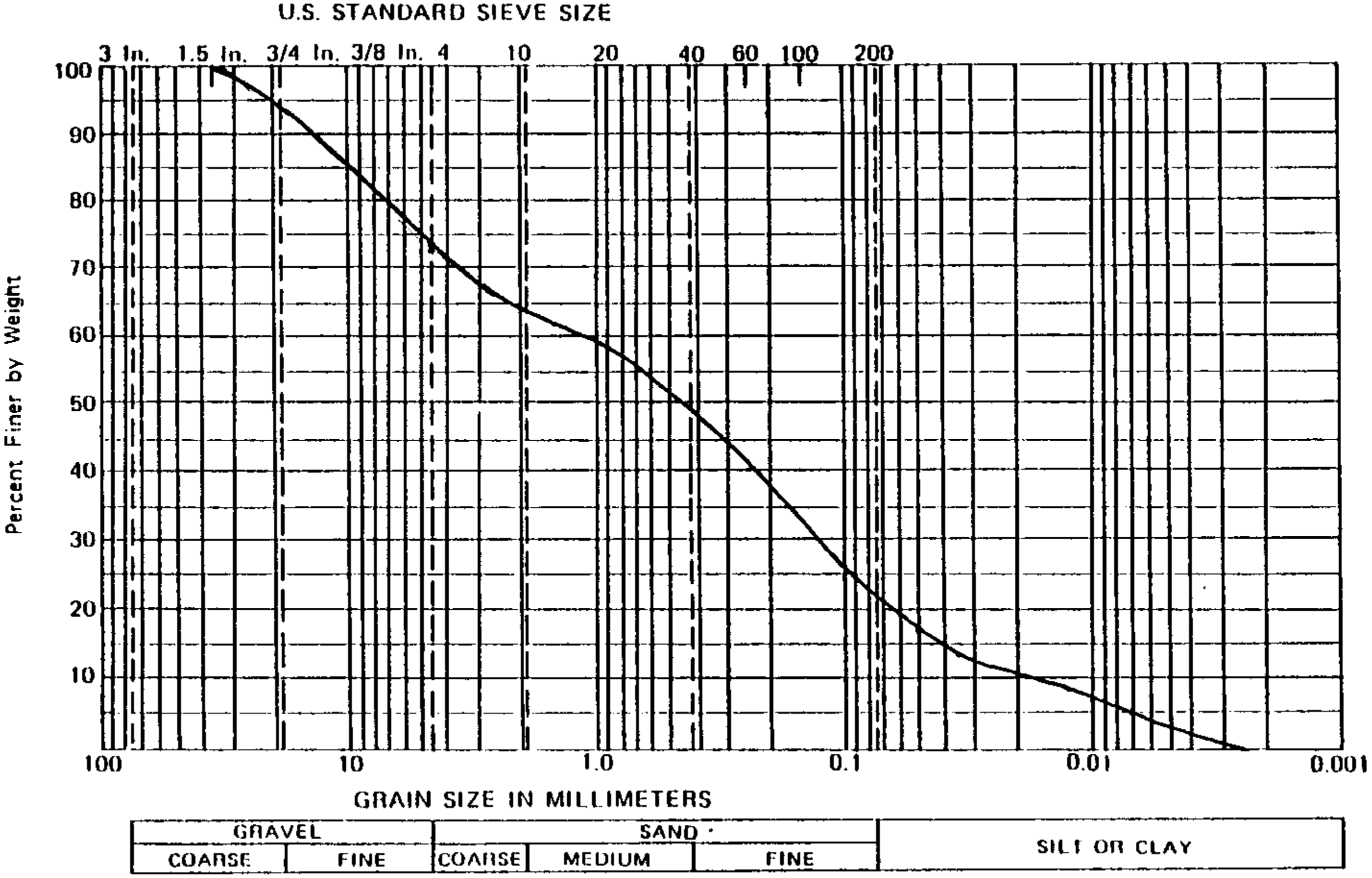
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-3 Sample No. 4

Depth 14.5-16.5 Elevation



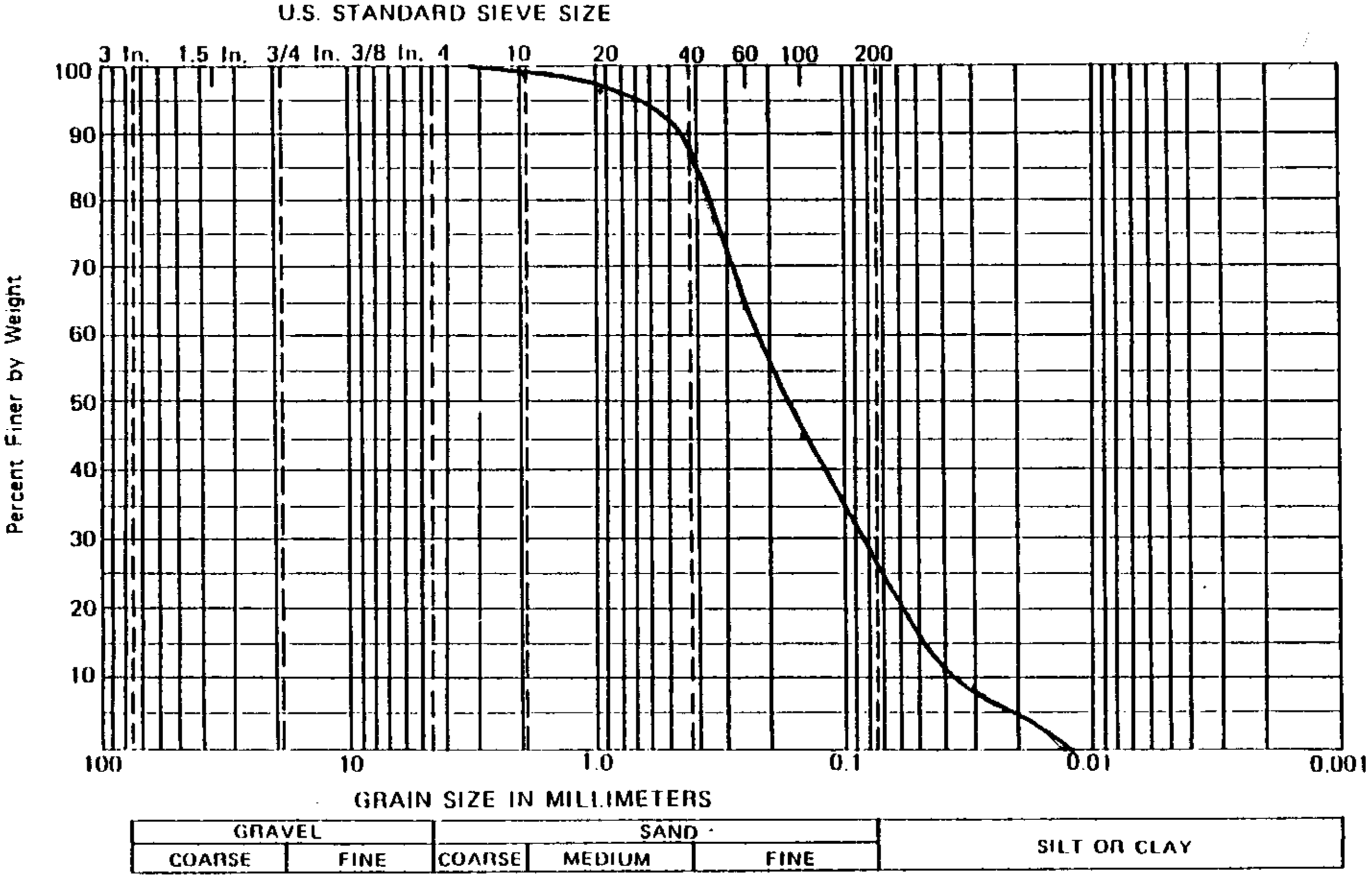
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC.

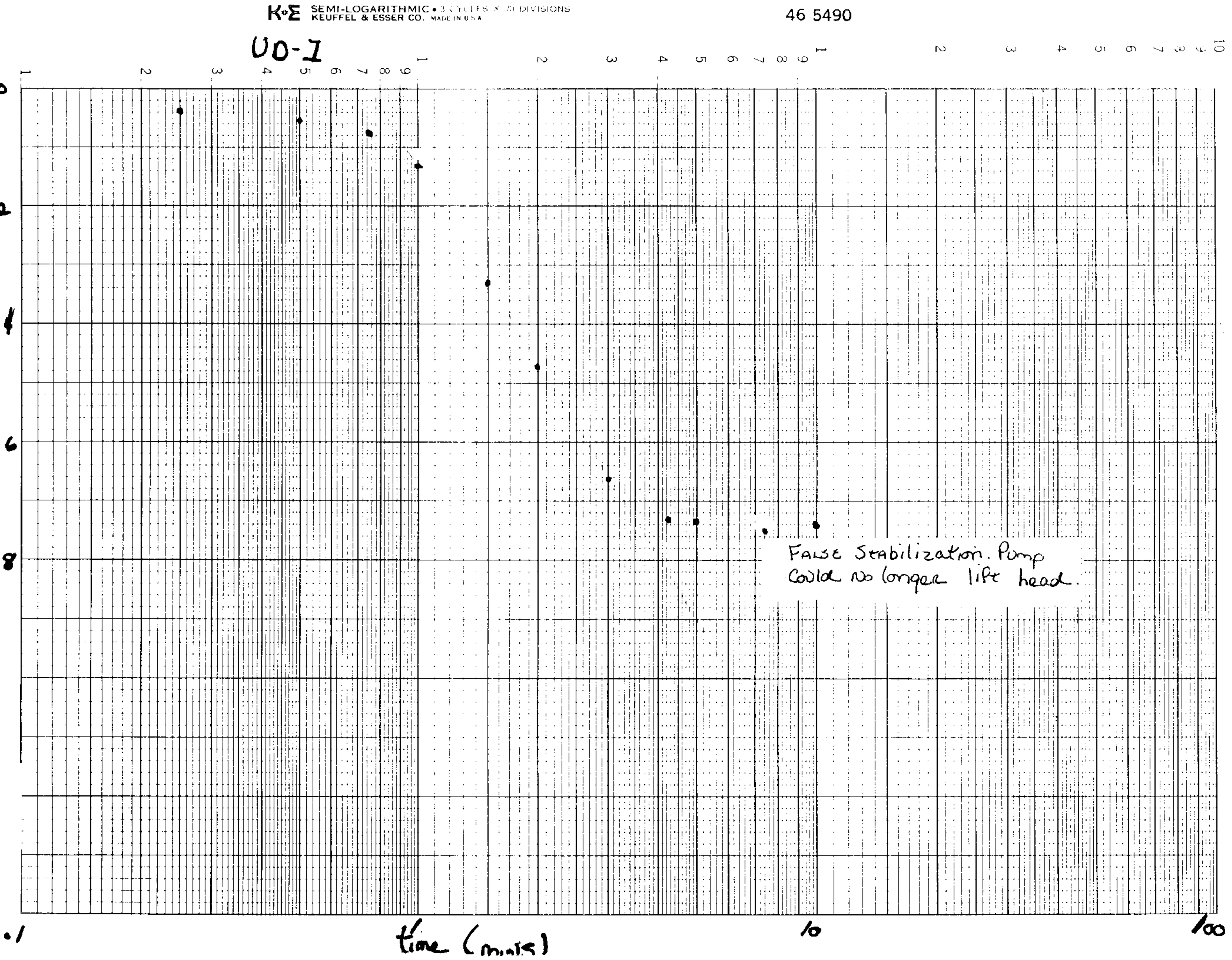
GRAIN SIZE DISTRIBUTION CURVE

Project Utica

Boring No. UD-3 Sample No. 5

Depth 19.5-21.5 Elevation




K+E SEMI-LOGARITHMIC • 3 CYCLES × 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
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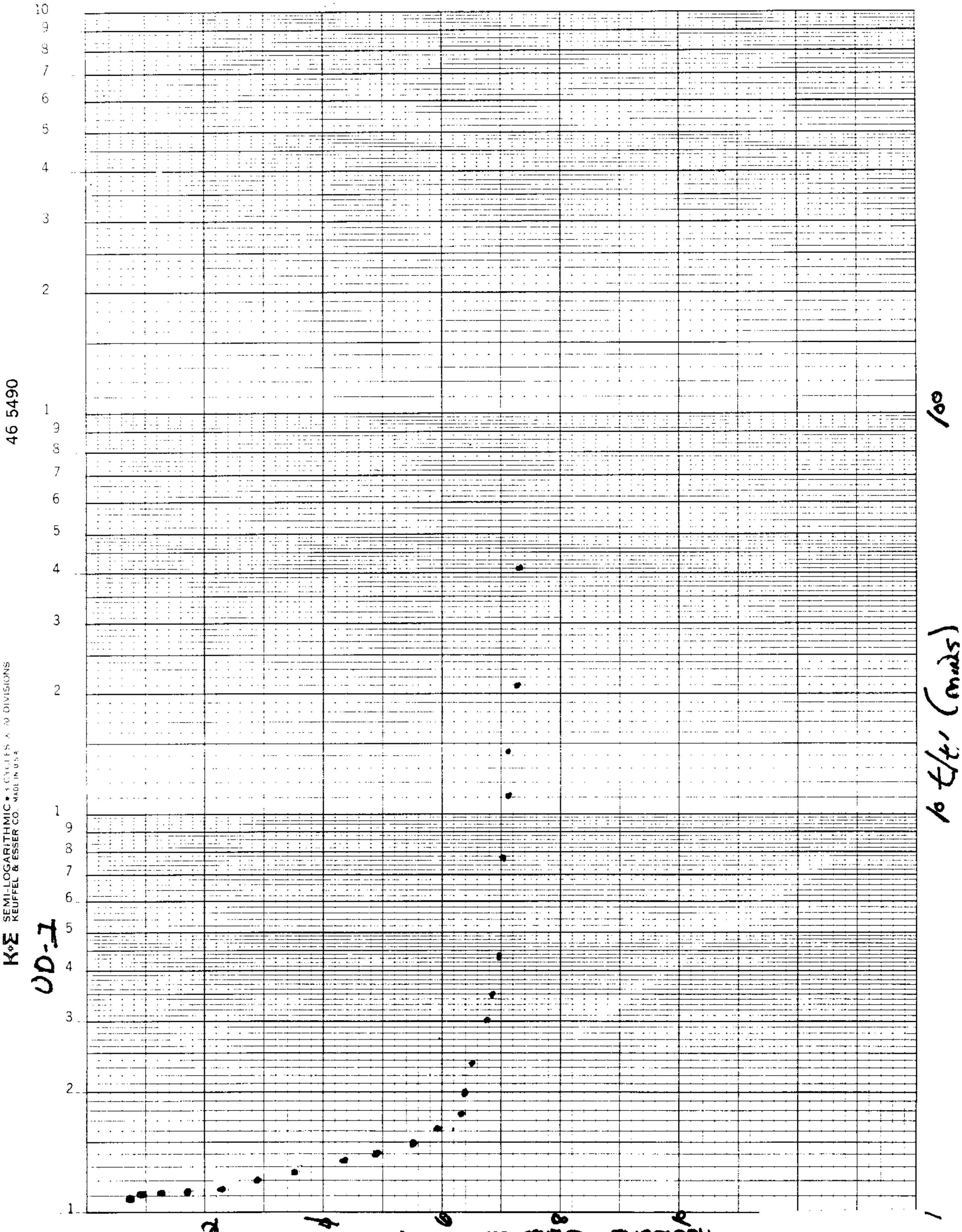
time (mins)
False Stabilization. Pump
Could no longer lift head.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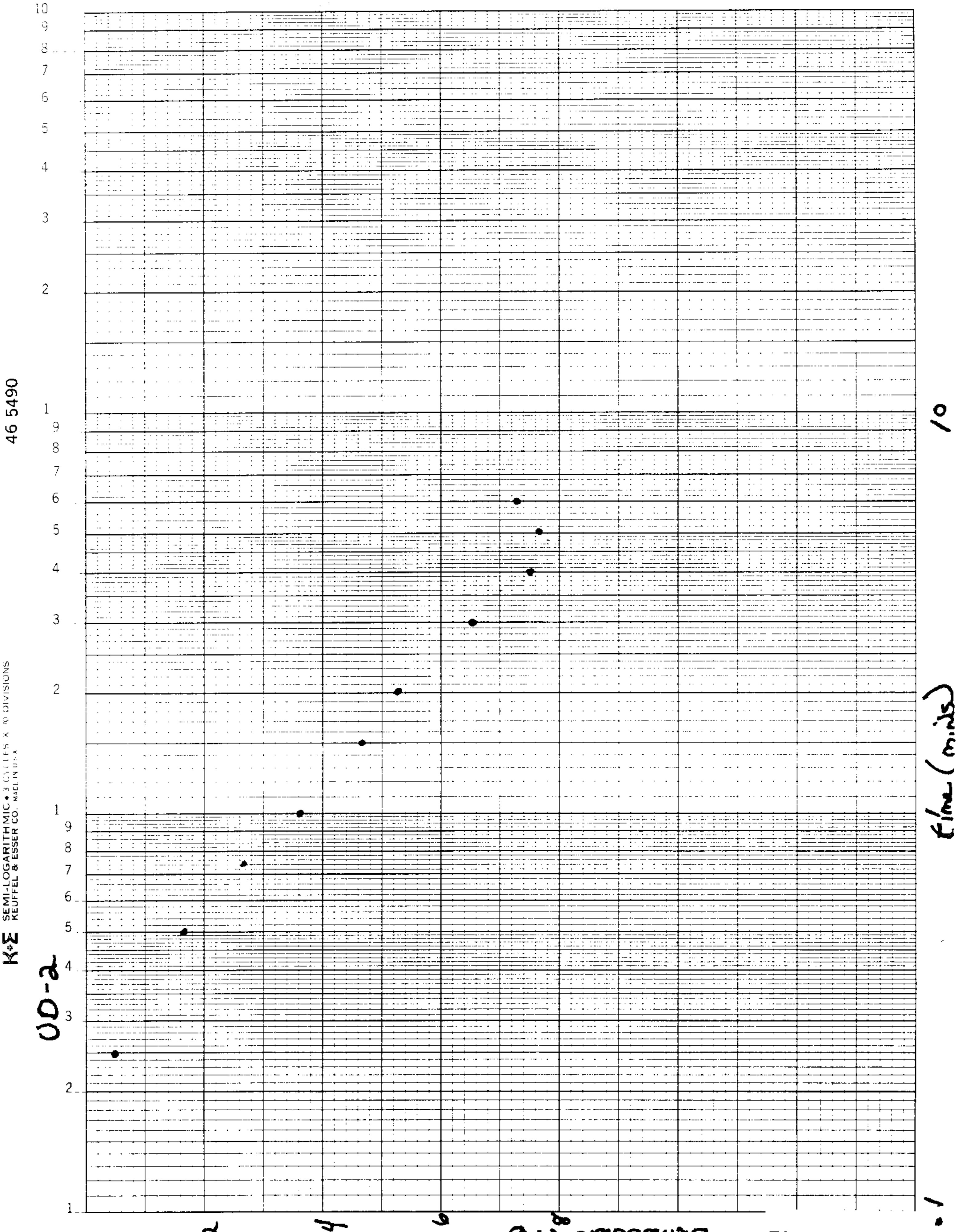
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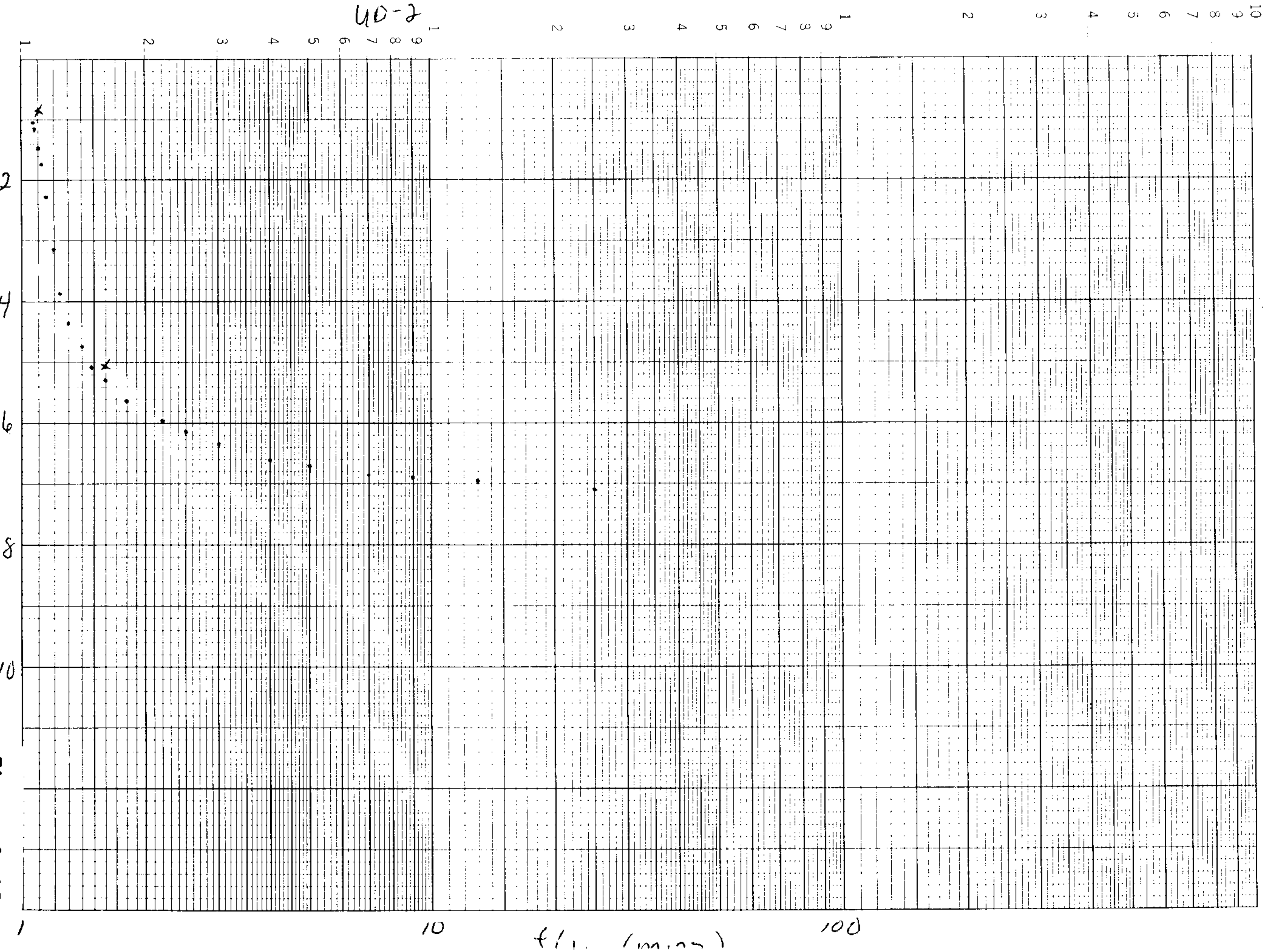
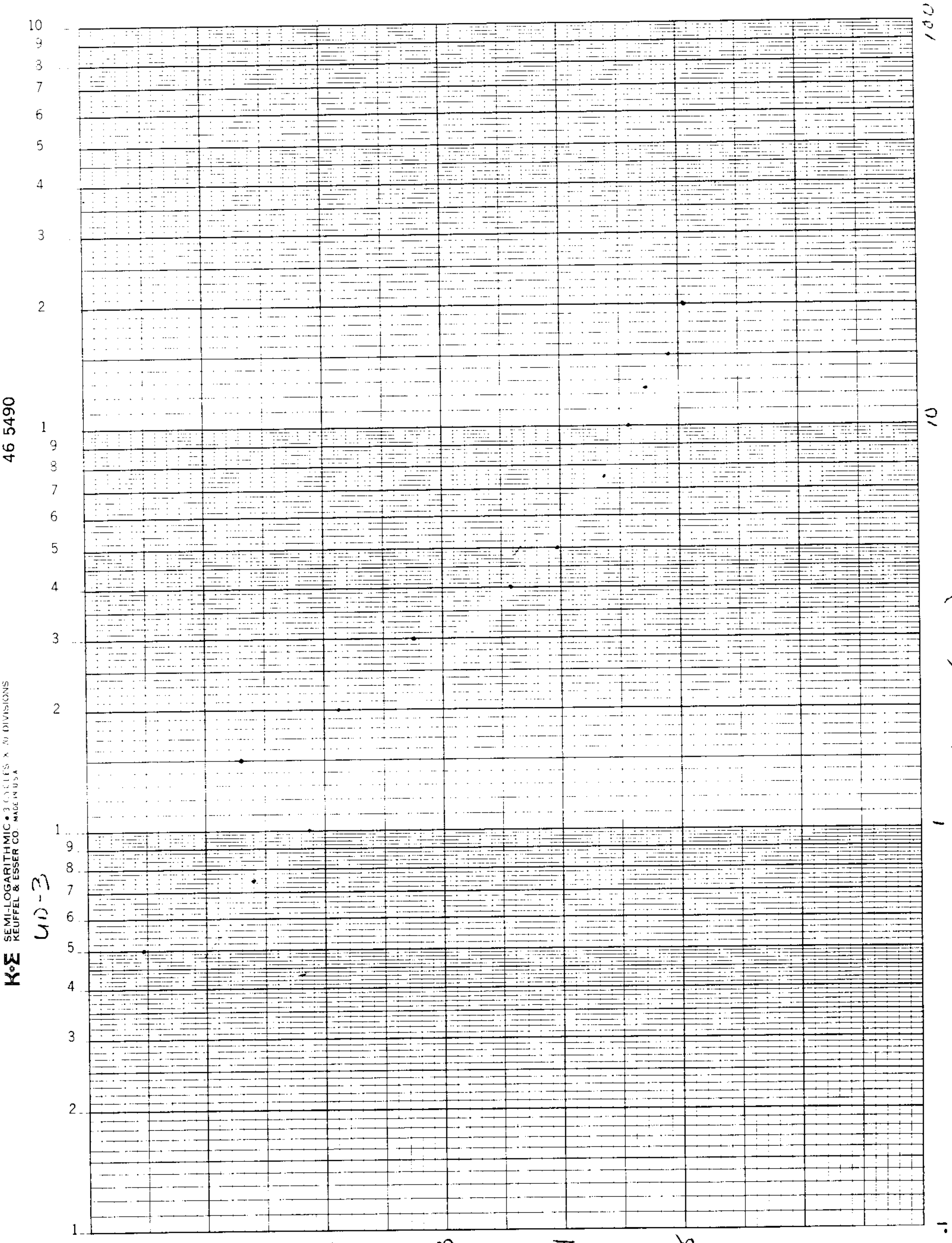
UD-2

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K+E SEMI-LOGARITHMIC • 3 CYCLES X 70 DIVISIONS
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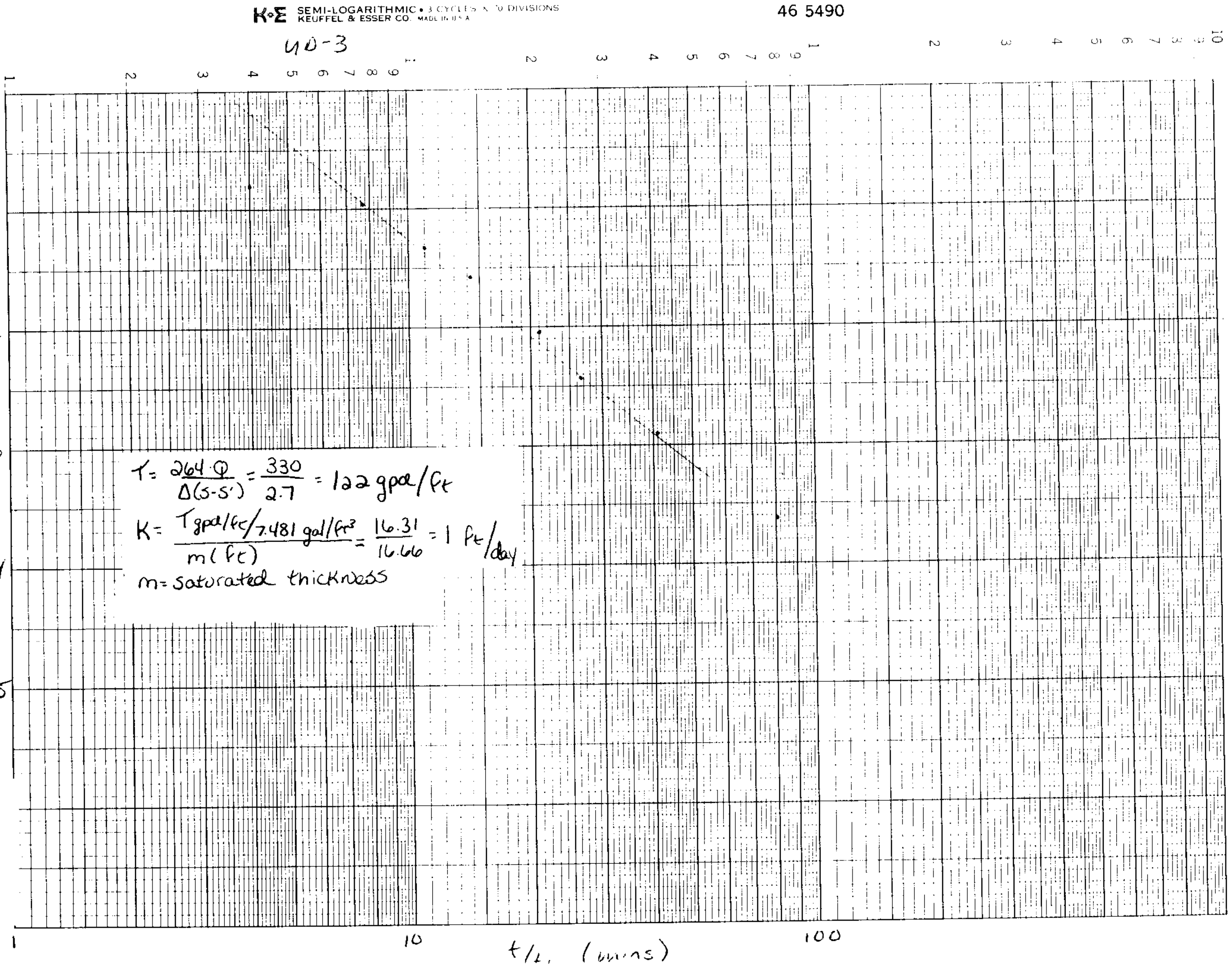
Figure 3-20



$T = \frac{264 \cdot Q}{\Delta(s-s')} = \frac{330}{2.7} = 122$ gpd/ft

$K = \frac{T \text{gpd/ft} / 7.481 \text{ gal/ft}^3}{m(\text{ft})} = \frac{16.31}{16.66} = 1$ ft/day

m = saturated thickness

Figure 3-21

FIELD RECORD OF WELL GAUGING, PURGING AND SAMPLING

Site: Utica Dump

Well No: UD-1A Gauge Date: 4-7-87 Time: 0805 hrs.

Weather: Rainy ~ 40°F

Well Condition: well locked, secure

Well Diameter (inches): 2" well in 7" bore hole

Odor (describe): None

Sounding Method: QED Measurement Reference: Top of PVC

Stick up/down (ft): 1.76

(1) Well Depth (ft): 35.75 Purge Date: 4-7-87 Time: ~~089~~ 0845

(2) Depth to Liquid (ft): — Purge Method: ~~Centrifugal~~ Submersible pump

(3) Depth to Water (ft): 13.35 Purge Rate (gpm): ~~2~~ 1.5 gpm

(4) Liquid Depth [(1)-(2)]: 22.40 Purge Time (min): 7 min.

(5) 1 bore hole Liquid Volume [(4)xF] (gal): 13.85 x 4 = 55.4 Purge Volume (gal): 10

Did Well Pump Dry? Describe: Yes, well pumped dry after 6 min. (9 gal) allow to recharge 15 min. pumped additional 1 gal.

Samplers: Tom Porter / Lori Rogers

Sampling Date: 4-8-87 Time: 1020

Sample Type: Grab Split? No. With Whom:

Comments and Observations: Teflon Bailers All bailers clean. Conductivity 500

Figure 3-22.

FIELD RECORD OF WELL GAUGING, PURGING AND SAMPLING

Site: Utica Dump

Well No: 40-3 Gauge Date: 4-7-87 Time: 1100 hrs.

Weather: Rainy ~40°

Well Condition: Locked, secure ~~[illegible]~~. Mohawk river flooded

surface water near base of steel casing.

Well Diameter (inches): 2" well in 7" borehole

Odor (describe): None

Sounding Method: QED Measurement Reference: Top of PVC

Stick up/down (ft): 2.30'

(1) Well Depth (ft): 20.0' Purge Date: 4-8-87 Time: 0905

(2) Depth to Liquid (ft): — Purge Method: Centrifugal pump.

(3) Depth to Water (ft): 2.30' Purge Rate (gpm): ~3.5 gpm

(4) Liquid Depth [(1)-(2)]: 17.70 Purge Time (min): 17 min.

1 borehole vol.

(5) Liquid Volume [(4)xF] (gal): 10.9 Purge Volume (gal): 59.5

Did Well Pump Dry? Describe: No, discharge was clear but

yellowish w/ some bubbling.

Samplers: Tom Porter / Lori Rogers

Sampling Date: 4-8-87 Time: 0940

Sample Type: Grab Split? No. With Whom:

Teflon Bailer

Comments and Observations: Cond. 3000 no HNu

reading above background.

Figure 3-23.

4. SITE ASSESSMENT - CITY OF UTICA

4.1 SITE HISTORY

The City of Utica Dump site is located at the end of Incinerator Road in the City of Utica, Oneida County, New York. The site encompasses an area of approximately 55 acres located between the Mohawk River and the Erie Barge Canal. The dump began operation under the City of Utica ownership around the 1930s. This site, which reportedly received municipal waste from the city, closed in 1972 (Appendixes 1.4.1-1 and 1.4.1-2).

During its early history, the site operated as an open dump. Later the City employed the trench and fill method using excavated material and demolition debris as cover. An onsite incinerator burned waste material from approximately 1930 to 1960. When the incinerator malfunctioned however, the overflow went directly into the dump (Appendix 1.4.1-3), (Site Inspection Interview). The City of Utica dump was closed in 1972. From 1972 to the present, the land west of the dump is used for deposition of hardfill material, generated by the City of Utica only (Appendix 1.4.1-2).

Little is known about the types and amounts of industrial wastes that were disposed at the City of Utica Dump site. Several Department of Public Works employees interviewed, described the waste generally as municipal with some industrial garbage. Not one could recall anything that might be considered hazardous (Appendixes 1.4.1-4 through 1.4.1-6). The U.S. EPA Field Investigative Team (FIT) that evaluated the site in 1983 listed several local industries that allegedly used the dump. Upon recent contact however, these companies denied any knowledge of having used the dump except for disposal of their non-industrial wastes (Appendixes 1.4.1-7 through 1.4.1-12). The FIT report gave the site a high priority ranking recommending further action. Recommendations included sampling of drums, leachate, soil, and ground water. Furthermore, the report recommended installing a fence or gate to prevent trespassing and illegal dumping (Appendix 1.4.1-7).

In 1984 an engineering study was performed at the Hardfill disposal site located approximately adjacent to the old dump on the western border. The study was performed in order to obtain a Part 360 Permit from the NYSDEC. Four test borings were drilled in June 1984, and eventually monitoring wells were
lled in the borings. Ground water was sampled in July 1984, August 1984,
in May 1986 for baseline water quality data. Several metals exceeded
tandards, and benzene (1-2 ppb) and chlorobenzene (3-4 ppb)
of the four monitoring wells (Appendix 1.4.1-12)

art covered and vegetated, except
area where there is a steep
ost portion of the
. The land to the west
e City of Utica. The gate
ere is a guard at the
on).

4.2 SITE TOPOGRAPHY

The City of Utica Dump is located at the remote eastern end of a low, swampy, wooded peninsula. The site is approximately 55 acres in size, and bordered by the Erie Canal to the north, and the Mohawk River to the south and east. The land adjacent and west of the site is currently being used by the City of Utica as a hardfill materials disposal area (Appendix 1.4.2-1 and EA Site Inspection).

The dump was built up (filled) from the flood plain of the Mohawk River approximately 15-30 ft above the flood plain but approximately level with the surrounding topography. The surface of the filled area is covered and irregular. There are small to medium trees, grass, and bushes growing on the site. The surface slopes in all directions ranging from 2 to 4 percent (Figure 1-2). During wet periods, standing water was observed in areas throughout the site. At the edges of the dump, the slopes are not covered; thus leaving trash, drums, and building material exposed (Photo Nos. 21, 22, and 25). The predominant site slope is toward the east and south at an average slope of 4 percent (EA Site Inspection).

Leachate seeps and pools are visible at several locations along the northern, eastern, and southern perimeter of the site (Figure 1-2; Photo Nos. 5 through 8, 16 through 19, 26, and 41 through 44). Many are rust colored and some have what appears to be an oily sheen on the surface. Small apparently oily seeps were observed on the bank of the Mohawk River in the southeast portion of the site (Photo Nos. 18 and 19). A dike (berm) appears to have been constructed along a portion of the eastern edge of the dump. At a break in the dike, a major rust-colored seep was observed during the spring to be flowing directly into the Mohawk River (Photo No. 16). Three small swamps are adjacent to the dump along to the southwestern border, one of which has a rust-colored overflow that drains into a swampy bay-like area that is directly connected to the Mohawk River in the southern portion of the site (Photo Nos. 27 and 28). Several drum clusters (designated A through G on Figure 1-2) as well as multiple scattered drums were observed throughout the site. Drum Cluster "A," located along the western edge of the dump site (Photo No. 29), is composed of nine drums of which two were labeled "steelmet" and several were observed to contain white powder (sampled during the Phase II investigation). Drum Cluster "B" is located approximately 150 ft southeast of Cluster "A," along the southwestern edge of the dump (Photo Nos. 30 and 31). There are twelve drums in Cluster B and upon close inspection, a strong tar-like and solvent odor was detected in a green drum (sampled during the Phase II investigation). Cluster "C," located on the southern portion of the dump is composed of 33 plastic-lined, empty drums (Photo Nos. 32 and 33). Cluster "D" is located near the southeastern toe of the landfill (Photo Nos. 14, 15, and 34). These partially filled and empty drums appear to have contained an asphalt-like material which is now cured/hardened. Approximately 300 ft north of Cluster D, along the eastern edge of the dump is Drum Cluster "E" (Photo Nos. 35 and 36). These drums appear to contain metal slag-like material which is dense and heavy. Drum Cluster "F" is located in the northeastern portion of the dump, and consists of various open, lined and unlined, empty, and trash filled drums (Photo No. 37) . Drum cluster "G" is located in the bermed area in the southeastern edge of the dump (Photo No. 38). This cluster consists of several open drums containing a dark liquid (EA Site Inspection, Figure 1-2).

The nearest commercial building is on Wurtz Avenue, approximately 0.9 mi west of the site. The nearest residences are located approximately 0.5 mi north and south of the site across the Canal and Mohawk River, respectively (Appendix 1.4.2-1). EA Science and Technology supervised the installation of three monitoring wells at the site. There is an upgradient well in the northwest corner, and two downgradient wells (one is on the bank of the Mohawk River, southeast of the site, and the other on the bank of an inlet of the Mohawk River east of the site) (Figure 3-1). The area immediately surrounding the site is served by public water obtained from the Hinckley Reservoir, which is located more than 3 mi from the site (Appendix 1.4.2-2).

4.3 SITE HYDROGEOLOGY

The site is located in the Mohawk River lowlands, which is the area within the Mohawk River Valley underlain by glaciofluvial, lacustrine and alluvial deposits. The sediments which comprise most of the valley fill were carried in by glacial melt water, and deposited into standing waterbodies. These were later overlain by a veneer of flood-plain deposits of the Mohawk River. The sediments are predominantly fine sand, silt, and clay, but are interstratified with beds and lenses of coarser sand and gravel. The unconsolidated deposits are underlain by the Ordovician Age Utica Shale (Appendixes 1.4.3-1, 1.4.3-2, and 1.4.3-3).

Based upon two soil borings reportedly drilled in 1967 approximately 200 ft west of the City of Utica Dump, bedrock was determined to be greater than 141 ft below ground surface (Appendix 1.4.3-3). Additionally, Boring Oe 170, located at or just west of the Utica Dump site, indicated that depth to bedrock is greater than 100 ft below ground surface and is overlain by silt and clay with interbedded layers of coarser sand and gravel (Appendix 1.4.3-1). The water table is nearly flat in the flood plain of the Mohawk River, and occurs only slightly higher than the adjacent river (Appendix 1.4.3-1, pg. C-2).

The test borings/monitoring wells installed during the Phase II investigation (Figure 3-1), indicate that the site is directly underlain by alluvial deposits of clay, silt, and fine sand, to depths of at least 30 ft. However, these deposits are occassionally inter-bedded with lenses or beds of coarser sand and gravel deposits, e.g., Boring/Well UD-3. Boring logs are provided in Figures 3-2 to 3-5.

Ground-water as measured in the three monitoring wells at the site ranges in depth from approximately ground surface to 12 ft below ground surface. However, the depth to water is directly dependent upon the water level in the Canal and Mohawk River (Photo Nos. 1, 2, 20, 39, and 40). The site is located on the flood plain of the Mohawk River and is bordered on the east and south by the river, and north by the Barge Canal. Under normal conditions (Mohawk River and Canal at normal stages) ground-water flow is southeast across the site towards the Mohawk River. However, on 7 April 1987 when the Mohawk River was at flood stage and the Canal locks were open, the ground-water flow was apparently (only two monitoring well locations were accessible, UD-1A/UD-1 and UD-3) towards the northeast at a slight gradient (Table 3-1 and Figure 4-1).

The geophysical surveys performed during the Phase II investigation indicate several "moderate" and "high" anomalous zones. The two large "high" anomalous zones located in the east and southeast portions of the site are areas of highest measured subsurface conductivity. Therefore, the two downgradiant wells were installed within these areas. The geophysical report is provided in Appendix 1.3.2-1.

Due to the wells screening the fine sediments underlying the site the short-term, low-yield pump test results (Table 4-1) reflect the hydraulic properties of the well casing and not the formation; the exception being Well UD-3, which screens the upper 2.5 ft of a coarser sand and gravel lens. Calculations of Transmissivity (T) and Permeability (K) are based on Jacobs modification of the Theis equation (Appendix 1.4.3-4).

The City of Utica public water is supplied by surface water from the Hinckley Reservoir which is located north of the city. No community wells are reportedly within the 3-mile radius of the site. The aquifer of concern, based on HRS, is the unconsolidated deposits underlying the site because they can yield small to moderate amounts of water from the coarse sand and gravel lenses. The deposits are not used but are potentially useable. However, a confirmed release to the ground water would also indicate a release to surface water (Mohawk River) because of the proximity of the river, the direction of ground-water flow, and the existance of multiple seeps on the bank of the Mohawk River east and southeast of the site.

4.4 SITE CONTAMINATION

Waste Types and Quantities

No hazardous or toxic wastes were reported to have been disposed of at the site, however, the potential exists. Industries within the City of Utica disposed of wastes at the site during its operation (Appendixes 1.4.1-3, 1.4.1-4 and 1.4.1-7). Dumping at the site was not well controlled during its operations (Appendixes 1.4.1-4 through 1.4.1-6). After the site was closed, the entrance gate was left unlocked and unguarded for years, allowing easy access to the site. It has been reported that illegal dumping did occur (1.4.1-7).

Several areas of drum clusters, as well as multiple scattered drums, are present throughout the site (Refer to Section 4.2 and Photo Nos. 29 through 38). Some of the drums contain unknown substances, both solid and liquid. Leachate has been observed flowing into the Mohawk River.

Leachate samples were collected on March 1981 by the NYSDEC from two locations at the site (LF 1 from the swampy area in the northeast and LF 2 from a seep in the southeast portions of the site.) Sediment and aqueous samples were collected at each location. Results for the aqueous samples detected concentrations above the detection limits for the following: phenols (5 µg/L), aldrin (0.02 µg/L), I-BHC (0.16 µg/L), S-BHC (0.02 µg/L), V-BHC (0.02 and 0.09 µg/L), and heptochlor (0.02 and 0.05 µg/L), as well as low levels of some metals (Appendix 1.4.4-1). In the leachate sediment samples, concentrations of the following were detected: chlorobenzene (55 ng/g), methylene chloride

(81 ng/g), heptachlor (.13 and .04 ng/g), total cyanide (2.3 and 1.6 mg/kg), and total recoverable phenols (0.09 and 3.0 mg/kg). Concentrations of heavy metals were also detected (Appendix 1.4.4-1).

On 7 and 8 April 1987, a seep sample (both aqueous and sediment) was collected by EA during the Phase II sampling program. At that time, the seep was observed by EA field personnel to be flowing directly into the Mohawk River (Photo Nos. 41 through 44). Analytical results of the aqueous sample contained volatile organics (methylene chloride and acetone) in concentrations below the contract required detection limit (CRDL) (Table 4-2). However, both of these volatile organics were also detected in the trip blank. Acetone was also detected in the method blank. The following metals were detected at elevated levels in the aqueous seep sample: iron (14.0 mg/L), manganese (.32 mg/L), and total phenols (0.08 mg/L) (Table 4-2). The following volatile organics were detected above CRDL in the seep sediment sample: methylene chloride (120 μg/kg), acetone (84 μg/kg), and chlorobenzene (14 μg/kg) (Table 4-3). Acetone was also detected in the method blank; however, at concentrations more than 20 times lower than the concentrations in the seep sediment sample. The following metals were detected at elevated levels: aluminum (6,000 mg/kg), barium (230 mg/kg), iron (70,000 mg/kg), lead (54 mg/kg), manganese (116 mg/kg), nickel (21 mg/kg), and zinc (265 mg/kg). Also detected above CRDL were total cyanide (2.13 mg/kg), total phenol (4.2 mg/kg), and one PCB (Arochlor 1254 at 577 μg/kg). Several base neutral acid extractables were detected at concentrations below the CRDL (Table 4-2).

The contents of two drums were also collected on 7 and 8 April 1987, and designated as UD-D1 (Drum Cluster A on Figure 3-1; Photo No. 29) and UD-D2 (Drum Cluster B on Photo Nos. 30 and 31). Methylene chloride and acetone were detected above CRDL in both samples (Table 4-3). Acetone was also detected in the method blank, but the concentrations were more than 80 to 500 times lower than the concentrations detected in the drum samples. The following metals were detected in one or both drum samples above CRDL: aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, zinc, and tin. Total cyanide and total phenol were detected above CRDL in UD-D2. The following base neutral/acid extractables were detected above CRDL in UD-D2: napthalene, 2-methylphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(A)anthracene, crysene, benzo(B)fluoronthene, benzo(K)fluoranthene, benzo(A)pyrene, indeno(1,2,3-CD)pyrene, and benzo(ghi)perylene. EP Tox performed on the drum samples found no elevated levels of metals or pesticides. For U.S. EPA bulk drum hazardous waste characteristics (reactivity, corrosivity, and ignitability), only UD-D1 had corrosivity (>12 pH) outside the threshold limits (Table 4-3).

Ground Water

On 7 and 8 April 1987 during the Phase II sampling program, EA collected two ground-water samples (one from UD-1A and one from downgradient UD-3) (Photo 40). Upon arrival at the site, monitoring well UD-2 was determined inaccessible due to flooding of the Mohawk River, and could not be sampled (Photo No 39). Analysis of the ground-water samples indicated that aluminum (0.5 mg/L), arsenic (.01 mg/L), barium (.968 mg/L), iron (54.0 mg/L), magnesium (89 mg/L), potassium (94.1 mg/L), and sodium (260 mg/L), were detected in significantly increased concentrations in the UD-3 sample. However, no upgradient ground-water quality could be established due to the unanticipated reversal of ground-water flow direction. As a result, a release from the site to ground water as defined by the U.S. EPA Hazard Ranking System (3 times increase above the detection limit if concentrations are below detection limits upgradient, or a 5 times increase for several parameters if detected upgradient) cannot be confirmed.

Surface Water

Although no surface water data was available for the site, a nearby study on the Utica Hardfill Disposal Area, located adjacent to Incinerator Road to the west of the Utica Dump site, provides the sampling results from the NYSDEC 303e "Water Quality Management Plan for Mohawk River Planning Areas 12-01 and 12-03." The values that are presented are a calculated mean from the period 1 October 1970 through 30 September 1973. Several of the parameters are higher in downgradient samples (Schuyler Mile 100.7) than in upgradient samples (Whitestown Mile 110.8 and Utica Mile 105.2) (Appendixes 1.4.1-2 and 1.4.4-2). However, these increased concentrations cannot be attributed to the site because the Schuyler Mile 100.7 samples were collected approximately 2 mi downgradient of the site. The increased concentrations could be from one or a number of sources in the 2-mi stretch.

Due to flooding of the Mohawk River during the Phase II sampling program (Photo 39) on 7 and 8 April 1987, surface water samples could not be collected. However, at that time, a seep was observed and documented by EA field personnel to be flowing into the Mohawk River (Photo Nos. 41 through 44). As discussed in Section 4.4.1, Waste Types and Quantities, analysis of the seep sample and/or the seep sediment sample indicated concentrations of 21 metals, 3 volatile organics, total cyanide, total phenol, and Arochlor 1254 (PCB) above the contract required detection limit. Based on HRS, this indicates an observed release to surface water.

TABLE 4-1 CITY OF UTICA DUMP: SUMMARY OF ESTIMATED AQUIFER CHARACTERISTICS

		Drawdown Phase		Residual Drawdown Phase	
Well No.	Pump Rate GPM	Transmissibility$^{(T)}$ gpd/ft	Permeability$^{(K)}$ ft/day	Transmissibility$^{(T)}$ gpd/ft	Permeability$^{(K)}$ ft/day
UD-1	0.30	*	*	**	**
UD-2	1.00	Well pumped dry in 5 minutes*	*	**	**
UD-3	1.25	***	***	122	1

---

* Recovery too slow.

** Data obtained appears to be directly related to evacuation of the water in the well casing.

*** Data obtained too erratic to calculate T and K.

NOTE: Calculations of Transmissivity (T) and Permeability (K) are based on Jacobs modification of the Theis equation (Appendix 1.4.3-4).

TABLE 4-2 SUMMARY OF ANALYTICAL DATA FOR GROUND-WATER AND SEEP SAMPLE COLLECTION ON 7 AND 8 APRIL 1987

Parameters	Ground-Water		Seep	Quality Standards	Trip Blank	Method Blank
	UD-1A	UD-3	UD-SP1	Class GA		
VOLATILES (µg/L)						
Methylene chloride	BCRDL	BCRDL	BCRDL		7	
Acetone	BCRDL*	BCRDL*	BCRDL*		BCRDL*	BCRDL
SEMI-VOLATILE (µg/L)						
Bis(2-ethyl hexyl)phthalate	BCRDL				BCRDL	
METALS (mg/L)						
Aluminum		.500			BCRDL	
Arsenic		.010	BCRDL	0.025		
Barium	BCRDL	.968	.363	1.0		
Cadmium	.005		.006	0.01		
Calcium	98.10	160.70	139.90			
Chromium			.010	0.05		
Cobalt		BCRDL				
Copper			BCRDL	1.0		
Iron	10.70	54.00	14.00	0.30	BCRDL	
Lead			.007	0.025		
Magnesium	13.40	89.00	130.10			
Manganese	.790	2.30	.320	0.30	.020	
Nickel	.060	.050	BCRDL		.020	
Potassium	1.40	94.10	76.20			
Sodium	18.0	260.0	150.0			
Vanadium		BCRDL	BCRDL		BCRDL	
Zinc	.040	.070	.200	5.0	BCRDL	
Total Cyanide		0.02	0.02			
Total Phenol	0.09	0.08	0.08			
pH	6.1	6.3	6.0		5.0	

The analytical program included the full HSL, however, this summary table includes only those parameters detected in at least one sample. Refer to Appendix 3 (bound separately) of this report for the full CLP analytical data package.

NOTE: BCRDL = Detected below contract required detection limit.
* = Parameter was detected in method blank.

TABLE 4-3 SUMMARY OF ANALYTICAL DATA FOR SEEP SEDIMENT AND DRUM SAMPLES COLLECTED ON 7 AND 8 APRIL 1987

Parameters	Seep Sediment	Drum Sample		Method	EPTOX	
	UD-SPSD1	UD-D1	UD-D2	Blank	UD-D1	UD-D2
VOLATILES (μg/kg)						
Methylene chloride	120	3,700	2,900			
Acetone	84*	1,600*	250*	BCRDL		
2-Butanone	BCRDL*	BCRDL*		BCRDL		
Chlorobenzene	14					
Toleune			BCRDL			
Ethylbenzene			310			
M-xylene			800			
O/P-xylene			680			
SEMI VOLATILES (μg/kg)						
2-Methylphenol			BDL			
4-Methylphenol			BDL			
2,4-Dimethylphenol			BDL			
Naphthalene			25,000			
2-Methylnaphthalene			11,000			
Acenaphthylene			BDL			
Acenaphthene			8,000			
DiBenzofuran			9,100			
Fluorene			13,000			
Phenanthrene	BCRDL		43,000			
Anthracene			10,000			
Fluoranthene	BCRDL		33,000			
Benzo(A)anthracene	BCRDL		9,500	BCRDL		
Pyrene	BCRDL		17,000			
Anthracene	BCRDL		9,500			
Chrysene	BCRDL		8,200			
Benzo(B)fluoranthene			7,600			
Benzo(K)fluoranthene			7,200			
Benzo(A)pyrene			8,600			
Indeno(1,2,3-CD)pyrene			3,500			
Benzo(GHI)perylene			3,700			
Di-N-Butyl Phthalate	BCRDL	BCRDL		BCRDL		
Bis(2-ethyl hexyl)phthalate	BCRDL			BCRDL		

This analytical program included the full HSL, however, this summary table includes only those parameters detected in at least one sample. Refer to Appendix 3 (bound separately) of this report for the full CLP analytical data package.

NOTE: BCRDL = Detected below contract required detection limit; BDL = Detected below detection limit affected by dilution due to high concentration of some parameters;
* = Parameter was detected in method blank.

TABLE 4-3 (Cont.)

Parameters	Seep Sediment	Drum Sample		Method	EPTOX	
	UD-SPSD1	UD-D1	UD-D2	Blank	UD-D1	UD-D2
PESTICIDES/PCBS (μg/kg))						
Aroclor 1254	577.0					
METALS (mg/kg)						
Aluminum	6,000	2,400				
Arsenic	BCRDL	2	1		.326	.488
Barium	203	BCRDL	4.44			
Beryllium	0.433					
Cadmium	4.22		40.6		.006	
Calcium	5,300	362,000	BCRDL			
Chromium	15	2.4	280		.020	
Cobalt	5.91	BCRDL	23.4			
Copper	36	2.4	660			
Iron	70,000	2,800	740,000			
Lead	54	30	30		BCRDL	
Magnesium	3,300	3,620	699			
Manganese	116	28	1,760			
Mercury	0.16	0.06	0.09			
Nickel	21	3.1	170			
Potassium	1,060	64				
Selenium	0.26					
Silver	0.636	BCRDL	BCRDL			
Sodium	340	BCRDL	BCRDL			
Thallium	BCRDL		BCRDL			
Vanadium	.14	BCRDL				
Zinc	265	29.4	57.8			
Tin	4.0	0.7	10			
Total Cyanide	2.13		.65			
Total Phenol	4.2		120			
BULK CHARACTERISTICS						
Ignitability (C)		>60	>60			
Corrosivity (pH)		>12	8.2			
Reactivity		Not Reactive	Not Reactive			

CITY OF UTICA DUMP

Note: Base map modified from
23 June 1984 aerial
photograph (enlarged).

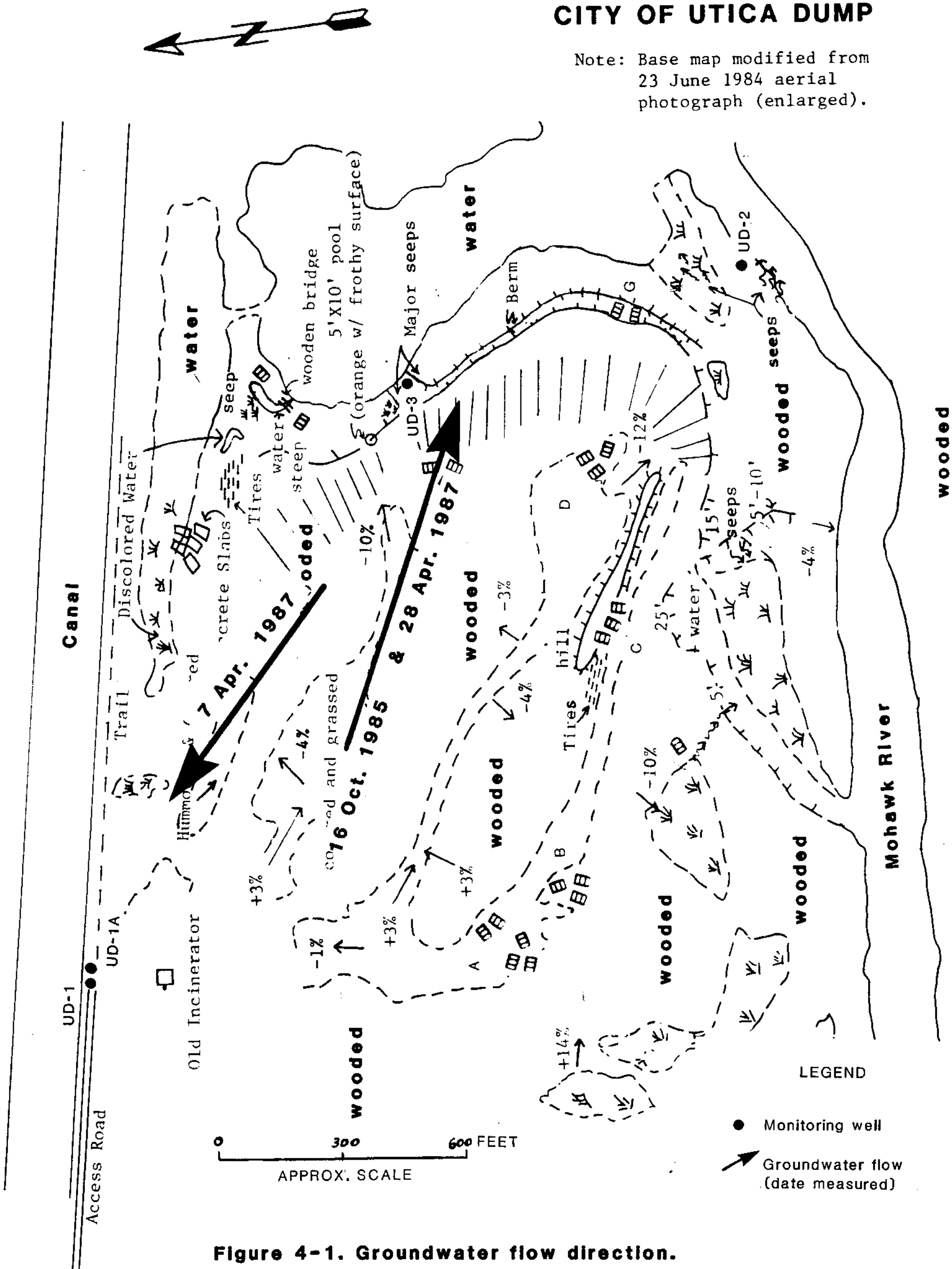


Figure 4-1. Groundwater flow direction.

5. NARRATIVE SUMMARY

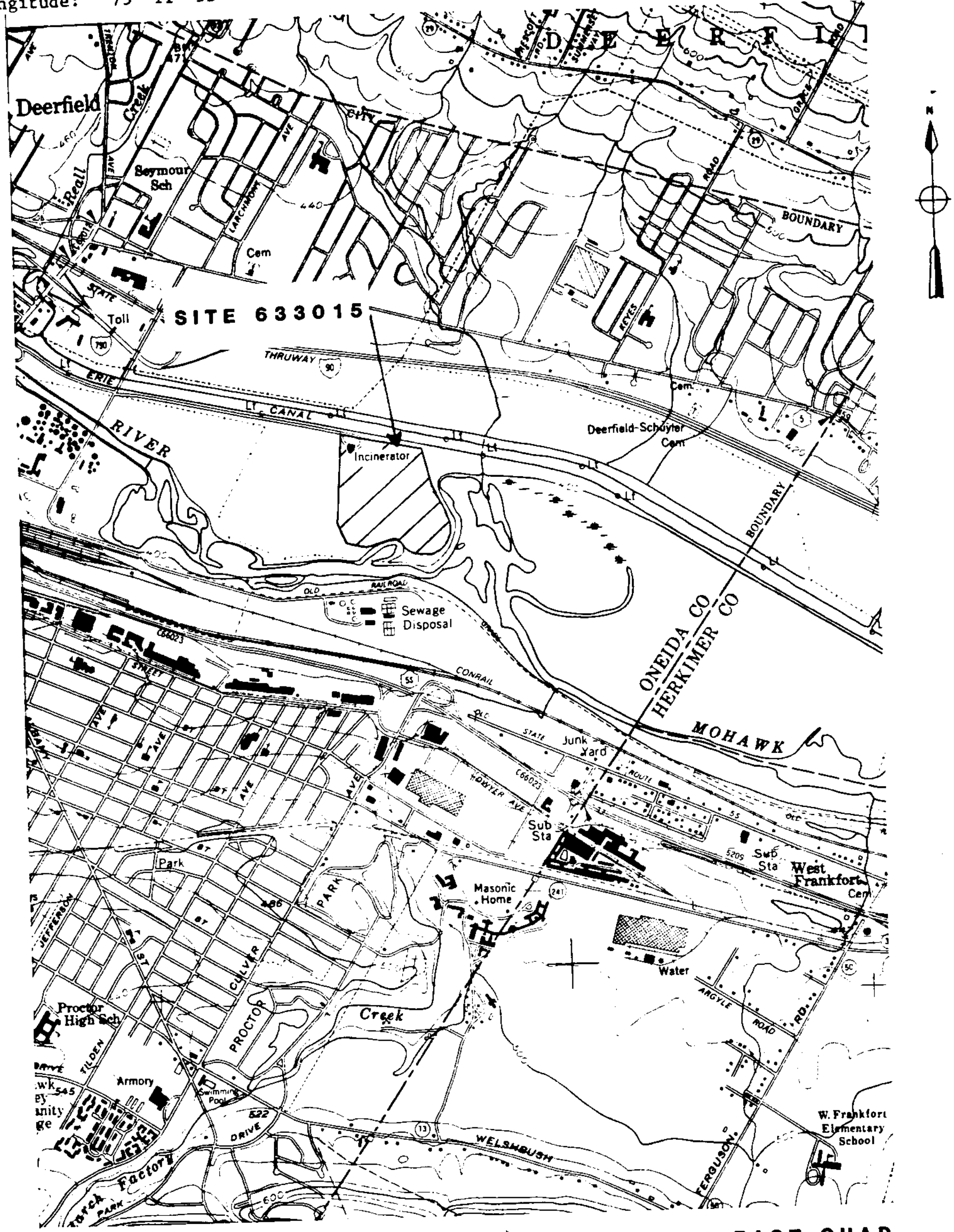
The City of Utica Dump site is a 55-acre inactive dump on property owned by the City of Utica. The site is bordered by the Barge Canal to the north and the Mohawk River to the south and east. The site was operated as a dump by the City of Utica to dispose of municipal waste, which included wastes from local industries, from the early 1930s until 1972. An onsite incinerator was used from the early 1930s to approximately 1960.

Unauthorized access to the site has been reported to have occurred in the past. Currently, a locked gate is located at the entrance to the site and a guard is present during working hours. A number of leachate seeps and pools are visible at several locations along the perimeter of the site. Several drum clusters, as well as numerous scattered drums, in different stages of deterioration, are located throughout the site.

Analysis of samples collected during the Phase II investigation of the site detected several inorganic parameters and organic compounds in drum contents and seep sediment samples, as well as heavy metals in ground water and seep samples. There are no drinking water supplies using ground water or surface water within a 3-mi radius of the site. Residential areas are located approximately 0.5 mi north and south of the site.

Site Coordinates:
Latitude: 43° 06' 18"
Longitude: 75° 11' 55"

CITY OF UTICA DUMP



SCALE 1"=2000'

UTICA EAST QUAD

Facility name: City of Utica Dump

Location: City of Utica, Oneida County, New York

EPA Region: II

Person(s) in charge of the facility: City of Utica
1 Kennedy Plaza, City Hall
Utica, New York 13502

Name of Reviewer: Thomas Porter

Date: 11/20/87

General description of the facility:
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The site is a 55-acre inactive dump located in the City of Utica and bordered by the Barge Canal to the north, the Mohawk River to the south and east, and a hardfill landfill to the west. Several priority pollutants were detected in drums at the site. Release of several metals were documented to both surface water and ground water, however neither is used as a drinking water source within a 3-mi radius of the site.

Scores: $S_M = 7.96$ ($S_{gw} = 3.58$ $S_{sw} = 13.29$ $S_a = 0$)

$S_{FE} =$ N/A

$S_{DC} =$ 50.00

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max Score	Ref (Section)
$\boxed{1}$ Observed Release	[✓ 0] 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line $\boxed{4}$ If observed release is given a score of 0, proceed to line $\boxed{2}$					
$\boxed{2}$ Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 [✓ 3]	2	6	6	
Net Precipitation	0 1 [✓ 2] 3	1	2	3	
Permeability of the Unsaturated Zone	0 [✓ 1] 2 3	1	1	3	
Physical State	0 1 2 [✓ 3]	1	3	3	
Total Route Characteristics Score			12	15	
$\boxed{3}$ Containment	0 1 2 [✓ 3]	1	3	3	3.3
$\boxed{4}$ Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 [✓ 18]	1	18	18	
Hazardous Waste Quantity	0 [✓ 1] 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
$\boxed{5}$ Targets					3.5
Ground Water Use	0 [✓ 1] 2 3	3	3	9	
Distance to Nearest Well/Population Served	[✓ 0] 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	49	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$			2,052	57,330	
$\boxed{7}$ Divide line $\boxed{6}$ by 57,330 and multiply by 100		S_{gw} =	3.58		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max Score	Ref. (Section)
1 Observed Release	0 [✓ 45]	1	45	45	4.1
If observed release is given a value of 45, proceed to line 4 If observed release is given a value of 0, proceed to line 2					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score		N/A	15	
3 Containment	0 1 2 3	1	N/A	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 [✓ 18]	1	18	18	
Hazardous Waste Quantity	0 [✓ 1] 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	26	
5 Targets					4.5
Surface Water Use	0 1 [✓ 2] 3	3	6	9	
Distance to a Sensitive Environment	0 1 [✓ 2] 3	2	4	6	
Population Served/Distance to Water Intake Downstream	[✓ 0] 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		10	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			8,550	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	13.29		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max Score	Ref (Section)
$\boxed{1}$ Observed Release	[✓ 0] 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line $\boxed{1}$ is 0, the S_a = 0. Enter on line $\boxed{5}$. If line $\boxed{1}$ is 45, then proceed to line $\boxed{2}$.					
$\boxed{2}$ Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
$\boxed{3}$ Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
$\boxed{4}$ Multiply $\boxed{1}$ x $\boxed{2}$ x $\boxed{3}$				35.100	
$\boxed{5}$ Divide line $\boxed{4}$ by 35.100 and multiply by 100	S_a = 0				

FIGURE 9
AIR ROUTE WORK SHEET

	s	s^2
Groundwater Route Score (S_{gw})	3.58	12.81
Surface Water Route Score (S_{sw})	13.29	176.62
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$	▨	189.44
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$	▨	13.76
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}\,/1.73 = S_M =$	▨	7.96

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max Score	Ref. (Section)
$\boxed{1}$ Containment	1 3	1		3	7.1
$\boxed{2}$ Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
$\boxed{3}$ Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
	Total Targets Score			24	
$\boxed{4}$ Multiply $\boxed{1}$ x $\boxed{2}$ x $\boxed{3}$				1,440	

$\boxed{5}$ Divide line $\boxed{4}$ by 1,440 and multiply by 100 S_{FE} = N/A

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max Score	Ref. (Section)
$\boxed{1}$ Observed Incident	[✓ 0] 45	1	0	45	8.1
If line $\boxed{1}$ is 45, proceed to line $\boxed{4}$ If line $\boxed{1}$ is 0, proceed to line $\boxed{2}$					
$\boxed{2}$ Accessibility	0 1 2 [✓ 3]	1	3	3	8.2
$\boxed{3}$ Containment	0 [✓ 15]	1	15	15	8.3
$\boxed{4}$ Waste Characteristics Toxicity	0 1 2 [✓ 3]	5	15	15	8.4
$\boxed{5}$ Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 [✓ 4] 5	4	16	20	
Distance to a Critical Habitat	[✓ 0] 1 2 3	4	0	12	
Total Targets Score			16	32	
$\boxed{6}$ If line $\boxed{1}$ is 45 multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$			10,800	21,600	
$\boxed{7}$ Divide line $\boxed{6}$ by 21,600 and multiply by 100	S_{DC} = 50.00				

FIGURE 12
DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible, summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: City of Utica Dump

LOCATION: Incinerator Road, Utica

DATE SCORED: 21 September 1987

PERSON SCORING: EA Science and Technology

PRIMARY SOURCES(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.)

EA Science and Technology, Phase II Field Activities
NYSDEC Files

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

Air

COMMENTS OR QUALIFICATIONS:

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None. No upgradient well sampled.

Reference: Section 4.3.

Rationale for attributing the contaminants to the facility:

Assigned value = 0.

Reference: 1.

***

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Unconsolidated deposits underlying site.

References: 10 and 11.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone (water table[s]) of the aquifer of concern:

0 ft. During flood conditions observed 7 April 1987, the water level in Well UD-3 was recorded at ground surface.

Reference: 11.

Depth from the ground surface to the lowest point of waste disposal/storage:

Hazardous substances including methylene chloride, acetone, and chlorobenzene were detected in a seep sediment sample obtained nearly adjacent to Well UD-3.

References: 2 and 5.

Assigned value = 3.

Reference: 1.

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

40 inches.

Reference: 1.

Mean annual lake or seasonal evaporation (list months for seasonal):

27 inches.

Reference: 1.

Net precipitation (subtract the above figures):

13 inches.

Reference: 1.

Assigned value = 2.

Reference: 1.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Silt and clay.

Reference: 11.

Permeability associated with soil type:

10^{-5} - 10^{-7} cm/sec.

Reference: 1.

Assigned value = 1.

Reference: 1.

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Although drums containing liquid have been observed, only two drums containing sludge and a crystalline powder were sampled and determined to contain hazardous substances.

References: 2 and 5.

Assigned value = 3.

Reference: 1.

***

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Liner, leachate collection system, and cover evaluated.

Method with highest score:

No liner, nor leachate collection system. Cover is inadequate.

Reference: 5.

Assigned value = 3.

Reference: 1.

***

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Aroclor 1254, methylene chloride, acetone, chlorobenzene, ethylbenzene, m-xylene, O + P xylene, napthalene, phenanthrene, fluoranthene, pyrene, aluminum, barium, lead, chromium, zinc, and cyanide.

Reference: 2.

Compound with highest score:

Aroclor 1254, barium, lead, chromium, and zinc.

Assigned value = 18.

Reference: 1.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Unknown.

Minimum quantity assumed.

Basis of estimating and/or computing waste quantity:

Minimum quantity assumed.

Assigned value = 1.

Reference: 1.

***

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

The aquifer of concern is not used, however, can supply moderate amounts of water from sand and gravel beds in the unconsolidated deposits.

References: 3, 10, and Section 4.3.

Assigned value = 1.

Reference: 1.

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Aquifer of concern not used within 3-mi radius of site.

References: 3 and Phase II report Section 4.3.

Distance to above well or building:

Not applicable.

Assigned value = 0.

Reference: 1.

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Zero. Reference: 3.

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

Zero. Reference: 4.

Total population served by ground water within a 3-mile radius:

Zero.

Assigned value = 0.

Reference: 1.

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Methylene chloride, chlorobenzene, aluminum, barium, lead, manganese, nickel, and zinc detected in seep/seep sediment samples.

Reference: 2.

Rationale for attributing the contaminants to the facility:

Seep observed flowing into the Mohawk River.

References: Sections 3.2.4 and 4.4.

Assigned value = 45.

Reference: 1.

***

2 ROUTE CHARACTERISTICS

Not applicable, observed release.

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Name/description of nearest downslope surface water:

Average slope of terrain between facility and above-cited surface water body in percent:

Is the facility located either totally or partially in surface water?

Is the facility completely surrounded by areas of higher elevation?

1-Year, 24-Hour Rainfall in Inches

Distance to Nearest Downslope Surface Water

Physical State of Waste

***

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Method with highest score:

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Methylene chloride, chlorobenzene, aluminum, barium, lead, manganese, mercury, nickel, and zinc detected in seep/seep sediment samples.

Reference: 2.

Compound with highest score:

Barium, lead, and iron.

Assigned value = 18.

Reference: 1.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Unknown.

Basis of estimating and/or computing waste quantity:

Minimum quantity assumed.

Assigned value = 1.

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Recreational and commercial boating.

Reference: 5.

Assigned value = 2.

Is there tidal influence?

No.

Reference: 6.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Not applicable.

Reference: 6.

Distance to 5-acre (minimum) freshwater wetland, if 1 mile or less:

0.25 mi. The wetland is adjacent to the Mohawk River/barge canal and is therefore, a regulated wetland by definition of the U.S. EPA 40 CFR Part 230, Appendix A, 1980.

Reference: 6.

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None within 1 mi.

Reference: 7.

Combined assigned value: 2.

Reference: 1.

Population Served by Surface Water

Location(s) of water supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static waterbodies) downstream of the hazardous substance and population served by each intake:

None.

Reference: 3.

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre).

None.

Reference: 4.

Total population served:

Zero.

Combined assigned value = 0.

Reference: 1.

Name/description of nearest of above waterbodies:

Not applicable.

Distance to above-cited intakes, measured in stream miles.

Not applicable.

AIR ROUTE

Not applicable based on available information. There is no information or analytical data in the files received during the record search indicating a problem with air contamination. No sampling program was conducted during the Phase II investigation (Reference: Section 3.1).

1 OBSERVED RELEASE

Contaminants detected:

Date and location of detection of contaminants

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

***

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi	0 to 1 mi	0 to 1/2 mi	0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) freshwater wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

FIRE AND EXPLOSION

Not applicable based on information provided. No state or local fire marshal has certified that the site presents a significant fire or explosion threat or whether a threat has been demonstrated based on field observations (e.g., combustible gas indicator readings are not available). Reference: 8.

1 CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

***

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

***

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None reported.

Reference: Chapter 3.

***

2 ACCESSIBILITY

Describe type of barrier(s):

Barriers do not completely surround the facility.

Reference: 5.

Assigned value = 3.

Reference: 1.

***

3 CONTAINMENT

Type of containment, if applicable:

Leachate was observed seeping from the edge of the dump. Drums were observed in various stages of deterioration.

References: 2 and 5.

Assigned value = 15.

Reference: 1.

***

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Methylene chloride, acetone, ethylbenzene, M-xylene, O&P-xylene, arsenic, cadmium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, zinc, tin, cyanide, and phenol detected in drum samples.

Reference: 2.

Compound with highest score:

Cadmium, chromium, copper, and lead.

Assigned value = 3.

Reference: 1.

***

5 TARGETS

Population Within 1-Mile Radius

5,591. Estimated from 1/8 population of Deerfield (3.934), 1/15 population City of Utica (75,632), and 15 private homes x 3.8 persons per household.

References: 6 and 9.

Assigned value = 4.

Reference: 1.

Distance to Critical Habitat (of Endangered Species)

None.

Reference: 7.

Assigned value = 0.

REFERENCES

1. U.S. Environmental Protection Agency. 1984. Uncontrolled Hazardous Waste Site Ranking System. A Users Manual.

2. EA Science and Technology Laboratory (EA). 1986. Analytical Results of 7-9 April 1987 Phase II Sampling Program (Sections 3.2.4 and 4.4.)

3. New York State Department of Health. 1982. New York State Atlas of Community Water System Sources (Appendix 1.4.2-2.)

4. Mangini, Robin. 1986. District Conservationist, Soil Conservation Service. Letter regarding irrigated land. 2 May. (Appendix 1.5.1-1.)

5. EA. 1985. Site Inspection 1 May.

6. New York State Department of Transportation (NYSDOT). 1978. 7.5-Minute Series: Utica East and Utica West Quads. (Appendix 1.4.2-1.)

7. Ozard, J.W. 1986. Senior Wildlife Biologist Significant Habitat Unit New York State Department of Environmental Conservation. Personal Communication. (Appendix 1.5.1-2.)

8. Zinicola, Marshall. 1987. Fire Marshall City of Utica. Personal Communication. 20 April. (Appendix 1.5.1-3.)

9. NYSDOT. 1983. New York State Map Gazetteer.

10. Halberg, H.N. et al. 1962. Water Resources of the Utica-Rome Area, New York. Geological Survey Water-Supply Paper 1499-C. (Appendix 1.4.3-1.)

11. EA. 1985. Phase II Monitoring Well Installation and Sampling (Sections 3.2.3 and 4.3.)

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-13
July, 1981

City of Utica Dump

Potential Hazardous Waste Site

Site Inspection Report

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. SITE NAME AND LOCATION

01 SITE NAME *(Legal, common, or descriptive name of site)*: City of Utica Dump

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Incinerator Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Utica	NY	13501	Oneida	065	31

09 COORDINATES: LATITUDE 43° 06' 18" LONGITUDE 75° 11' 25"

10 TYPE OF OWNERSHIP *(Check one)*
☐ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☒ E. MUNICIPAL
☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 05 / 01/ 85 (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: approx. 1930 1970 (BEGINNING YEAR ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION *(Check all that apply)*
☐ A. EPA ☐ B. EPA CONTRACTOR ________ *(Name of firm)* ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ________ *(Name of firm)*
☐ E. STATE ☐ F. STATE CONTRACTOR ________ *(Name of firm)* ☐ G. OTHER ________ *(Specify)*

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
James A. Shultz	Geologist	EA	(914) 692-6706

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Tom Porter	Geologist	EA	(914) 692-6706
Joyce Ferencz	Health and Safety Officer	EA	(301) 771-4950
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY *(Check one)*: ☒ PERMISSION ☐ WARRANT

18 TIME OF INSPECTION:

19 WEATHER CONDITIONS: 70 F, sunny with mild winds

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF *(Agency/Organization)*	03 TELEPHONE NO.
James A. Shultz	EA Science and Technology	(914) 692-6706

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Ellen B. Metzger		EA	(914) 692-6706	04 / 06 / 87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

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

02 WASTE QUANTITY AT SITE *(Measures of waste quantities must be independent)*

TONS ______

CUBIC YARDS ______

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			
OLW	OILY WASTE			
[✓ SOL]	SOLVENTS	unknown	--	
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
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
SOL	Methylene chloride		Drum	3,700	ppb
SOL	Acetone		Drum	1,600	ppb
SOL	Chlorobenzene		Drum	14	ppb
SOL	Ethylbenzene		Drum	310	ppb
SOL	M-xylene		Drum	800	ppb
SOL	O,p-xylene		Drum	680	ppb
OCC	Napthalene		Drum	25,000	ppb
OCC	Penanthrene		Drum	43,000	ppb
OCC	Fluoranthene		Drum	33,000	ppb
OCC	Pyrene		Drum	17,000	ppb
MES	Aluminum		Drum	6,000	ppm
MES	Barium		Drum	203	ppm
MES	Lead		Drum	54	ppm
MES	Chromium		Drum	15	ppm
MES	Zinc		Drum	265	ppm
MES	Total Cyanide		Drum	2.13	ppm

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

Not applicable

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

EA Site Inspection, 1 May 1985.
Appendixes 1.4.1- 1through 1.4.1-12.
EA Science and Technology Analytical results of April 1987 Phase II Sampling.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D980509343

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: zero 04 NARRATIVE DESCRIPTION

The area immediately surrounding the site is supplied by the Hinckley Reservoir. There are no reported wells in a 3-mi radius of the site.

01 ☐ B. SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

There are no water supply intakes within 3-mi downstream of the City of Utica Dump.

01 ☐ C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

No data available.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 04 NARRATIVE DESCRIPTION

Fires have been reported in the past, but the Fire Marshal does not consider the site a current fire or explosive threat.

01 ☐ E. DIRECT CONTACT 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5,591 04 NARRATIVE DESCRIPTION

Leachate was observed seeping from the edge of the dump and drums in different stages od deterioration are present throughout the site. A gate is located at the entrance, however, there is no other access control.

01 ☐ F. CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: ______ (Acres) 04 NARRATIVE DESCRIPTION

Sediment samples taken during EA's Phase II investigation detected several priority pollutants.

01 ☐ G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: zero 04 NARRATIVE DESCRIPTION

Drinking water for the City of Utica is supplied by Hinkley Reservoir. Ground water flowing beneath the site flows to the Mohawk River and there are no water supply intakes within 3-mi downstream of the site.

01 ☐ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

None known.

01 ☐ I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5,591 04 NARRATIVE DESCRIPTION

Potential through direct contact. Estimated population in 1-mi radius of site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE: NY
02 SITE NUMBER: D980509343

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known.

01 ☐ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

None known.

01 ☐ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION

Deteriorating drums have been located during site inspection. Exploding drums have reportedly started fires according to a U.S. EPA FIT Report.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Illegal dumping has been reported in the past.

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: ______

IV. COMMENTS

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

Appendixes 1.4.2-1, 1.4.2-2, and 1.4.5-1.
EA Site Inspection
NUS Corporation Site Information Assessment form.
NYSDEC Region 6 files (New York State Gazateer NUS Report).

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	> 65	55-gal
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☒ H. OPEN DUMP	unknown	
☒ I. OTHER trench and fill (Specify)		

04 TREATMENT (Check all that apply)

- ☒ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER ______ (Specify)

05 OTHER

☒ A. BUILDINGS ON SITE

06 AREA OF SITE

55 (Acres)

07 COMMENTS

The site was operated as an open dump during its early history, and later a trench and fill method was used. An onsite incinerator was in operation between 1930-1960. When the incinerator malfunctioned, the draw waste went directly to the landfill. (Appendix 1.4.1-3.)

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

There is no liner beneath the waste. It appears as though a dike was installed at the southeast toe of the dump, but it is no longer effective as water has eroded the walls. Several drums containing liquid were spotted during the EA Site Inspection, and many are deteriorating (Appendix A.1-2).

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

The only land access to the dump is blocked by a locked gate. A guard watches the entrance during working hours. Dump is easily accessible by boat or by foot after 5 pm on weekdays and on weekends.

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

EA Site Inspection.
NUS FIT Report.
EA Phase II Investigation.
Appendixes 1.4.1-1 through 1.4.1-7.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: NY

02 SITE NUMBER: D980509343

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 15 (mi)

B. ______ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING

☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)

☒ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL ______ (mi)

04 DEPTH TO GROUNDWATER 0-10 (ft)

05 DIRECTION OF GROUNDWATER FLOW SE and NW

06 DEPTH TO AQUIFER OF CONCERN N/A (ft)

07 POTENTIAL YIELD OF AQUIFER ______ (gpd)

08 SOLE SOURCE AQUIFER ☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

The nearest well is for Thompson Mobile Manor approximately 5 mi west of the site.

10 RECHARGE AREA

☐ YES

☐ NO

COMMENTS The site lies adjacent to the Mohawk River and Erie Canal, which is effluent/influent depending on the ground-water table.

11 DISCHARGE AREA

☐ YES

☐ NO

COMMENTS The site lies adjacent to the Mohawk River and Erie Canal which is effluent/influent depending on the ground-water table.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE

☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES

☐ C. COMMERCIAL, INDUSTRIAL

☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Erie Canal	☐	Adjacent (mi)
Mohawk River	☐	Adjacent (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 5,591 NO. OF PERSONS	B. 29,911 NO. OF PERSONS	C. 53,292 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION .5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE ______

04 DISTANCE TO NEAREST OFF-SITE BUILDING .5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site is bordered by the Erie Canal and Mohawk River. The City of Utica population is 75,000, lies .25 to the west.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: NY
02 SITE NUMBER: D980509343

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE *(Check one)*

☒ A. 10⁻⁶ – 10⁻⁸ cm/sec ☐ B. 10⁻⁴ – 10⁻⁶ cm/sec ☐ C. 10⁻⁴ – 10⁻³ cm/sec ☐ D. GREATER THAN 10⁻³ cm/sec

02 PERMEABILITY OF BEDROCK *(Check one)* unknown

☐ A. IMPERMEABLE *(Less than 10⁻⁶ cm/sec)* ☐ B. RELATIVELY IMPERMEABLE *(10⁻⁴ – 10⁻⁶ cm/sec)* ☐ C. RELATIVELY PERMEABLE *(10⁻² – 10⁻⁴ cm/sec)* ☐ D. VERY PERMEABLE *(Greater than 10⁻² cm/sec)*

03 DEPTH TO BEDROCK: >140 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE: unknown (ft)

05 SOIL pH: unknown

06 NET PRECIPITATION: 13 (in)

07 ONE YEAR 24 HOUR RAINFALL: 2.25 (in)

08 SLOPE
SITE SLOPE: - <3 %
DIRECTION OF SITE SLOPE: S
TERRAIN AVERAGE SLOPE: 14 %

09 FLOOD POTENTIAL
SITE IS IN ________ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS *(5 acre minimum)*
ESTUARINE A. ________ (mi)
OTHER B. 0.25 (mi)

12 DISTANCE TO CRITICAL HABITAT *(of endangered species)*: >1 (mi)
ENDANGERED SPECIES: ________

13 LAND USE IN VICINITY

DISTANCE TO:
COMMERCIAL/INDUSTRIAL A. .9 (mi)
RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES B. .25 (mi)
AGRICULTURAL LANDS
PRIME AG LAND C. ________ (mi)
AG LAND D. 0 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The City of Utica Dump is situated in a low swampy wooded area nestled between the Erie Canal and Mohawk River. The City of Utica lies approximately 0.9 mi upgradient of the site. Adjacent property to the west is an active landfill run by the City of Utica.

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

EA Science and Technology drilling logs. Ref: Climate Atlas, Ozaro
EA Site Insepction.
New York State Department of Transportation Topographic Sheet, Utica East Quad.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	2	EA Engineering, Science, and Tech., Inc.	
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
Seep	1		
OTHER Drum	2		

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNu organic vapors	
Slope	Suunto clinometer
Well elevations	Surveyed above/below assumed elevation of 100 ft at UD-1 top of
	PVC casing.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☒ AERIAL

02 IN CUSTODY OF EA Science and Technology (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS EA Science and Technology

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Geophysical Surveys (conductivity and resistivity)
Short-term, low-yield pump test on Phase II monitoring wells
Grain size analysis for selected sediment samples from Phase II test borings.

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

EA Science and Technology Phase II Investigation. 1985-1987.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE NY
02 SITE NUMBER D980509343

II. CURRENT OWNER(S)

01 NAME City of Utica
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 1 Kennedy Plaza, City Hall
04 SIC CODE
05 CITY Utica
06 STATE NY
07 ZIP CODE 13402

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

PARENT COMPANY *(If applicable)*

08 NAME
09 D+B NUMBER
10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

08 NAME
09 D+B NUMBER
10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

08 NAME
09 D+B NUMBER
10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

08 NAME
09 D+B NUMBER
10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

III. PREVIOUS OWNER(S) *(List most recent first)*

01 NAME Edward Donahue
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* unknown
04 SIC CODE
05 CITY Utica
06 STATE NY
07 ZIP CODE 13502

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

IV. REALTY OWNER(S) *(If applicable; list most recent first)*

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

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

NYSDEC Files, Region 6.
Appendix (for NUS Report).

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE
08 YEARS OF OPERATION
09 NAME OF OWNER

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME
11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
13 SIC CODE
14 CITY
15 STATE
15 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE
08 YEARS OF OPERATION
09 NAME OF OWNER DURING THIS PERIOD

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE
08 YEARS OF OPERATION
09 NAME OF OWNER DURING THIS PERIOD

01 NAME
02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE
08 YEARS OF OPERATION
09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME
11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
13 SIC CODE
14 CITY
15 STATE
16 ZIP CODE

10 NAME
11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
13 SIC CODE
14 CITY
15 STATE
16 ZIP CODE

10 NAME
11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*
13 SIC CODE
14 CITY
15 STATE
16 ZIP CODE

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

NYSDEC Region 6 files.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. ON-SITE GENERATOR

01 NAME: City of Utica

02 D+B NUMBER:

03 STREET ADDRESS (P.O. Box, RFD #, etc.): 1 Kennedy Drive, City Hall

04 SIC CODE:

05 CITY: Utica

06 STATE: NY

07 ZIP CODE: 13502

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

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

NYSDEC Region 6 files.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. PAST RESPONSE ACTIVITIES None known

01 ☐ A. WATER SUPPLY CLOSED 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL 02 DATE ____ 03 AGENCY ____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

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

6. REMEDIAL COST ESTIMATE

6.1 SITE SUMMARY AND PHASE II SAMPLING AND ANALYSIS

The Utica Dump site is an inactive dump located at the end of Incinerator Road in the City of Utica, Oneida County, New York. The site encompasses approximately 55 acres and is situated in a remote swampy area bordered by the Erie Barge Canal to the north, the Mohawk River to the south and east, and the City of Utica's Hardfill Landfill to the west. The site was operated by the City of Utica from the early 1930s until 1972 to dispose of municipal wastes and some wastes from local industries. Local companies deny using the site except for disposal of their non-industrial wastes (Appendixes 1.4.1-7 through 1.4.1-12). Little else is known about the quantity or nature of the wastes. Presently, the City of Utica Dump is generally covered and vegetated, except for the eastern and southern edge (toe) of the dump where there is a steep slope of exposed debris. The City currently uses the northwestern-most portion of the site for disposal of snow removed from city streets. Several drum clusters containing unknown substances (both solid and liquid) are present throughout the site.

The New York State Department of Environmental Conservation (NYSDEC) collected sediment and aqueous leachate samples at the site in 1981. The aqueous samples indicated concentrations above the CRDL for phenols, aldrin, I-BHC, S-BHC, V-BHC and heptochlor, as well as low levels of some metals (Appendix 1.4.4-1).

The sediment samples indicated concentrations of chlorobenzene, methylene chloride, heptochlor, total cyanide, and total phenols above the CRDC. Concentrations of heavy metals were also detected (Appendix 1.4.4-1).

As part of the Phase II investigation, three monitoring wells were installed on 27-28 June and 1 July 1985. The upgradient well had to be replaced due to vandalism, and a new well was installed by NYSDEC on 5 April 1986. Sampling of two of these wells was performed by EA personnel on 7 and 8 April 1987; the third well was inaccessible due to the flooding of the Mohawk River. Analysis of the ground-water samples indicates that aluminum, arsenic, barium, iron, magnesium, potassium, and sodium were detected in elevated concentrations in the downgradient sample (as compared with the concentration detected in the upgradient sample) indicating an observed release from the site to the ground water. It should be noted that, with the exception of iron, the concentrations of the metals mentioned above fall below the limits recommended by the New York State Quality Standards for Class GA ground water.

Due to flooding of the Mohawk River during the Phase II sampling program, surface water samples could not be collected. However, a seep was observed at that time to be flowing directly into the Mohawk River. A seep sample (both aqueous and sediment) was collected and analyzed. Results of these samples indicated concentrations of 21 metals, 3 volatile organics, total cyanide, total phenol, and Arochlor 1254 (PCB) above the contract required detection limit (CRDL), indicating an observed release to surface water (Table 4-2).

The contents of two drums were also collected on 7 and 8 April 1987. Two volatile organics, 17 metals, total cyanide, total phenol, and 16 base neutral/acid extractable organics were detected above the CRDL (Table 4-3). EP Tox performed on the drum samples found no elevated levels of metals. For U.S. EPA bulk drum hazardous waste characteristics, only one drum had a parameter (corrosivity) outside the threshold limits.

6.2 RECOMMENDED REMEDIAL ACTION

Results of the Phase II investigation of the Utica Dump site reveal a need for further study and remedial action. It is recommended that a remedial investigation/feasibility study (RI/FS) be initiated to better define the extent and nature of the wastes on site. Although final recommendations for remedial action should be made after the RI/FS is completed, the following presents options for additional investigative action and remedial action based on the results of the Phase II investigation:

- Installation of additional monitoring wells and establishment of a ground-water monitoring program. At a minimum, the plan should include biannual sampling for heavy metals and volatile organics. The cost of installing the additional wells is \$16,000-\$28,000, based upon eight new wells. The annual cost for the monitoring program is in the range of \$75,000-110,000.

- Develop a surface water monitoring program for the area adjacent to the Mohawk River. Sampling should be done at least twice a year and should be analyzed for heavy metals, volatile organics, total cyanide, total phenol, and PCB. The estimated annual cost for this program is $25,000-$40,000.

- Installation of a membrane-lined cap over the entire 55-acre site. This measure is expected to reduce leachate generation and consequently limit leachate flow towards the Mohawk River. The proposed system may incorporate a clay layer, a synthetic membrane, a sand drainage layer, and topsoil cover. The site should then be seeded with appropriate vegetation. A detailed study of site topography and an engineering analysis would be necessary prior to designing the cap. The capping system should include a gas venting system. Estimated cost of the system as described above ranges from $7,500,000 to $11,800,000. Annual maintenance costs are estimated at $30,000-$55,000.

- Installation of a ground-water extraction and treatment system integral to the above-mentioned cap. Based on a 40-in./year rainfall, an area of 2,400,000 square feet (55 acres), leachate generation is estimated to be 0.05-0.1 mgd. It is anticipated that 3-4 wells would be placed within the landfill and induce cones of depression for leachate removal. These wells would then pump to a treatment system. Cost of installing the wells and pumps is estimated to be $25,000-$45,000. Capital costs for an activated carbon treatment system range from $16,000/mgd for erection of a leased system to $700,000/mgd for construction of a permanent system. Annual O & M costs can be expected to vary from $395,000 to $580,000/mgd depending upon system components.

Two other remediation alternatives were considered but found to be inappropriate for the Utica Dump site. A slurry wall running along the eastern and southern border of the site was found to be impractical due to the depth to bedrock (>100 ft). Cost of this method of containment would be prohibitive. Also found to be economically unfeasible was the excavation and disposal alternative, due to the large volume of waste and cover material and anticipated hauling distance. The "no action" option was deemed inappropriate based on the results of the Phase II investigation. A summary of the recommended remediation costs is provided in Table 6-1. It should be noted that these recommendations are preliminary at best, and costs presented are rough estimates which are based upon the Phase II investigation information.

It should be emphasized that additional information is required before any remedial action is taken. An RI/FS would be an appropriate initial step in providing a technically sound and cost-effective remediation of the Utica Dump site.

TABLE 6-1 RECOMMENDED REMEDIAL MEASURES UTICA DUMP SITE, UTICA, NEW YORK

Action	Initial Cost	Annual O & M Cost
Installation of eight ground-water monitoring wells	$16,000-$28,000	$75,000-$110,000*
Surface water monitoring program	---	$25,000-$40,000*
Capping of landfill	$7,500,000-$11,800,000	$30,000-$55,000
Leachate collection wells	$25,000-$45,000	---
Activated carbon leachate treatment system	$16,000-$700,000/mgd**	$395,000-$580,000/mgd

---

* Includes sampling and analysis program.

** Wide cost variation due to numerous treatment methods available from mobile systems to permanently housed pumping and treatment equipment.

REFERENCES FOR CHAPTER 6

Compendium of Costs of Remedial Technologies at Hazardous Waste Sites, Final Report, Hazardous Waste Engineering Research Laboratory, Office of Research and Development, U.S. EPA, Cincinnati, Ohio, September 1985.

Handbook: Remedial Action at Waste Disposal Sites, U.S. EPA Technology Transfer, Cincinnati, Ohio, October 1985.

APPENDIX 1.3.1-1

Contact	Information Received
Mr. Carson Serrel, P.E. Stetson-Dale 185 Genesee Street Utica, New York 13501 (315) 797-5800	Hardfill landfill blueprints and engineering report
Ms. Pat Leabert, Env. General Electric Aerospace Electronic Systems Department French Road Maildrop 313 Utica, New York 13503 (315) 793-7509	Correspondence
Mr. Vincent Scarfile, Mgr. Adm. Kelsey-Hayes Company Post Office Box 539 Utica, New York 13503 (315) 792-4111	Correspondence
Mr. Edward Stark Rural Zone East Longmeadow, Massachusetts 01028 (413) 525-7324	Correspondence
Mr. Eugene Finnegan, Vice President Foster Paper Company 2160 Erie Street Utica, New York 13502 (315) 733-2301	Correspondence
Mr. Robert F. Jondreau, Manager Sperry Corporation Post Office Box 500 Blue Bell, Pennsylvania 19424 (215) 542-4011	Correspondence
Mr. Seth Cornish, Commissioner Department of Public Works City of Utica Utica, New York 13501 (315) 738-1343	Site interview, but not familiar with operation of the old dump
Mr. John Zegarelli, P.E. City of Utica Utica, New York 13501 (315) 792-0152	Telephone conversation, but not familiar with operation of old dump. Recommended EA obtain a copy of the 1984 Stetson-Dale Engineering report, Hardfill Disposal Area

Contact	Information Received
Fire Marshal Zinicola City of Utica Utica, New York 13501 (315) 724-5153	Fire and Explosion information
Mr. Gus Detraglia Sr., P.E. Former City of Utica Solid Waste Commissioner Utica, New York 13501 (315) 735-0559	Site interview
Mr. Marsden Chen, P.E./Mr. Jim Tofflemire New York State Department of Environmental Conservation Bureau of Site Control 50 Wolf Road Albany, New York 12233-0001 (518) 457-0639	Site file; NUS report
Mr. Darrel Sweredowski New York State Department of Environmental Conservation Watertown, New York 13601 (315) 785-2513	Analytical data
Mr. Ron Herkins New York State Department of Health Syracuse, New York 13202 (315) 428-4718	No information
Mr. Pat Trap New York State Department of Health District Office Utica, New York 13501 (315) 793-2585	No information
Mr. Mike Gappin/Mr. Hans Arnold Environmental Management Council Oneida/Herkimer Counties Utica, New York 13501 (315) 798-5710	Comprehensive wastewater management studies, Oneida-Herkimer Counties, New York
Mr. Kevin Walter, Atty. New York State Department of Environmental Conservation Division of Hazardous Waste Enforcement 50 Wolf Road Albany, New York 12233-0001 (518) 457-5637	No file

Contact	Information Received
Mr. John Iannotti, P.E. New York State Department of Environmental Conservation Bureau of Remedial Action 50 Wolf Road Albany, New York 12233-0001 (518) 457-5637	No file
Mr. Earl Barcomb New York State Department of Environmental Conservation Landfill Operations Vatrano Road Albany, New York 12205 (518) 457-2051	Site file
Mr. Peter Skinner, Atty. New York State Attorney General's Office Room 221 Justice Building Albany, New York 12224 (518) 474-2432	No file
Mr. Ron Tramontano/Mr. Charlie Hudson Bureau of Toxic Substance Assessment New York State Department of Health Tower Building 84 Holland Avenue Albany, New York 12237 (518) 473-8427	No file
Mr. Perry Katz U.S. Environmental Protection Agency Region II Room 757 26 Federal Plaza New York, New York 10278 (212) 264-4595	No file
Ms. Diana Messina U.S. Environmental Protection Agency Region II Surveillance and Monitoring Branch Woodbridge Avenue Edison, New Jersey 08837 (201) 321-6776	No file

APPENDIX 1.3.2-1

GEOPHYSICAL FIELD EQUIPMENT AND GENERAL METHODOLOGY

Two geophysical instruments were used at the site to evaluate general subsurface conditions (geology, depth to ground water, and contamination). The following provides a description of the equipment used.

Terrain Conductivity

EM-34

The Geonics, Ltd., EM-34 terrain conductivity meter is portable. The EM-34 has variable depth capability which allows the user to measure subsurface conductance at more than one depth. The EM-34 has separate transmitter and receiver coils. The coils are connected by either a 10-, 20-, or 40-meter cable which determines that general depth range being investigated. In addition to being able to change cable lengths, the operator can change the receiver and transmitter orientations (horizontal and vertical dipole modes) to also vary the depth range being investigated.

The transmitter induces very small (primary field) current into the earth from a magentic dipole transmitter coil producing a weak secondary magnetic field. The equipment compares the weak secondary field with the primary field using advanced current techniques to produce direct terrain conductivity (mmhos/m) readings.

Resistivity

Resistivity soundings were performed using a Bison 2350B earth resistivity meter. The 2350B earth resistivity meter measures the nature of subsurface materials in ohm-ft. This technique employs four electrodes (two outer and two inner) installed and oriented along a straight line (for the Wenner and Schlumberger arrays). The instrument induces a DC current into the ground through the outer electrodes, and the potential difference is measured between the two inner electrodes. This potential difference may be affected by differences in geology, porosity, dissolved ions, soil moisture, and/or water quality. As the electrode positions are moved, specific potential differences are recorded. For each potential difference, apparent resistivity can be calculated. When the apparent resistivity values are plotted, the nature of subsurface conditions (locations of voids, sand and gravel, water quality, etc.) can be inferred.

The following pages provides the City of Utica landfill site geophysical report prepared by Delta Geophysical Services.

UTICA LANDFILL SITE

CONDUCTIVITY

Perimeter lines were made with an EM-34 (20-meter cable), which allowed us to measure subsurface conductance (mmhos/m) for two effective depths (45 and 90 feet). A total of 8 survey lines were run and conductivity data collected at 30-foot stations along each line. The perimeter lines were located relative to known geologic and/or hydrogeologic information, "noise" from external interferences (power lines, underground pipes, etc.) and limited accessibility (water, structures, etc.). The data recorded from the two effective depths were used to locate anomalous zones which may indicate subsurface contamination (plumes).

A general site map with survey line locations is shown on Plate 1. Maps 1 and 2 (in the Appendix) shows the conductivity lines with corresponding conductivity values (mmhos/m) and interpreted anomalous zones.

Map 1 (effective depth: 45 feet) shows 3 high anomalous zones and 8 moderate anomalous zones. The high anomalous zones indicate larger amounts of subsurface contamination relative to the moderate anomalous zones.

Map 2 (effective depth: 90 feet) shows six moderate and one high anomalous zones.

RESISTIVITY

Four Schlumberger resistivity soundings were run. Sounding 1 was located away from any high conductivity anomalous zones -- the other three soundings were located adjacent to anomalous zones (see Maps 1 and 2 for locations).

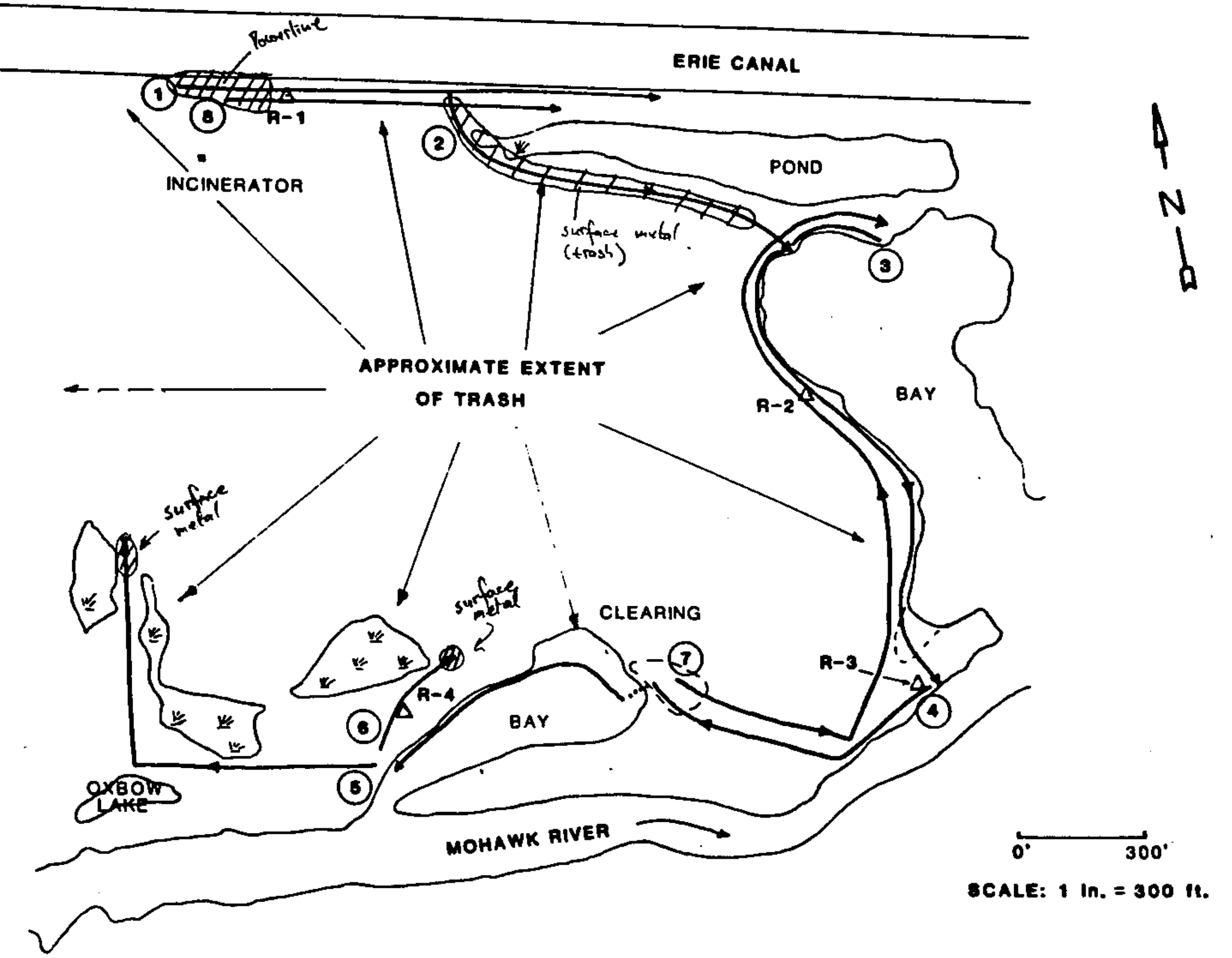
Each resistivity sounding was analyzed using computer and conventional techniques to best interpret the data.

Resistivity Sounding 1 reflects three general layers (see computer curve plots in Appendix). The upper layer (0-14) feet has been interpreted to be unsaturated sand and gravel. The intermediate layer (14-40 feet) is interpreted to be saturated silt and sand and the third layer (greater than 40 feet) has been interpreted to be saturated sand and gravel. The depth to water is interpreted to be approximately 14 feet.

Resistivity Sounding 2 reflects two general layers. The upper layer (0-10 feet) has been interpreted to be unsaturated silt and clay. The second layer (greater than 10 feet) is interpreted to be saturated silt and sands. Depth to water is interpreted to be approximately 10 feet.

Resistivity Sounding 3 reflects three general layers. The upper layer (0-12 feet) has been interpreted to be unsaturated silt and clay. The second layer (12-16 feet) is interpreted to be saturated silt, sand and clay. The third layer (greater than 16 feet) is interpreted to be saturated sands and gravels. Depth to water is interpreted to be approximately 12 feet.

Resistivity sounding 4 reflects three general layers. The upper layer (0-2 feet) has been interpreted to be unsaturated silt and clay. The intermediate layer (2-45 feet) is interpreted to be saturated silt, sand and clay and the third layer (greater than 45 feet) is interpreted to be saturated silt and sand. The depth to water is interpreted to be approximately 8 feet.



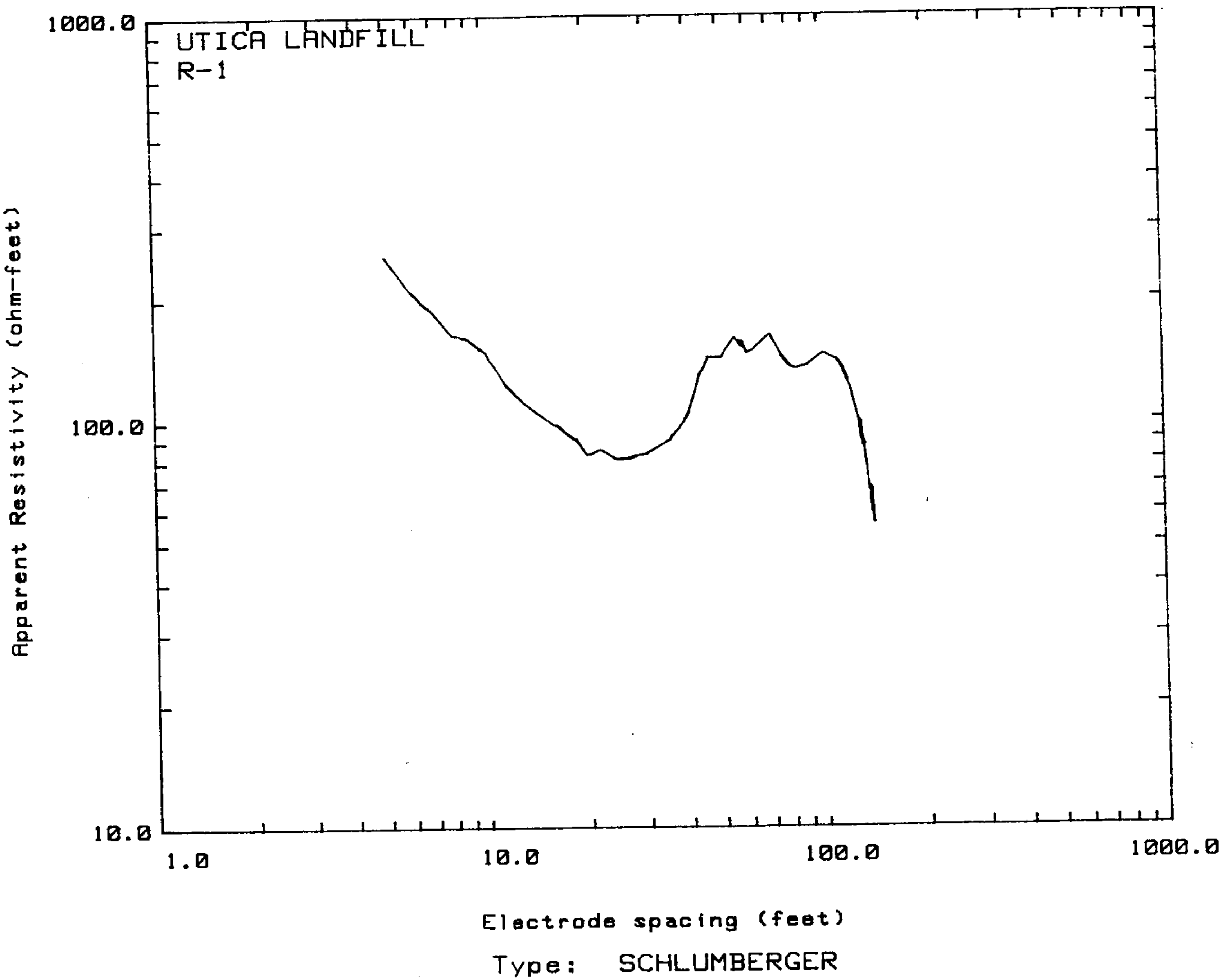
UTICA LANDFILL

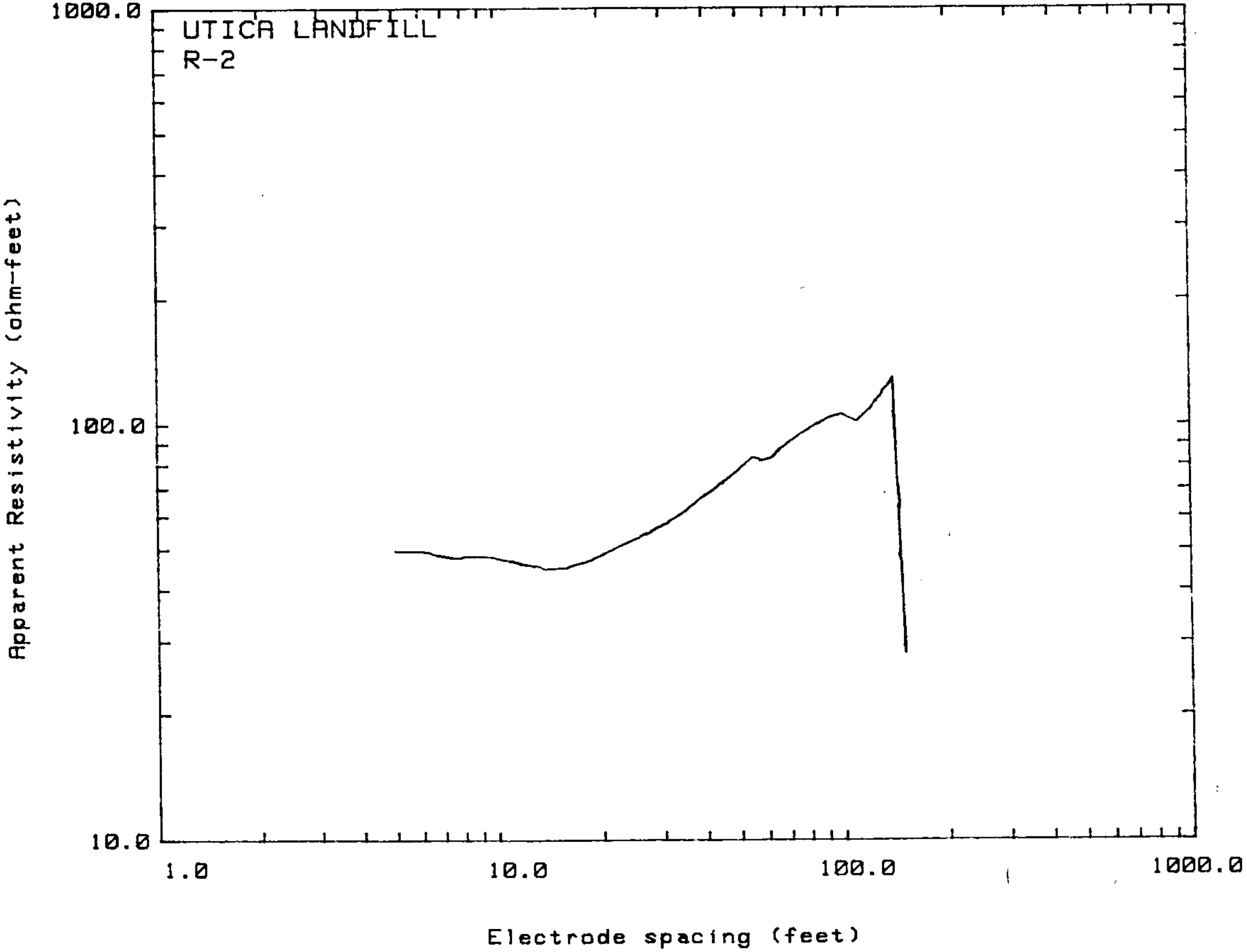
TERRAIN CONDUCTIVITY SURVEY
(EXTERNAL INTERFERENCES)

- ●→ LINE NUMBER AND DIRECTION
- R-1 △ RESISTIVITY SOUNDING
- ⩡ SWAMP

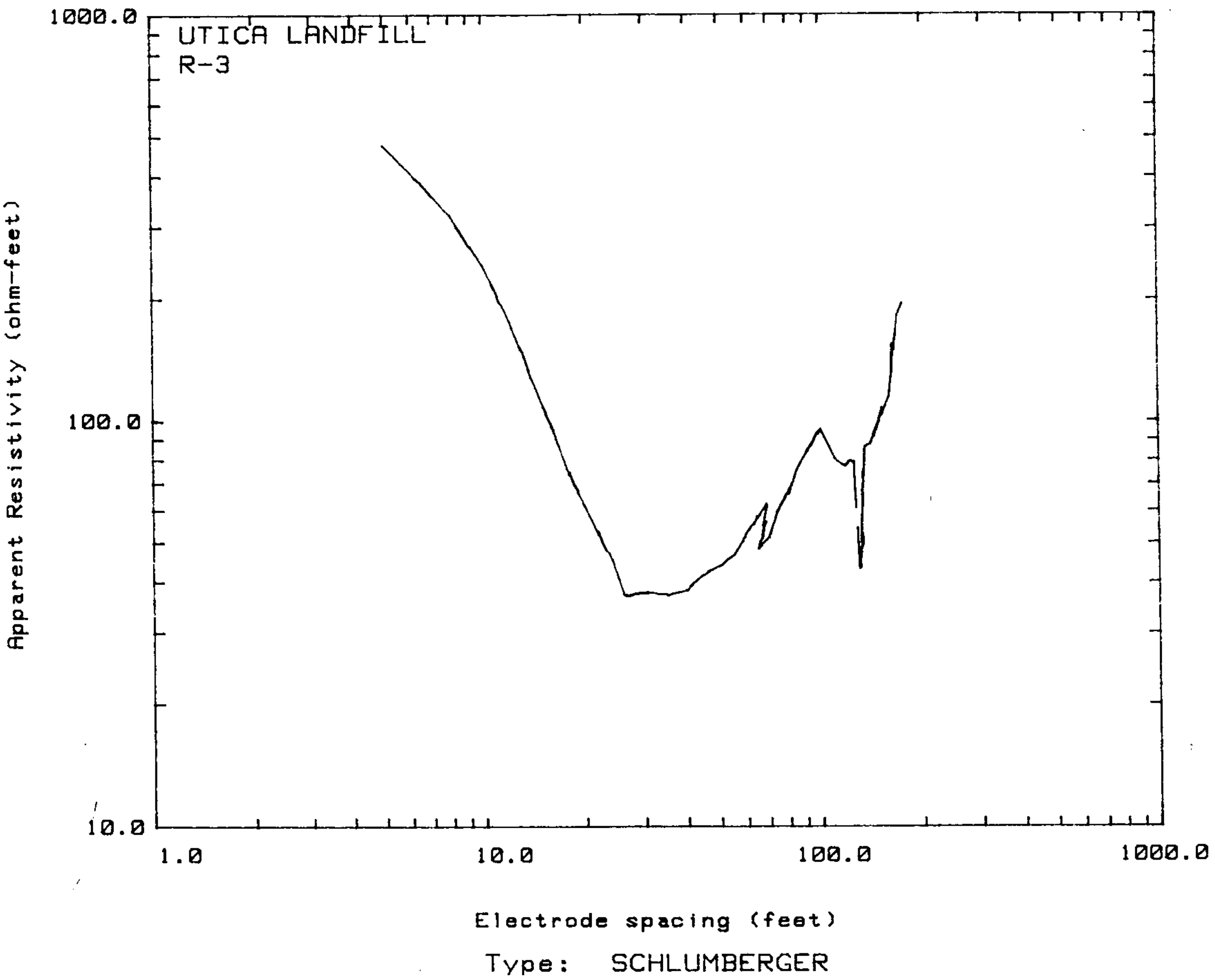
PLATE 1

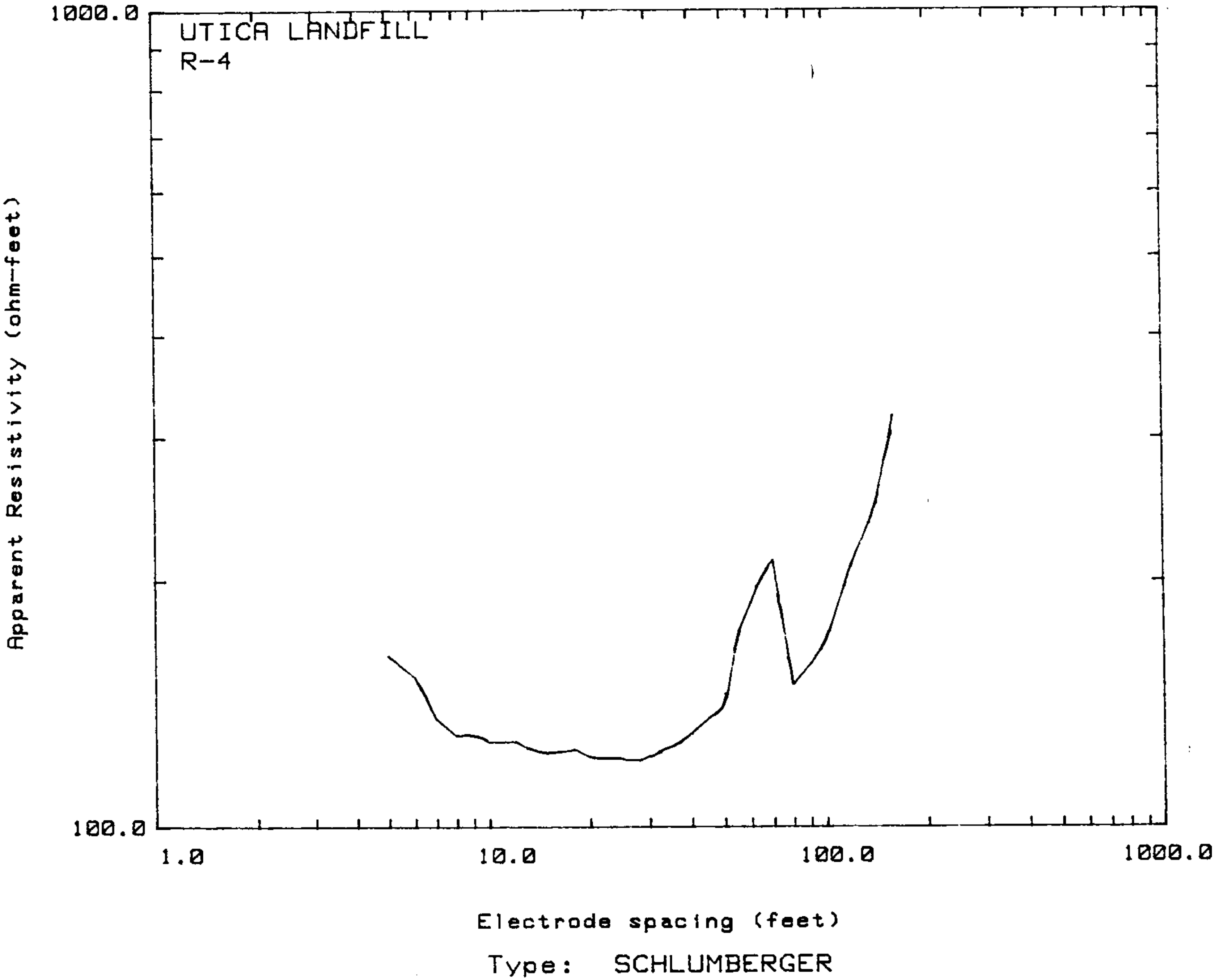
Delta Geophysical Services


UTICA LANDFILL
R-1
1000.0
100.0
10.0
Apparent Resistivity (ohm-feet)
1.0
10.0
100.0
1000.0
Electrode spacing (feet)
Type: SCHLUMBERGER



Type: SCHLUMBERGER


UTICA LANDFILL
R-3
1000.0
100.0
10.0
Apparent Resistivity (ohm-feet)
1.0
10.0
100.0
1000.0
Electrode spacing (feet)
Type: SCHLUMBERGER


UTICA LANDFILL
R-4
1000.0
100.0
Apparent Resistivity (ohm-feet)
1.0
10.0
100.0
1000.0
Electrode spacing (feet)
Type: SCHLUMBERGER

APPENDIX 1.3.2-2

MONITORING WELL INSTALLATION AND TESTING PROCEDURES

Observation Well Drilling and Sediment Sampling

Well drilling was accomplished using a track-mounted CME-45 drill rig. A hollow-stem auger drilling method with 4-1/4-in. I.D. auger was used in unconsolidated sediment.

Prior to the drilling of each boring/well, and at the completion of the last boring/well, the drilling equipment which came in contact with subsurface materials was pressure washed with hot potable water. Soil sampling of the unconsolidated sediment was performed using a split-spoon sampler, at approximately 5-ft intervals and at detected major stratigraphic changes. The split-spoon sampler was pressure washed with hot potable water before and after each sample. A HNU was used to monitor the potential organic vapors emitted during drilling operations and from each soil sample. Samples of major soil/ unconsolidated sediment types encountered during drilling were collected and grain size analysis was performed on selected representative samples. All drill cuttings, fluids, and development/purging water were left on, or discharged to, the ground surface in the immediate area of the activity. An HNU reading of at least 5 ppm above ambient readings was established by NYSDEC as the criteria above which fluids and cuttings were to be collected and drummed for future appropriate disposal by NYSDEC. No such readings were recorded.

Well Construction

Immediately prior to installation, the PVC well pipe and screen were pressure washed with hot potable water. Standard well construction for wells completed in unconsolidated sediment consisted of an approximately 1-ft layer of sand placed at the bottom of the borehole below 10 ft of 2-in. diameter threaded-joint PVC well screen and an appropriate length of 2-in. diameter PVC riser with a bottom plug/cap. A sand pack was placed around the well screen up to 2 ft above the top of the screen. A bentonite pellet seal of approximately 2 ft in thickness was then placed on top of the sand pack. A grout-bentonite mixture was then added to fill the annular space from the top of the bentonite seal up to grade. For the three initial PVC wells (UD-1, UD-2, and UD-3) installed, the filter sand and bentonite pellets were carefully placed by hand down the annular space between the hollow-stem auger and the PVC well pipe as the augers were slowly withdrawn. The depth to the top of the filter sand or bentonite pellets was constantly monitored with a clean, weighted-tape and compared to the depth to the base of the hollow-stem auger. Because the three initial PVC wells (UD-1, UD-2, and UD-3) screen the uppermost few feet of the water table aquifer, the bentonite seal was generally close to ground surface and allowed for careful placement of the grout from ground surface.

Well Development

The development of the monitoring wells was performed by pumping as soon as practical after well installation. A centrifugal pump was used when the depth to water is less than 20 ft below ground surface, and a Keck SP-84 submersible pump was used when depth to water was greater than 20 ft below ground surface.

For development using a centrifugal pump, a new, unused length of polyethylene flexible pipe was used in each well as a suction line. The pipe was fitted approximately 6-in. from its lower end with a steel washer large enough to fit over the polyethylene pipe but small enough to fit into the well, held in place by hose clamps on either side of the washer. New, unused washers and clamps were used for each well. The washer acts as a plunger (surge block) when repeatedly raised and lowered in the screen interval. The well is simultaneously pumped and surged throughout the screen interval. The well is developed by alternately surging and pumping throughout the screened interval until the discharged water appears clear.

Pump Tests of Monitoring Wells

A short-term, low-yield pumping test was performed in each well. Each test was comprised of: (1) a continuous discharge, pumped (drawdown) phase, and (2) a recovery phase. For such a test, pumping and water level measurement occurred in the same well.

In performing the short-term pumping test, first the static water level was measured and recorded prior to setting the pump. The pump was then started at a discharge rate approximately compatible to the estimated amount of ground water yielded by the well during development, simultaneously a stop-watch was started. Accurate depth to water measurements during the drawdown phase were obtained and recorded at regular intervals. The discharge rate was also measured (using a calibrated bucket and a stop watch) at periodic times during the pumping phase. When little or no further drawdown occurred, the pump was stopped. Time and water level measurement of the recovery phase instantly began. Accurate depth to water measurement were recorded at regular intervals until (if possible) 90 percent recovery to the static (pre-pumping) water level was achieved.

The short-term pumping tests were performed using a centrifugal pump for depth to water less than 20 ft below ground surface, and a Keck SP-84 small-diameter submersible pump for depth to ground water greater than 20 ft. A new, unused length of polyethylene flexible pipe was used as a suction line for each well. The Keck submersible pump discharge rate is low, ranging from 1/2 gpm to 1-1/2 gpm, depending upon depth from which the well was pumped and the turbidity of the water in the well. Between wells the submersible pump and electrical cord were washed with Alkanox detergent and potable water, then rinsed with deionized water, acetone, and hexane. The inside of the submersible pump was then flushed with a mixture of clean potable water and hexane.

A Q.E.D. water level indicator was used to measure depth to water in the wells; this instrument has depth markers at 0.05-ft intervals. The Q.E.D. probe was decontaminated between wells by washing with Alkanox detergent, then rinsed with deionized water, acetone, and hexane.

APPENDIX 1.3.2-3

SAMPLING PROCEDURES

A variety of sample types were collected. These included ground water from monitoring wells, leachate seep, sediment, and drum contents. All sampling was conducted by EA personnel under supervision of the project manager. All sampling was accomplished under a rigorous chain-of-custody protocol. All samples were placed in containers of appropriate composition containing appropriate preservatives as presented in Table 7-1 of the Work/QA Project Plan for the current Amendment to Perform Phase II Work dated 16 January 1985. Refer also to Section 13, Sample Custody Procedures, of the Work QA/Project Plan.

Monitoring Well Ground-Water Sampling

One set of grab-type ground-water samples were obtained for chemical analysis from two of the PVC monitoring wells installed for this project.

The purging and sampling of each well was performed at least one week after completion of well development. Each well was purged by a centrifugal pump or submersible pump to remove potentially stagnant water in the well and allow for the recharge of the fresh ground water to the well for sampling. Each sampled well was purged to dryness, or up to approximately four times the volume of the water column in the borehole, depending upon the well yield (Section 3.2.4, Figures 3-22 and 3-23).

To ensure that all stagnant water was purged from the well, the pump or suction line was lowered to the bottom of the well, at which time the pump was started. After the required volume of water had been nearly evacuated, the pump and/or suction line was raised slowly to the water surface and allowed to pump for a short time. The volume of water to be purged was determined as follows: for wells completed in unconsolidated material, a sand-packed 2-in. diameter PVC well was installed in a 7-in. diameter borehole; assuming 25 percent porosity of the sand pack, there is approximately 0.50 gallon/linear ft of water in the borehole.

Between wells, the Keck submersible pump and electrical cord were washed with Alkanox detergent and potable water, then rinsed with deionized water, acetone, and hexane. A mixture of potable water and hexane was also pumped through the submersible pump. A new, clean length of polyethylene flexible pipe was used in each well as the discharge or suction line.

Upon completion of the purging operation at each well, a sample of the ground water was obtained by using individual bottom-fill Teflon bailers lowered into each well with new polypropylene rope, for each well. For each well sampled, the bailer was handled with a new pair of disposable plastic surgical gloves. The bailer was lowered into each well slowly to minimize the potential for aeration of the water sample. Water samples were carefully transferred from the bailer to the sample containers to further minimize the potential for aeration of water samples, especially those for VOA. No "head space" was allowed in filled VOA water sample containers. Prior to arrival at the site, individual bottom-fill Teflon bailers were prepared in the laboratory for each well to be sampled. The preparation procedures were comprised of washing with hot water and Alkanox soap followed by a hot water rinse, acetone and hexane rinses, and air dried.

Leachate Seepage Sampling

The grab-type surface leachate seepage sample was collected in containers of appropriate composition containing appropriate preservative for the parameters to be determined. The sample was handled with a new pair of disposable plastic surgical gloves and placed in appropriate containers (Section 7 of the Work/QA Project Plan).

Sediment Sampling

The sediment sample (collected from the leachate seepage sample location) was collected using a new disposable polyethylene scoop. Prior to mobilization in the field, the scoop was cleaned in the laboratory, in the same manner as the teflon bailers. The sample was handled with a new pair of disposable plastic surgical gloves and placed in appropriate containers (Section 7 of the Work/QA Project Plan).

Appendix 1.4.1-1

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) __________, ( ) __________
( ) __________, ( ) __________
( ) Author

Person Contacted: George Castelett Date: 5 May 85

Phone Number: ( ) 738-1343 Title: Foreman

Affiliation: Department of Public Works Type of Contact: Telephone

Address: Utica, New York
13501
Person Making Contact: E. Metzger

Communications Summary: Mr. Castelett was the foreman for one of the three daily shifts working at the City of Utica Dump. To the best of his knowledge the Dump opened approximately 50 years ago and only accepted municipal garbage. He said that other dumps in the area took the industrial waste.

Mr. Castelett said that the ash from the incinerator was dumped on site. The incinerator was closed ~1959-1960 and was demolished in 1970.

(see over for additional space)

Signature: Ellen B. Metzger

Appendix 1.4.1-2

HARDFILL DISPOSAL AREA

CITY OF UTICA
ONEIDA COUNTY
NEW YORK

ENGINEERING REPORT

OCTOBER 1984

Stetson·Dale
185 Genesee Street, Utica, NY 13501

UTICA HARDFILL

I. INTRODUCTION

A. Purpose

The purpose of this report is to present a plan for the operation of the City of Utica Hardfill Disposal Area pursuant to Title 6 NYCRR 360.2(b). The Consent Order of April 10, 1984, between the City of Utica and the New York State Department of Environmental Conservation requires that a Part 360 Permit be obtained. To meet the Part 360 conditions for the facility, existing site conditions and management practices will be improved.

B. Location and History

The Hardfill Disposal Area is located south of Incinerator Road in the City of Utica, County of Oneida, New York. The 42.5 acre site is bounded by the Barge Canal on the north and the Mohawk River wetland on the south. The site and location are shown on Sheet 1 "Site Map."

Prior to 1972, the general area was utilized as a sanitary landfill. From 1972 to the present, the site has been used for the deposition of hardfill. Only hardfill materials from the City of Utica are accepted at the site.

City sanitary refuse is picked up by contract with Mohawk Valley Sanitation and deposited in their permitted sanitary landfill in Frankfort.

III. SAMPLING PROGRAM

A. Surface Water

No surface water sampling was undertaken as part of this report.

Sampling results for the Mohawk River in the vicinity from the report "Water Quality Management Plan for Mohawk River Planning" have been included in Table 1.

B. Groundwater

A groundwater sampling program was undertaken to determine baseline water quality at the site.

Groundwater monitoring wells were installed in 4 soil borings. A typical well detail is shown on Figure 3.

Two sample sets were taken from the wells and an analysis to drinking water standards for the required parameters was performed.

The groundwater sampling results are included in Table 2.

Those parameters exceeding drinking water standards are listed in Table 3 with toxic limits and some common sources. None of the parameters approached toxic concentrations.

Groundwater movement patterns were determined using groundwater elevation measurements taken at the wells. The directions of flow are shown on Sheet 1. From these patterns, it is apparent that wells 3 and 4 are downgradient wells.

TABLE 1

RECEIVING STREAM QUALITY PARAMETERS IN MOHAWK RIVER AT UTICA VICINITY*

Parameter	Whitestown Mile 110.8	Utica Mile 105.2	Schuyler Mile 100.7	Units
BOD_5	2.5	3.8	3.8	mg/l
COD	13.8	15.0	16.8	mg/l
pH	7.8	7.4	7.6	units
DO	9.2	3.6	7.2	mg/l
F. Coliform	125,966.7	2,200,000.0	505,079.3	Colonies/100 ml
Fe	0.52	0.29	0.87	mg/l
Mn	0.06	0.06	0.09	mg/l
P	0.12	0.15	0.17	mg/l
RSS	13.0	174.0	157.0	mg/l
TSS	18.0	288.0	238.0	mg/l
VSS	5.0	114.0	81.0	mg/l
TEMP	54.7	66.2	54.4	o/f

*Values are calculated mean from the period 10/1/70 through 9/30/73

Data obtained from NYSDEC 303e "Water Quality Management Plan for Mohawk River Planning Areas 12-01 and 12-03"

TABLE 2

BASELINE GROUNDWATER QUALITY

PARAMETER*	JULY 17, 1984				August 13, 1984				DRINKING WATER STANDARD†
	B1	B2	B3	B4	B-1	B-2	B-3	B-4	
Silver	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.01	0.05
Aluminum	0.2	0.3	5.6	1.7	1.4	6.2	0.27	<0.1	---
Arsenic	0.006	0.015	0.040	0.022	0.005	0.003	0.005	0.001	0.025
Barium	0.7	0.9	1.2	2.6	---	---	---	---	1.0
Calcium	290	130	290	150	360	160	350	190	---
Cadmium	<0.005	0.006	0.009	0.006	0.007	0.005	0.007	0.010	0.01
Chromium	<0.05	0.07	0.13	0.08	<0.05	<0.05	<0.05	<0.05	0.05
Hexavalent chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05
Copper	<0.02	0.02	0.02	0.04	0.02	0.02	<0.02	1.13	1.0
Iron	28	64	59	35	74	37	38	130	0.3
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0092	<0.0002	0.0084	0.002
Manganese	5.1	3.6	2.8	0.49	0.29	0.45	0.85	0.04	0.3
Sodium	65	60	38	550	240	90	120	550	---
Lead	0.005	0.011	0.041	0.096	0.075	0.042	0.004	0.002	0.025
Selenium	<0.005	<0.005	0.029	0.007	<0.001	0.006	<0.001	<0.001	0.01
Zinc	0.07	4.7	0.37	0.7	0.05	0.21	0.01	0.13	5.0

*Expressed in mg/l unless otherwise indicated.

†EPA Interim Primary NYS Department of Health or DEC Groundwater Standard, whichever is more stringent.

TABLE 2

BASELINE GROUNDWATER QUALITY

PARAMETER	JULY 17, 1984				August 13, 1984				DRINKING WATER STANDARD
	B1	B2	B3	B4	B-1	B-2	B-3	B-4	
Alkalinity($CaCO_3$)	1225	810	1133	1362	1340	850	1310	1060	---
B.O.D.	28	46	84	110	25	30	44	41	---
C.O.D.	3670	2580	5490	3250	410	460	820	1980	---
Chloride	1.1	<0.20	<0.20	5.3	5.8	<0.2	<0.2	3.0	250.0
pH	7.63	7.70	7.76	8.01	6.45	6.44	6.44	6.83	6.5-8.5
Calcium hardness ($CaCO_3$)	1001	455	965	564	1229	428	1010	683	---
Ammonia (as N)	14	28	10	80	<0.05	<0.05	<0.05	<0.05	10.0
Nitrate (as N)	0.40	0.50	0.60	0.30	<0.1	<0.1	<0.1	3.0	10.0
Kjeldhl nitrogen	7	<0.05	1	5	15.0	65	17	37	---
Total phenols	0.0073	0.0111	0.0083	0.0059	0.0146	0.0350	0.0144	0.0430	0.001
Sulfate	110	380	2100	2700	300	260	1300	110	250.0
Conductance (uhmos/cm)	2200	1250	1500	3600	3400	1800	2500	5000	---
Total dissolved solids	1880	840	1440	2760	2160	880	1560	2720	---
MBA (surfactants)	0.019	0.012	0.016	0.013	0.031	0.032	0.055	0.050	---
T.O.C.	63	67	490	340	340	180	180	1340	---
Odor (S.M. 206)	35	100	200	200	70	50	200	200	---

he conductivity of potable waters in the U.S. ranges from 50 to 1500 uhmos/cm. Source "Standard Methods For Examination of astewater," 14th Edition, 1975.

hreshold odor numbers.

TABLE 2

BASELINE GROUNDWATER QUALITY

PARAMETER	JULY 17, 1984				August 13, 1984				DRINKING WATER STANDARD
	B1	B2	B3	B4	B-1	B-2	B-3	B-4	
	at pH7.6	at pH7.6	at pH7.6	at pH7.6	at pH7.6	at pH7.6	at pH7.6	at pH7.6	
Dominant wavelength	520nm	495nm	520nm	520nm	597nm	520nm	520nm	597nm	---
Hue	green	blue/ green	green	green	orange	green	green	orange	---
Purity, saturation	1%	7%	1%	1%	5%	1%	1%	5%	---
Luminance	98.9	89.1	98.2	97.7	97.7	98.8	99.1	98.1	---
Coliform*	---	---	---	---	260	272	392	200	1

*Expressed in counts per 100 ml

TABLE 3

GROUNDWATER TEST ANALYSIS

PARAMETER	WATER STD. (Mg/l)	NUMBER SAMPLES >STANDARD	MAX. CONCENTRATION (Mg/l)	NATURAL CONCENTRATIONS[1]		HUMAN[1] TOXIC LEVEL	SOME COMMON SOURCES[1]	
				SURFACE WATER (Mg/l)	GROUNDWATER (Mg/l)		INDUSTRIAL	OTHER
Arsenic	0.025	1	0.04	.01-0.1	ND[2]	5-50Mg	Laundry, Herbicides, Pesticides, Insecticides	
Barium	1.0	2	2.6	.01-.15	.0006-3.0	550-650Mg	Metal, Paint, Rubber, Dye Concrete	Rock Weathering
Chromium[3] (Total)	0.05	3	0.13	ND	ND	5Mg/l (Nausea)	Metal, Electroplating, Tanneries	
Iron	0.3	8	130	0.2-3.0	ND	None (Unpalatable at 0.1Mg/l)	Metal, Automotive, Mining	
Lead	0.025	4	0.096	0-0.04	0-0.04	10Mg/l (Over Several Weeks)	Plating, Paint, Petrochemical	
Manganese	0.3	7	5.1	1.0	ND	None (Unpalatable)	Metal, Glass, Ceramics, Dye	
Phenols	0.001	8	0.043	ND	ND	1500Mg	Petrochemical, Plastics	
Selenium	0.01	1	0.029	0.0002	ND	5-7Mg/l	Paint Glass, Electrical	
Sulfate	250	6	2700	ND	ND	ND	ND	
Coliform (Total)	1.0 Col/100ml	4 (all tested)	392	ND	ND	ND	ND	Natural, Urban, Agricultural Runoff

[1] Source: "Recommended Uniform Effluent Concentrations," USEPA, 1973.
[2] ND: No Data.
[3] Cr (HEX), All samples <0.01Mg/l, std. 0.05Mg/l.

EA SCIENCE AND TECHNOLOGY
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Appendix 1.4.1-3
1 of 1

COMMUNICATIONS RECORD FORM

Distribution: ( ) Utica Dump site file , ( ) ______
( ) ______ , ( ) ______
( ) Author

Person Contacted: Mr. Gus Detraglia Date: 19 April 1985

Phone Number: 315-735-0559 Title: Retired City of Utica Solid Waste Commissioner

Affiliation: City of Utica (when dumping occured at the old City dump) Type of Contact: personal

Address: ______ Person Making Contact: SHULTZ / Porter

Utica, NY 13501

Communications Summary:

The old city of Utica Dump disposal area operated as an open dump using the trench method (excavated material was used as cover along with demolition debris). An incinerator operated onsite from pre-1932 until the early 1960's. However, when the incinerator was inoperative during periods, eg. for maintenance, the material to be incinerated went directly to the dump. The dump was closed in the early 1970's, and was covered with soil.

The land immediately west (adjacent) of the Utica Dump was used as the Lainos Dump. Cover material for the Lainos Dump was excavated just to the west in an area now called the Hardfill Landfill (active City of Utica hardfill material disposal area).

(see over for additional space)

Signature:

Appendix 1.4.1-4

EA SCIENCE AND
TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) ____________________, ( ) ____________________
( ) ____________________, ( ) ____________________
( ) Author

Person Contacted: Mr. Edward McCarthy   Date: 20 April 1987

Phone Number: (315) 738-1343   Title: Mechanic

Affiliation: Utica DPW   Type of Contact: Telephone

Address: Utica New York
13501   Person Making Contact: Metzger

Communications Summary: Mr. McCarthy has worked for the Utica DPW for 27 years, several of which he was a mechanic at the City of Utica Dump. His duties involved maintaining the heavy equipment used at the dump.

Mr. McCarthy indicated that the waste material was basically municipal waste. Although he believed several industries used the dump, he did not recall ever seeing waste that might be considered hazardous. The waste materials were covered with fill on a daily basis. The only drums he recalls seeing, were empty.

He did recall several fires at the Dump and he believes they were a result of spontaneous combustion. He does not recall anything about exploding drums.

He also indicated that the entrance has been guarded since 1960 so there was little chance of illegal dumping.

(see over for additional space)

Signature: Ellen B. Metzger

Appendix 1.4.1-5

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) ____________, ( ) ____________
( ) ____________, ( ) ____________
( ) Author

Person Contacted: Mr. Anthony Greco **Date:** 13 April 1987

Phone Number: (315) 738-1313 **Title:** Heavy Equipment Operator

Affiliation: Department of Public Works **Type of Contact:** Phone

Address: Utica, New York
13501

Person Making Contact: Ellen Metzger

Communications Summary: Mr Greco used to drive a bulldozer at the old City of Utica Dump, but was more involved with road clearing than landfilling. He began working at the Dump in 1960 and by then the incinerator was closed down, so he was unable to detail its use. He did recall fires at the landfill due to spontaneous combustion. He did however, recall exploding drums.

As to the contents of the dump, he did not know of specific industries that disposed waste in the dump. He indicated that several different trucking firms were contracted to haul waste, and ~~know~~ no one knew the contents of each truck that came in.

(see over for additional space)

Signature: Ellen B. Metzger

1.4.1-6

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) ____________, ( ) ____________

( ) ____________, ( ) ____________

( ) Author

Person Contacted: Clyde Rotash **Date:** 24 April 1987

Phone Number: (315)738-1343 **Title:** Heavy Equipment Operator

Affiliation: Department of Public Works **Type of Contact:** Telephone

Address: Utica, New York 13501 **Person Making Contact:** E. Metzger

Communications Summary: Clyde began working at the Dump in 1969 as a bulldozer operator. He covered the waste on a regular basis and has no recollection of toxic or hazardous waste. He did say, however, that back then everything was dumped and no one ever cared. He did recall many fires but none caused by exploding drums. He did not recall any of the early history of the dump but suggested I'd call the old foreman.

Clyde did say that 3 or 4 months ago the NYSDEC (he thought) brought in some containers and shot at them, causing the contents to explode and burn. This was done near one of the monitoring wells (the upgradient wells UD-1 & UD-1A).

(see over for additional space)

Signature: Ken B. Metzger

Appendix 14.1-7

NUS CORPORATION

POTENTIAL HAZARDOUS WASTE SITE

EXECUTIVE SUMMARY

City of Utica Dump Site Name	NYD980509343 EPA Site ID Number
Incinerator Road Address	02-8303-64 TDD Number
Utica, NY 13501	

Date of Site Visit: 4/27/83

SITE DESCRIPTION The site was used by the City of Utica as a municipal landfill until the early 1970's. Most of the industries in Utica dumped wastes on this site, and allegedly included: Bonide Chemical, Beaunit Fibers, Savage Arms, Univac, General Electric, Kelsey Hayes, and Foster Paper. Deteriorating drums were observed during the site inspection. Two of these drums contained an unidentified white powder.

PRIORITY FOR FURTHER ACTION: High X Medium ___ Low ___

RECOMMENDATIONS

Sampling of drums, leachate, soil, and groundwater is recommended. In addition, installation of a secure fence and gate is recommended to prevent trespassing and illegal dumping.

Prepared by: Alan G. Woodard of NUS Corporation Date: May 3, 1983

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): City of Utica Dump

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Incinerator Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Utica	NY	13501	Oneida	065	31

09 COORDINATES LATITUDE 43° 06' 25".N LONGITUDE 075° 11' 26".W

10 DIRECTIONS TO SITE (Starting from nearest public road)
Thruway to Exit 31, south on Genessee Street to Wurz Avenue. East on Wurz to Incinerator Road. East on Incinerator Road to end of road.

III. RESPONSIBLE PARTIES

01 OWNER (If known): City of Utica

02 STREET (Business, mailing, residential): 1 Kennedy Plaza

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Utica	NY	13502	(315) 798-3220

07 OPERATOR (If known and different from owner):

08 STREET (Business, mailing, residential):

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

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 103 c) DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE 04 / 27 / 83 (MONTH DAY YEAR)

BY (Check all that apply)
☐ A. EPA ☒ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER ____________ (Specify)

CONTRACTOR NAME(S): ____________

02 SITE STATUS (Check one)
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
1956 (BEGINNING YEAR) | Early 1970's (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
The site was used by the City of Utica as a municipal landfill until the early 1970's. Most of the industries in Utica dumped wastes on this site, and allegedly included: Bonide Chemical, Beaunit Fibers, Savage Arms, Univac, General Electric, Kelsey Hayes, and Foster Paper. Deteriorating drums were observed during the site inspection, 2 of the drums contained a white powder.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
The Erie Canal and the Mohawk River border the site, and the City of Utica is approximately 0.5 miles away. The site is not restricted and unauthorized dumping was observed during the inspection. A potential of hazard to the environment and/or population exists.

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) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Mark Haulenbeek	EPA Region II Environmental Services Division	(201) 321-6685

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Alan G. Woodard	EPA	FIT II NUS Corporation	(201) 225-6160	04 / 27 / 83 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☒ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER ________ *(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 Unknown

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

Unknown

III. WASTE TYPE Unknown

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS *(See Appendix for CAS Numbers)* Not Applicable

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

Interview with Seth Cornish, Commissioner, Public Works (315) 798-3250

Interview with Morton F. Tillson, Former Equipt. Operator (315) 798-3250

Site Inspection

EPA

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

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D980509343

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
02 ☐ OBSERVED (DATE: ______)
☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION

Chemical and other industrial wastes have allegedly been deposited in this landfill in the past. During the site inspection, drums containing a white powder were observed. Other drums were also observed; contents unknown. Potential for groundwater contamination exists from deteriorating drums.

01 ☒ B. SURFACE WATER CONTAMINATION
02 ☐ OBSERVED (DATE: ______)
☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION

The Mohawk River borders the property on the southern side, leachate has allegedly been observed draining into the river in the past. The Erie Canal borders the northern section of the site. Waste materials were allegedly dumped in the canal in the 1950's. A potential exists for contamination.

01 ☐ C. CONTAMINATION OF AIR
02 ☐ OBSERVED (DATE: ______)
☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION

No Potential Exists.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
02 ☐ OBSERVED (DATE: 1968-1970)
☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1400
04 NARRATIVE DESCRIPTION

It is alleged that fires have occurred on-site in the past and that some of the fires were caused by exploding drums. On one occasion, an underground fire was alleged to have burned for 3 months. The potential for similar incidents exists.

01 ☒ E. DIRECT CONTACT
02 ☐ OBSERVED (DATE: ______)
☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000
04 NARRATIVE DESCRIPTION

The site is easily accessible by the general public. The entrance gate is unlocked, and no security force is in effect. Direct contact with waste materials stored or buried on the site is a possibility.

01 ☒ F. CONTAMINATION OF SOIL
02 ☒ OBSERVED (DATE: 4/27/83)
POTENTIAL ALLEGED
03 AREA POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION

Disposal of chemical wastes in past years has resulted in contamination of the soils. Leachate was observed during the site inspection.

01 ☐ G. DRINKING WATER CONTAMINATION
02 ☐ OBSERVED (DATE: ______)
☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION

No Potential Exists.

01 ☐ H. WORKER EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: ______)
☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION

No Potential Exists.

01 ☒ I. POPULATION EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: ______)
☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000
04 NARRATIVE DESCRIPTION

The site is located approximately 0.25 miles from the City of Utica. Adjacent property is used by the city as a landfill. Unauthorized dumping has occurred on the site. Unstable containment of waste products stored in drums and erosion of cover soils at the site may result in population exposure and injury.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

Drums were observed on-site. Materials leaking from the drums, if it occurs, could damage the local flora.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

Drums were observed on-site. Materials leaking from the drums and leachate from the landfill could be harmful to local fauna.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

Deterioration of drums disposed on-site, and leaching may result in contaminants entering both the terrestrial and aquatic food chains.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/runoff/standing liquids/leaking drums)* — 02 ☒ OBSERVED (DATE: 4/27/83) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 14,000

04 NARRATIVE DESCRIPTION

Many drums dumped on-site were not buried. Drums were observed laying on their sides throughout the site during the inspection. Containment of wastes is unstable, and the potential for leaking drums exists.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

No Potential Exists.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

No Potential Exists.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☒ OBSERVED (DATE: 4/27/83) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

The site entrance gate is not locked. No security force is in effect. Illegal/unauthorized dumping has occurred in the recent past. The potential for further unauthorized dumping exists.

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

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: ______

IV. COMMENTS

None

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

Site Inspection
EPA Files, Edison, NJ

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	0980509343

II. SITE NAME AND LOCATION

01 SITE NAME *(Legal, common, or descriptive name of site)*	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
City of Utica Dump	Incinerator Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Utica	NY	13501	Oneida	065	26

09 COORDINATES LATITUDE 43°06" 25".N LONGITUDE 075° 11' 25."N

10 TYPE OF OWNERSHIP *(Check one)*
☐ A. PRIVATE ☐ B. FEDERAL ________ ☐ C. STATE ☐ D. COUNTY ☒ E. MUNICIPAL
☐ F. OTHER ________ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION 04/27/83 (MONTH DAY YEAR)

02 SITE STATUS ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION 1956 / 1970's early (BEGINNING YEAR / ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION *(Check all that apply)*
☐ A. EPA ☒ B. EPA CONTRACTOR NUS Corporation *(Name of firm)* ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ________ *(Name of firm)*
☐ E. STATE ☐ F. STATE CONTRACTOR ________ *(Name of firm)* ☐ G. OTHER ________ *(Specify)*

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Alan G. Woodard	Aquatic Toxicologist	NUS Corp.	201)225-6160

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Colleen Ranney	Public Health Specialist	NUS Corp.	201)225-6160
Trudi Fancher	Environmental Scientist	NUS Corp.	(201) 225-6160
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Seth Cornish	Commissioner, Public Works	11 Wurz Ave., Utica, NY 13502	315)798-3250
Morton F. Tillson	Former Equipt. Operator	11 Wurz Ave., Utica, NY	(315) 798-3250
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY *(Check one)*	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	1:55 p.m.	Sunny, 60°F

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF *(Agency/Organization)*	03 TELEPHONE NO.
Mark Haulenbeek	EPA Region II, Environmental Serv. Div.	201) 321-6685

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Alan G. Woodard	EPA	FIT II NUS Corp.	201) 225-6160	4/27/83 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

☒ A. SOLID
☐ B. POWDER, FINES
☒ C. SLUDGE
☐ D. OTHER ______ (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 Unknown

03 WASTE CHARACTERISTICS (Check all that apply) Unknown

☐ 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 Unknown

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers) Not applicable

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

Interview with Seth Cornish, Commissioner, PublicWorks (315) 798-3250
Interview with Morton F. Tillson, Former Equipt. Operator (315) 798-3250
Site Inspection
Comments: Information as to type and amount of hazardous materials disposed in landfill is unavailable. Industries in this area that probably used this dump included: Bonide Chemical, Beaunit Fibers, Savage Arms, Univac, General Electric, Kelsey Hayes, and

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE NY
02 SITE NUMBER D980509343

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: Unknown
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Chemical and other industrial wastes have allegedly been deposited in this landfill in the past. During the site inspection, drums containing a white powder were observed. Other drums were also observed; contents unknown. Potential for groundwater contamination exists from deteriorating drums.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: Unknown
02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

The Mohawk River borders the property on the southern side, leachate has allegedly been observed draining into the river in the past. The Erie Canal borders the northern section of the site. Waste materials were allegedly dumped in the canal in the 1950's. A potential exists for contamination.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential exists.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 1400
02 ☐ OBSERVED (DATE: 1968-1970) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

It is alleged that fires have occurred on-site in the past and that some of the fires were caused by exploding drums. On one occasion, an underground fire was alleged to have burned for 3 months. The potential for similar incidents exists.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 10,000
02 ☒ OBSERVED (DATE: 4/27/83) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The site is easily accessible by the general public. The entrance gate is unlocked, and no security force is in effect. Direct contact with waste materials stored or buried on the site is a possibility.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: Unknown (Acres)
02 ☒ OBSERVED (DATE: 4/27/83) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Disposal of chemical wastes in past years has resulted in contamination of the soils. Leachate was observed during the site inspection.

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential exists.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential exists.

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 10,000
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The site is located approximately 0.25 miles from the City of Utica. Adjacent property is used by the city as a landfill. Unauthorized dumping has occurred on the site. Unstable containment of waste products stored in drums and erosion of cover soils at the site may result in population exposure and injury.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D980509343

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Drums were observed on-site. Materials leaking from the drums, if it occurs, could damage the local flora.

01 ☒ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

Drums were observed on-site. Materials leaking from the drums and leachate from the landfill could be harmful to local fauna.

01 ☒ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Deterioration of drums disposed on-site, and leaching may result in contaminants entering both the terrestrial and aquatic food chains.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) 02 ☒ OBSERVED (DATE: 4/27/83) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 14,000
04 NARRATIVE DESCRIPTION

Many drums dumped on-site were not buried. Drums were observed laying on their sides throughout the site during the inspection. Containment of wastes is unstable, and the potential for leaking drums exists.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE: ____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential exists.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE: ____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential exists.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☒ OBSERVED (DATE: 4/27/83) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The site entrance gate is not locked. No security force is in effect. Illegal/unauthorized dumping has occurred in the recent past. The potential for further unauthorized dumping exists.

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

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: ____

IV. COMMENTS

None

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

Site Inspection
EPA Files, Edison, NJ

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE: NY
02 SITE NUMBER: D980509343

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	40-50	dr
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	Unknown	
☐ G. LANDFARM		
☒ H. OPEN DUMP	Unknown	
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

☐ A. INCENERATION
☐ B. UNDERGROUND INJECTION
☐ C. CHEMICAL/PHYSICAL
☐ D. BIOLOGICAL
☐ E. WASTE OIL PROCESSING
☐ F. SOLVENT RECOVERY
☐ G. OTHER RECYCLING/RECOVERY
☐ H. OTHER (Specify)

05 OTHER

☐ A. BUILDINGS ON SITE

None

06 AREA OF SITE

100 (Acres)

07 COMMENTS

Due to the size of the site and abnormally high readings from air quality instruments, the southeastern section of the site could not be investigated safely. Drums, if any, and the condition of that portion of the site was not recorded.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Drums observed during the site inspection appeared to be rusted and pitted. It is unknown if the drums contained hazardous materials, although at least two were observed to contain a white powder. The southeastern section of the site was not observed.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Much waste material on the site was not buried.There is no fence on the site and a security force does not exist.

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

Site Inspection

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE NY
02 SITE NUMBER D980509343

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

	ENDANGERED	AFFECTED	MONITORED
COMMUNITY	A. ☐	B. ☐	C. ☒
NON-COMMUNITY	D. ☐	E. ☐	F. ☒

03 DISTANCE TO SITE

A. 10 (mi)
B. 5 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING
☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER None

03 DISTANCE TO NEAREST DRINKING WATER WELL 5 (mi)

04 DEPTH TO GROUNDWATER 1 (ft)

05 DIRECTION OF GROUNDWATER FLOW Unknown

06 DEPTH TO AQUIFER OF CONCERN 1 (ft)

07 POTENTIAL YIELD OF AQUIFER Unknown (gpd)

08 SOLE SOURCE AQUIFER ☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

Not applicable

10 RECHARGE AREA ☒ YES ☐ NO
COMMENTS Mohawk River is effluent and influent depending on fluctuation in groundwater table.

11 DISCHARGE AREA ☒ YES ☐ NO
COMMENTS Mohawk River is effluent and influent depending on fluctuation in groundwater table.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Mohawk River	☒	Adjacent (mi)
Erie Canal	☒	Adjacent (mi)
Starch Factory Creek	☒	0.25 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE A. 14,000 NO. OF PERSONS
TWO (2) MILES OF SITE B. 33,000 NO. OF PERSONS
THREE (3) MILES OF SITE C. 75,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 3,700

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site borders the Erie Canal and is separated by the Mohawk River from the city of Utica, NY. The area to the south and west is densely populated. The population to the east is rural and to the north it is suburban.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D980509343

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE *(Check one)*

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK *(Check one)*

☒ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

Increase in fracturing may increase permeability.

03 DEPTH TO BEDROCK: 6 (ft)
04 DEPTH OF CONTAMINATED SOIL ZONE: Unknown (ft)
05 SOIL pH: 6.1-6.5

06 NET PRECIPITATION: 25 (in)
07 ONE YEAR 24 HOUR RAINFALL: 3.5 (in)
08 SLOPE
SITE SLOPE: level %
DIRECTION OF SITE SLOPE: level
TERRAIN AVERAGE SLOPE: level %

09 FLOOD POTENTIAL
SITE IS IN 10 YEAR FLOODPLAIN

10
☒ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS *(5 acre minimum)*
ESTUARINE A. 10 (mi)
OTHER B. 0.25 (mi)

12 DISTANCE TO CRITICAL HABITAT *(of endangered species)*
>3 (mi)
ENDANGERED SPECIES:

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. 0.25 (mi)	B. 0.25 (mi)	C. 3 (mi)	D. 2 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is located at the end of Incinerator Road and is bordered by the Erie Canal on the northern side and the Mohawk River to the east and south. Adjacent property to the west is an active landfill utilized by the city of Utica. The City of Utica is located approximately 0.25 miles south of the site.

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

U.S. Geological Survey Topography Map - 1955; Utica East, NY Quadrangle
Soil Survey of Herkimer County, New York; United States Dept. of Agriculture
Soil Conservation Service, 1975.
Site Inspection

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D980509343

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO No Samples Taken	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air Quality	Organic vapor analyzer in use on site; readings in excess of 100 ppm were recorded in at least three areas of the site.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NUS Corporation, Edison, NJ (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Site location map and site map attached as Figures 1 and 2.

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None

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

Site Inspection

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION
01 STATE NY
02 SITE NUMBER D980509343

II. CURRENT OWNER(S)

01 NAME City of Utica
02 D+B NUMBER None
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1 Kennedy Plaza, City Hall
04 SIC CODE None
05 CITY Utica
06 STATE NY
07 ZIP CODE 13502

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

PARENT COMPANY (If applicable)

08 NAME Not applicable
09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

08 NAME
09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

08 NAME
09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

08 NAME
09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)
11 SIC CODE
12 CITY
13 STATE
14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME Edward V. Donahue
02 D+B NUMBER None
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown
04 SIC CODE None
05 CITY Utica
06 STATE NY
07 ZIP CODE 13502

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME Not applicable
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

01 NAME
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

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

Interview with Seth Cornish, Commissioner, Public Works (315) 798-3250
Interview with Morton F. Tillson, Former Equipment Operator (315) 798-3250
Interview with Victoria Parritano, Tax Assessor's Office (315) 798-3220

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	Not applicable
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	
08 YEARS OF OPERATION	
09 NAME OF OWNER	

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	Not applicable
11 D+B NUMBER	
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	
13 SIC CODE	
14 CITY	
15 STATE	
16 ZIP CODE	

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	City of Utica		
02 D+B NUMBER	None		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	1 Kennedy Plaza, City Hall		
04 SIC CODE	None		
05 CITY	Utica		
06 STATE	NY		
07 ZIP CODE	13502		
08 YEARS OF OPERATION			
09 NAME OF OWNER DURING THIS PERIOD			

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	Not applicable		
11 D+B NUMBER			
12 STREET ADDRESS (P.O. Box, RFD #, etc.)			
13 SIC CODE			
14 CITY			
15 STATE			
16 ZIP CODE			

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

Interview with Seth Cornish, Commissioner, Public Works (315) 798-3250
Interview with Morton F. Tillson, Former Equipment Operator (315) 798-3250

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980509343

II. ON-SITE GENERATOR

01 NAME: Not applicable
02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE
05 CITY
06 STATE
07 ZIP CODE

III. OFF-SITE GENERATOR(S) See comments below:

01 NAME	01 NAME
02 D+B NUMBER	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE	04 SIC CODE
05 CITY	05 CITY
06 STATE	06 STATE
07 ZIP CODE	07 ZIP CODE
01 NAME	01 NAME
02 D+B NUMBER	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE	04 SIC CODE
05 CITY	05 CITY
06 STATE	06 STATE
07 ZIP CODE	07 ZIP CODE

IV. TRANSPORTER(S) See Comments Below:

01 NAME	01 NAME
02 D+B NUMBER	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE	04 SIC CODE
05 CITY	05 CITY
06 STATE	06 STATE
07 ZIP CODE	07 ZIP CODE
01 NAME	01 NAME
02 D+B NUMBER	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	03 STREET ADDRESS (P.O. Box, RFD #, etc.)
04 SIC CODE	04 SIC CODE
05 CITY	05 CITY
06 STATE	06 STATE
07 ZIP CODE	07 ZIP CODE

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

Interview with Seth Cornish, Commissioner, Public Works (315) 798-3250
Interview with Morton F. Tillson, Former Equipment Operator (315) 798-3250
Interview with John Zegarelli, City Engineer (315) 798-3270

Comments:
Most industries located in the city of Utica allegedly disposed of wastes on this site in the past, including: Bonide Chemical, Beaunit Fibers, Savage Arms, Univac, General Electric, Kelsey Hayes and Foster Paper

Transporter Comments:
Mohawk Valley Sanitation, Carucci, Inc., B and B Sanitation, The City of Utica and Industries located in the area transported wastes to the landfill.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE NY

02 SITE NUMBER D980509343

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ D. SPILLED MATERIAL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ E. CONTAMINATED SOIL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ F. WASTE REPACKAGED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ G. WASTE DISPOSED ELSEWHERE 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ H. ON SITE BURIAL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ I. IN SITU CHEMICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ J. IN SITU BIOLOGICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ K. IN SITU PHYSICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ L. ENCAPSULATION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ M. EMERGENCY WASTE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ N. CUTOFF WALLS 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ P. CUTOFF TRENCHES/SUMP 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ Q. SUBSURFACE CUTOFF WALL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE NY
02 SITE NUMBER D980509343

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ S. CAPPING/COVERING 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ T. BULK TANKAGE REPAIRED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
Not Applicable

01 ☐ U. GROUT CURTAIN CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
Not Applicable

01 ☐ V. BOTTOM SEALED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ W. GAS CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ X. FIRE CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ Y. LEACHATE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ Z. AREA EVACUATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ 1. ACCESS TO SITE RESTRICTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ 2. POPULATION RELOCATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No Previous History

01 ☐ 3. OTHER REMEDIAL ACTIVITIES 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
None

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

Interview with Seth Cornish, Commissioner, Public Works (315) 798-3250
Interview with Morton F. Tillson, Former Equipment Operator
(315) 798-3250

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D980509343

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

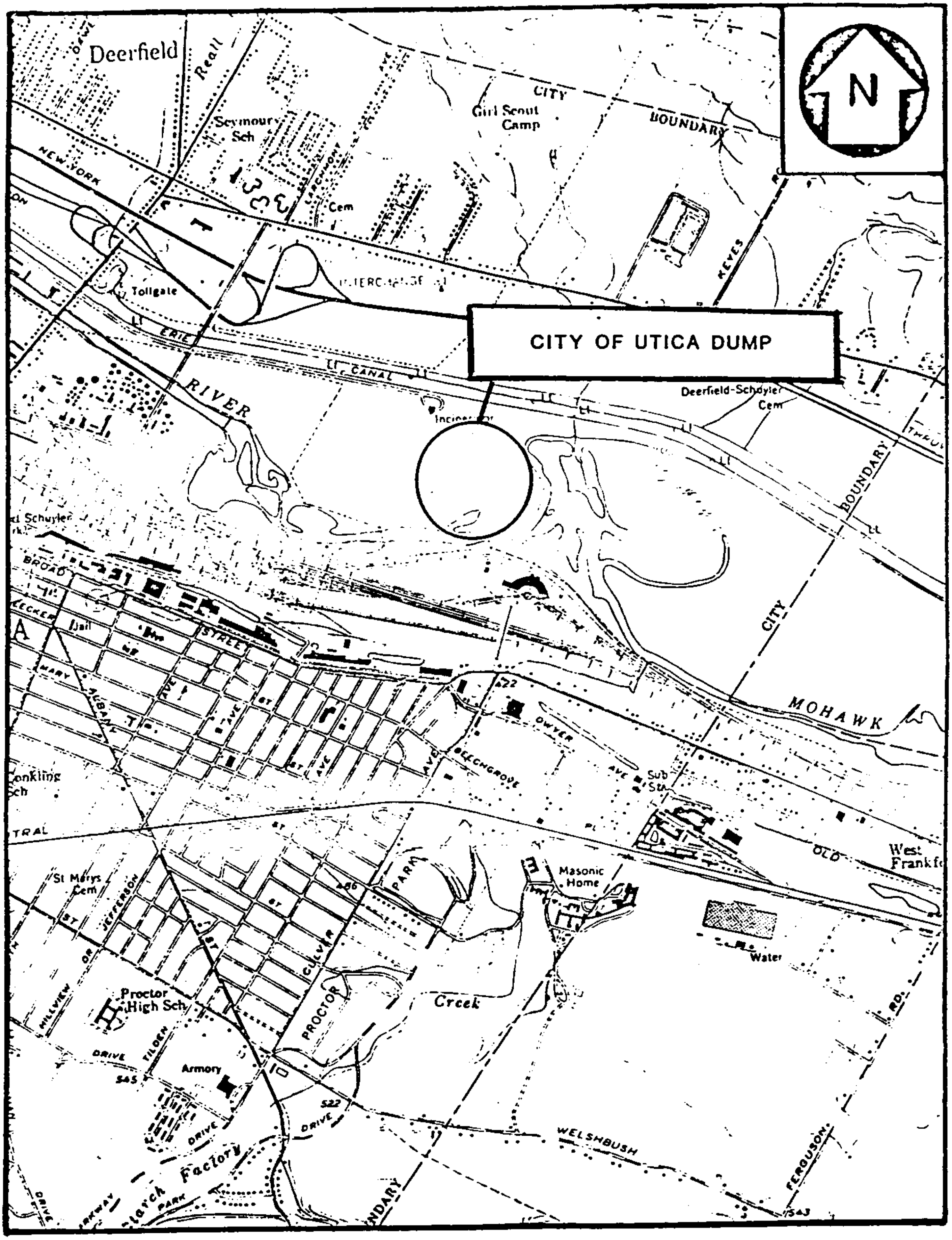
02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

No Previous History

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

Interview with Seth Cornish, Commissioner, Public Works, (315) 798-3250
Interview with Morton F. Tillson, Former Equipment Operator (315) 798-3250

SF



CITY OF UTICA DUMP

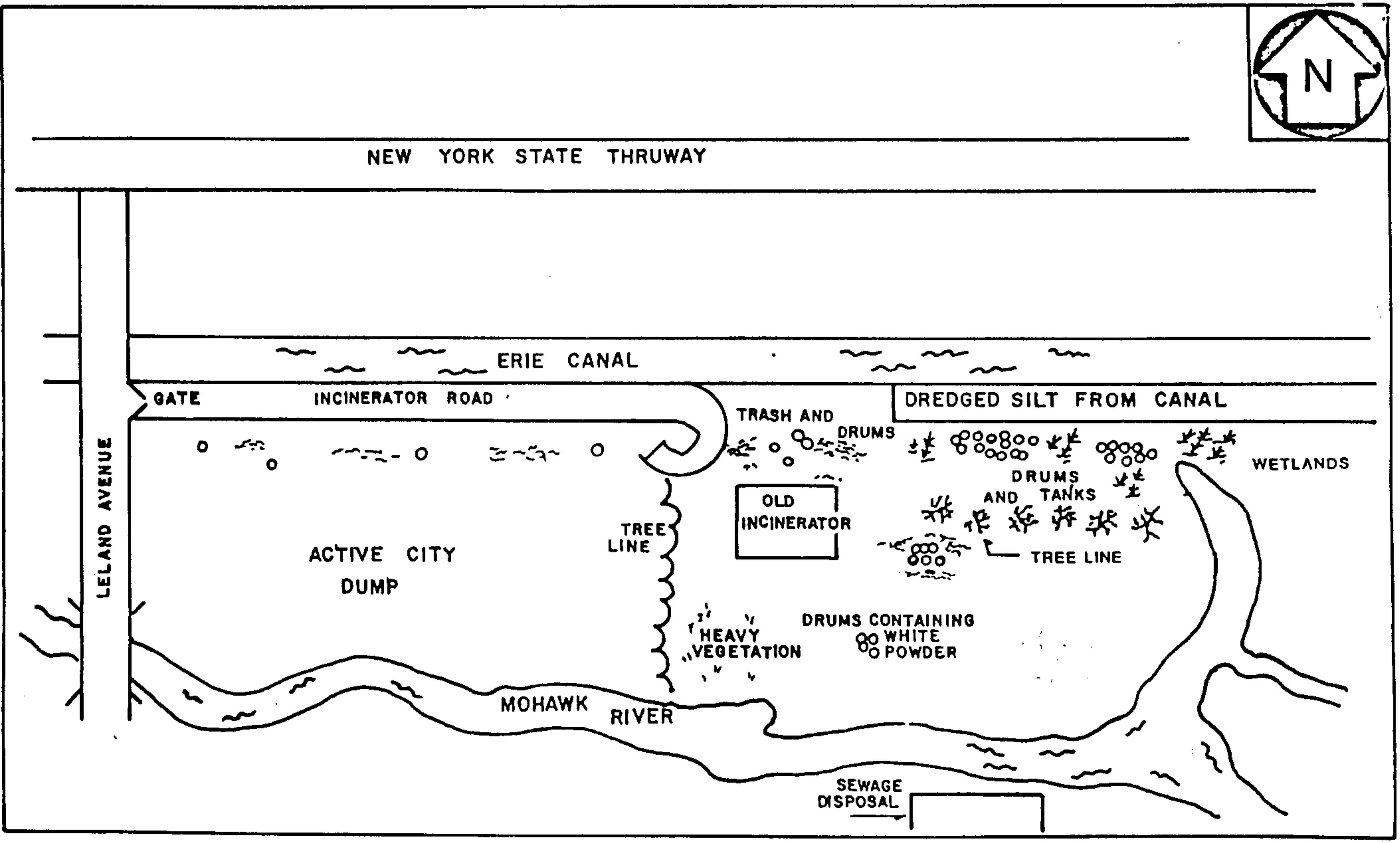
UTICA, N.Y.

SITE LOCATION MAP

1000 0 1000 2000ft

FIGURE 1

NUS CORPORATION



CITY OF UTICA DUMP

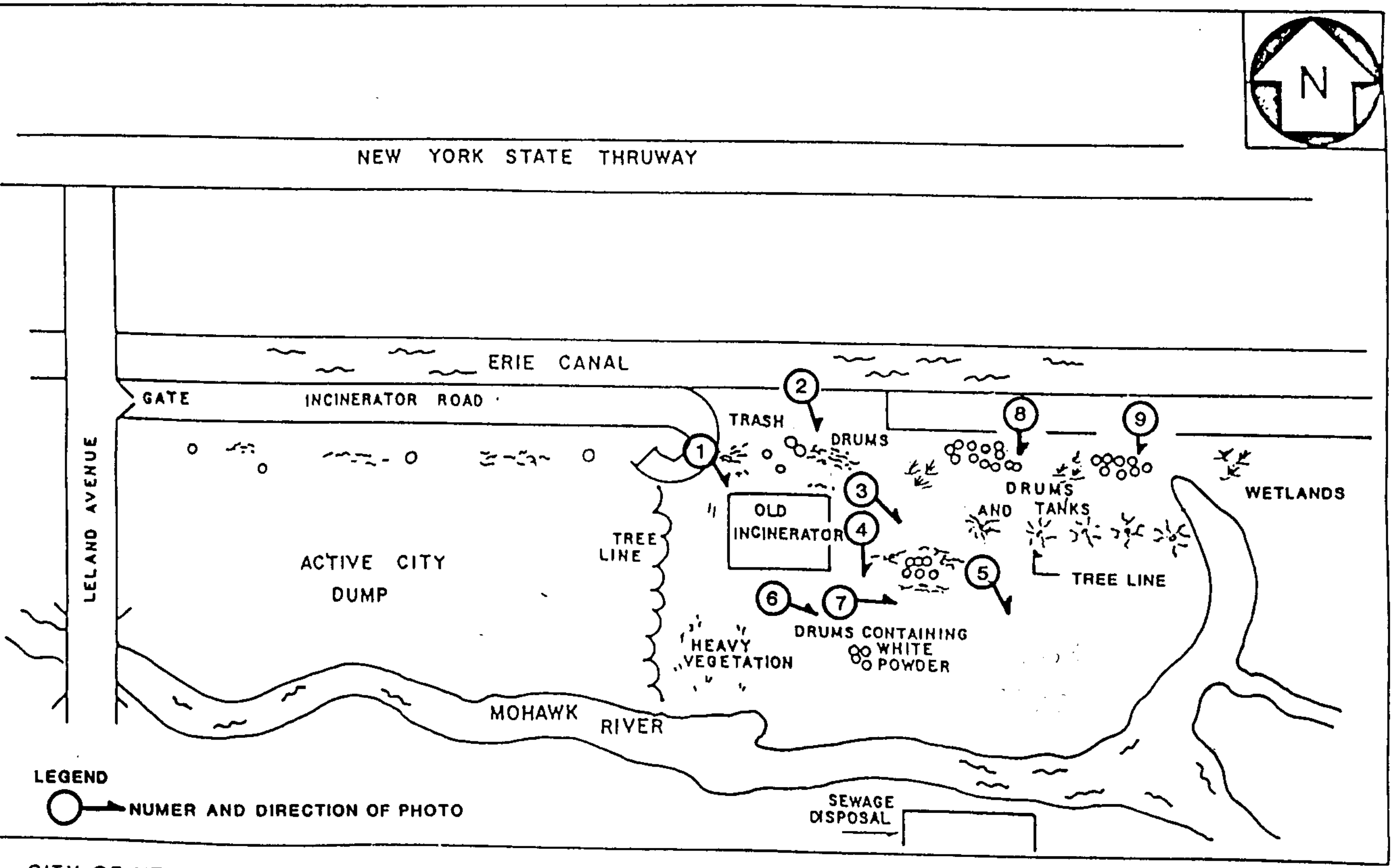
UTICA , N.Y.

SITE MAP

(NOT TO SCALE)

FIGURE 2

NUS CORPORATION



CITY OF UTICA DUMP

UTICA , N.Y.

PHOTO LOCATION MAP

(NOT TO SCALE)

FIGURE 3

NUS

PHOTOGRAPH LOG

CITY OF UTICA DUMP

Utica, NY

April 27, 1983

1. View of old incinerator.

2. Looking southeast from access road.

3. Looking southeast from access road, showing drums in background.

4. Looking south across landfill.

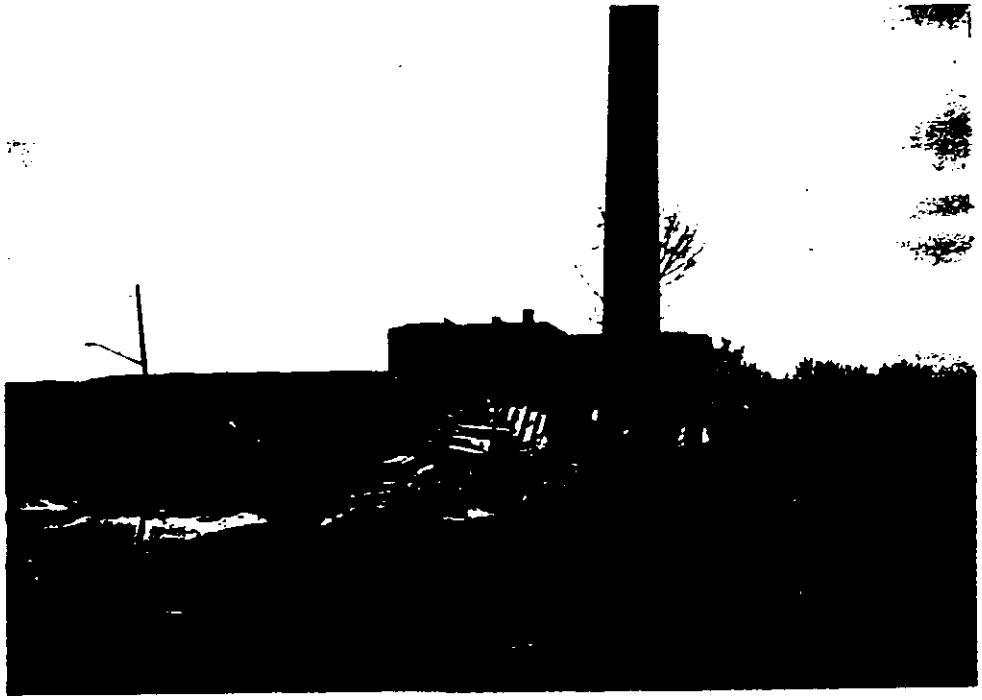
5. Looking south, showing scattered drums in background.

6. Looking south across landfill, showing drums in background.

7. East view across landfill.

8. View from towpath, looking south.

9. View from towpath, looking south and showing scattered drums in background.



1. View of old incinerator.

CITY OF UTICA DUMP, Utica, NY, April 27, 1983

2. Looking southeast from access road.

3. Looking southeast from access road, showing drums in background.

CITY OF UTICA DUMP, Utica, NY, April 27, 1983

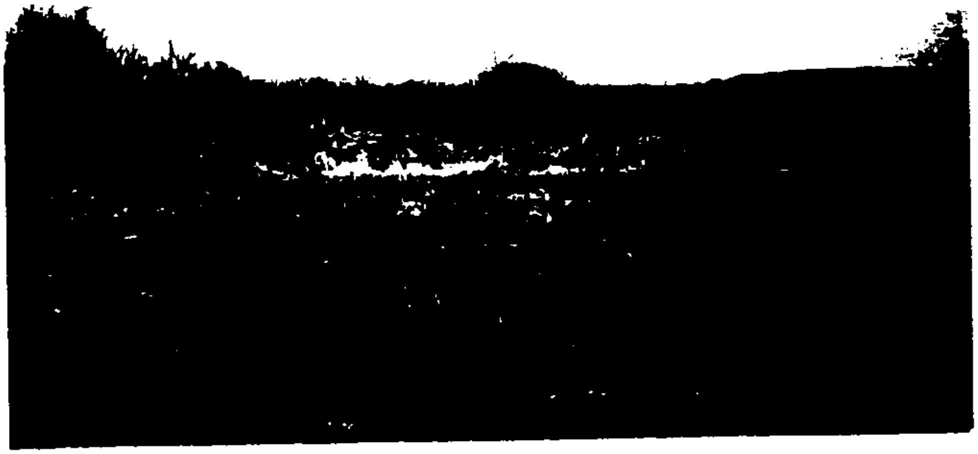
4. Looking south across landfill.

5. Looking south, showing scattered drums in background.

CITY OF UTICA DUMP, Utica, NY, April 27, 1983

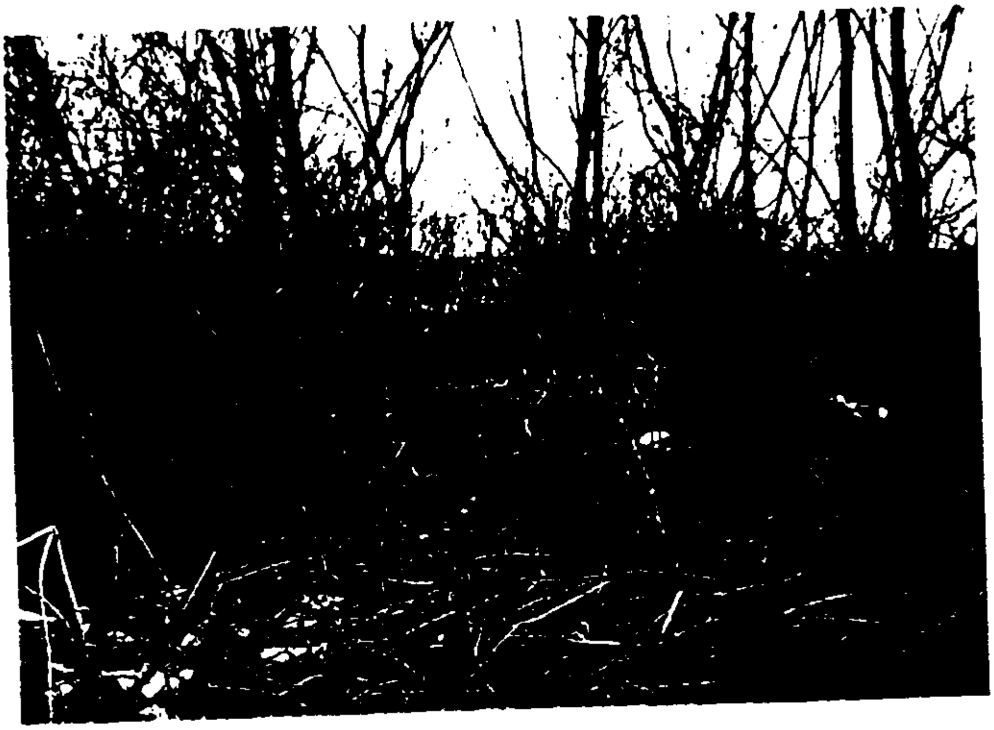
NUS CORPORATION

6. Looking south across landfill, showing drums in background.



7. East view across landfill.

CITY OF UTICA DUMP, Utica, NY, April 27, 1983



8. View from towpath, looking south.

9. View from towpath, looking south and showing scattered drums in background.

RECEIVED 985 *Appendix 14.1-8*

INTERVIEW ACKNOWLEDGEMENT FORM

Site Name: City of Utica Dump

I.D. Number: 633015

Person Contacted: Ms. Pat Leabert

Date: 13 September 1985

Title: Environmental Specialist

Affiliation: General Electric

Phone No.: (315) 793-7509

Address: General Electric
Aerospace Electronic Systems Dept.
French Road Mail Drop 313
Utica, New York 13503

Persons Making Contact:
EA Representatives:
Ellen Bidwell

Type of Contact: Telephone

Interview Summary:

Ms. Leabert indicated that only industrial wastes were disposed of at the Old City of Utica Dump. All hazardous waste was hauled to authorized landfills. The Aerospace Electronic Systems Department is mostly contracted to the United States Department of Defense. Any leftover metals and other valuables were sent to be salvaged, so mostly office type refuse was generated. Possibly, paper and metal containers were disposed of but all would have been emptied. Ms. Leabert stated that General Electric began drumming their toxic waste during the 1970s and sent them to authorized sites. Any contaminants in drums or otherwise, therefore, could not be from the General Electric plant.

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

Signature: *Ms. P.S. Lekert*

Date: *10-26-85*

RECEIVED SEP 2[illegible] 1985 Appendix 1.4.1-9

INTERVIEW ACKNOWLEDGEMENT FORM

Site Name: City of Utica Dump

I.D. Number: 633015

Person Contacted: Mr. Eugene Finnegan

Date: 12 September 1985

Title: Vice President

Affiliation: Employed by present owner of Foster Paper Company

Phone No.: (315) 733-2301

Address: 2160 Erie Street
Utica, New York 13502

Persons Making Contact:
EA Representatives:
Ellen Bidwell

Type of Contact: Telephone

Interview Summary:

Mr. Finnegan stated that the Foster Paper Company changed management one year ago. The company, however, uses the same practices and procedures to make its paper, paperboard, and specialty paper items, as when it disposed of waste in the old City of Utica Dump. Mr. Finnegan indicated that no chemicals, liquid or dry, were used in the process to convert raw materials into pulp. All waste paper products are recycled through the system, and no known hazardous waste was sent to the dump.

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

Foster Paper Co. has no disposable waste in any shape or form related to our manufacturing.

Signature: Eugene X Finnegan

Date: Sept 30, 1985

Appendix 1.4.1-10

RECEIVED OCT 2 1985

INTERVIEW ACKNOWLEDGEMENT FORM

Site Name: Old City of Utica Dump

I.D. Number: 633015

Person Contacted: Mr. Edward Stark

Date: 13 September 1985

Title: Vice President of Engineering

Affiliation: Retired Employee of Savage Arms

Phone No.: (413) 525-7324

Address: Rural Lane 74
East Longmeadow, Massachusetts 01028

Persons Making Contact:
EA Representatives:
Ellen Bidwell

Type of Contact: Telephone

Interview Summary:

1955

Mr. Stark indicated that Savage Arms, manufacturer of firearms and ammunition, operated in the City of Utica approximately 1900 to 1960. Raw materials necessary in production were all bought and not made on the premises. Possible hazardous wastes used or generated by Savage Arms are caustic sodas, solvents, and sludges. Mr. Stark did not know what methods they used to dispose of these materials or where they took them. Savage Arms bought raw materials in 55-gallon drums and Mr. Stark recalls seeing drums on the property but did not know if any drumming of liquid waste took place. The Savage Arms plant in the City of Utica is now an extensive shopping center.

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

Signature: Edward M Stark

Date: Sept 29, 1985

RECEIVED

Appendix 1.4.1-11

SPERRY

SPERRY CORPORATION
COMPUTER SYSTEMS
P.O. BOX 500
BLUE BELL, PENNSYLVANIA 19424-0001
TELEPHONE (215) 542-4011

November 5, 1985

Ms. Ellen Bidwell
Assistant Scientist
EA Sciences and Technology
R. D. 2, Box 91
Goshen Turnpike
Middleton, New York 10940

Dear Ellen:

In a recent memo you requested that Sperry Corporation provide EA Sciences and Technology with information regarding Sperry Univac's allegedly sending hazardous wastes to the City of Utica municipal landfill for disposal up until the early 1970s.

I realize that your request is based on the NUS Report which alleges that not only Sperry Univac but other companies in the Utica area supposedly sent hazardous wastes to this dump. I cannot speak for the other industries in the Utica area, but as far as Sperry Corp. (formerly Univac) is concerned, only non-hazardous wastes were ever sent to the Utica dump.

If you have any further questions, please feel free to contact me.

Sincerely,

Robert F. Jondreau

Robert F. Jondreau
Manager
Safety & Environment

ec

Appendix 1.4.1-123.

INTERVIEW ACKNOWLEDGEMENT FORM

Site Name: City of Utica Dump

I.D. Number: 633015

Person Contacted: Mr. Vincent ~~Scarfile~~ Scarafile

Date: 13 September 1985

Title: Manager, Administrative Services

Affiliation: Kelsey-Hayes Company

Phone No.: (315) 792-4111

Address: P.O. Box 539
Utica, New York 13503

Persons Making Contact:
EA Representatives:
Ellen Bidwell

Type of Contact: Telephone

Interview Summary: (SEE CORRECTED VERSION BELOW)

~~Mr. Scarfile indicated that the Kelsey-Hayes Plant in Utica produced turbine blades. Any use of the City of Utica Dump would have been to dispose of everyday garbage or clean sand used in Kelsey-Hayes' production process. Potentially hazardous liquids were drummed and hauled by Northeast Oil of Syracuse. He did not know where these drums were taken. No chemical powders or any other dry contaminants were used in his factory.~~

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

Kelsey-Hayes produces turbine blades. Our refuse from our plant was contracted out to John Parson's Trucking. We have no idea as to where he disposed of it. This refuse consisted of garbage, paper, sand and etc. Our water oils were picked up by Northeast Oils. Our acids are neutralized and dumped in our county sewage system, with their acceptance.

Signature:

Date: 9/24/85

Appendix 1.4.1-12

Adirondack Environmental Services, Inc.®

P.O. Box 265
298 Riverside Avenue
Rensselaer, NY 12144
(518) 434-4546

LABORATORY REPORT

Page 1 of 1

Client: Stetson-Harza
185 Genesee Street
Utica, NY 13501

Attention: Mr. Dick Goodney

Date Received: 5/1/86 Sample Taken By: RSH

Date Sampled: 5/1/86 Location: Utica Hardfill Dump

No. Samples analyzed 4

Matrix: Groundwate

Composite or Grab: Grab

Methods are in accordance with STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, and METHODS FOR CHEMICAL ANALYS OF WATER AND WASTES, (EPA), unless otherwise noted or attached.

PARAMETER(S)	Your sample ID	MW #1	MW #2	MW #3	MS #4		UNITS(1)	LABORATOR NOTE BOOK REFERENCE
	AES NUMBER	860501E01	860501E02	860501E03	860501E04	Part 703		
Arsenic		0.006	0.013	0.014	0.050	0.025 mg/l		MET-L-37
Selenium		<0.002	<0.002	<0.002	<0.002			MET-L-38
Mercury		<0.0004	<0.0004	<0.0004	<0.0004			MET-L-38
Lead		<0.01	<0.01	<0.01	<0.01			MET-L-16
Cadmium		<0.001	<0.001	<0.001	<0.001			MET-L-16
Chromium		<0.005	<0.005	<0.005	<0.005			MET-L-17
Silver		<0.01	<0.01	<0.01	<0.01			MET-L-20
Beryllium		<0.01	<0.01	<0.01	<0.01			MET-L-24
Antimony		<0.01	<0.01	<0.01	<0.01			MET-L-16
Copper		<0.05	<0.05	<0.05	<0.05			MET-L-16
Nickel		<0.05	<0.05	<0.05	0.16			MET-L-20
Zinc		0.01	<0.01	0.01	0.02			MET-L-17

(1) Units are expressed in mg/l unless otherwise stated

NA = Not Applicable
ND = Not Detectable
< = less than
> = greater than

JUN 11 1986

Approved by:
Date: 6/9/86

Specializing in Hazardous Waste and Petroleum Product Analyses

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

BASE/NEUTRAL PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #1

A.E.S. ID 860501E01

	ppb		ppb
1,3-Dichlorobenzene	<5.0	Diethylphthalate	<5.0
1,4-Dichlorobenzene	<5.0	N-nitrosodiphenylamine	<5.0
1,2-Dichlorobenzene	<5.0	Hexachlorobenzene	<5.0
Hexachloroethane	<5.0	4-Bromophenyl phenyl ether	<5.0
Bis (2-chloroethyl) ether	<5.0	Phenanthrene	<5.0
Bis (2-chloroisopropyl) ether	<5.0	Anthracene	<5.0
N-Nitrosodi-n-propylamine	<5.0	Di-n-butyl phthalate	<5.0
Nitrobenzene	<5.0	Fluoranthene	<5.0
Hexachlorobutadiene	<5.0	Pyrene	<5.0
1,2,4-Trichlorobenzene	<5.0	Benzidine	<40.0
Isophorone	<5.0	Butyl benzyl phthalate	<5.0
Naphthalene	<5.0	Bis (2-ethylhexyl) phthalate	<5.0
Bis (2-chloroethoxy) methane	<5.0	Chrysene	<5.0
Hexachlorocyclopentadiene	<5.0	Benzo(a)anthracene	<5.0
2-Chloronaphthalene	<5.0	3,3-Dichlorobenzidine	<10.0
Acenaphthylene	<5.0	Di-n-octylphthalate	<5.0
Acenaphthene	<5.0	Benzo(b)fluoranthene	<5.0

Base/Neutral Priority Pollutants
Page -2-

	ppb		ppb
Dimethyl phthalate	<5.0	Benzo(k)fluoranthene	<5.0
2,6-Dinitrotoluene	<5.0	Benzo(a)pyrene	<5.0
Fluorene	<5.0	Indeno(1,2,3-cd)pyrene	<5.0
4-Chlorophenyl phenyl ether	<5.0	Dibenzo(a,h)anthracene	<5.0
2,4-Dinitrotoluene	<5.0	Benzo(g,h,i)perylene	<5.0
1,2-Diphenylhydrazine	<5.0	N-nitrosodimethyl Amine	<5.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 1/9/96

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PESTICIDE/PCB PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well #1
A.E.S. ID 860501E01

	ppb		ppb
a-BHC	<0.1	Endosulfan II	<0.1
g-BHC	<0.1	4,4-DDT	<0.1
b-BHC	<0.1	Endosulfan Sulfate	<0.1
Heptachlor	<0.1	Endrin Aldehyde	<0.1
d-BHC	<0.1	Chlordane	<2.0
Alrin	<0.1	Toxaphene	<2.0
Heptachlor Epoxide	<0.1	PCB-1221	<0.5
Endosulfan I	<0.1	PCB-1232	<0.5
4,4'-DDE	<0.1	PCB-1016/1242	<0.5
Dieldrin	<0.1	PCB-1248	<0.5
Endrin	<0.1	PCB-1254	<0.5
4,4'-DDD	<0.1	PCB-1260	<0.5

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/9/86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PURGEABLE PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well 1
A.E.S. ID 860501E01

	ppb
Chloromethane	<1.0
Bromomethane	<1.0
Vinyl Chloride	<1.0
Chloroethane	<1.0
Methylene Chloride	<1.0
1,1-Dichloroethene	<1.0
1,1-Dichloroethane	<1.0
t-1,2-Dichloroethene	<1.0
Chloroform	<1.0
1,2-Dichloroethane	<1.0
1,1,1-Trichloroethane	<1.0
Carbon Tetrachloride	<1.0
Bromodichloromethane	<1.0

	ppb
1,2-Dichloropropane	<1.0
t-1,3-Dichloropropene	<1.0
Trichloroethene	<1.0
Benzene	2
Dibromochloromethane	<1.0
1,1,2-Trichloroethane	<1.0
C-1.3-Dichloropropene	<1.0
2-Chloroethylvinyl ether	<10.0
Bromoform	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
Chlorobenzene	3
Ethylbenzene	<1.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/5/86

ACID PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well #1
A.E.S. ID 860501E01

	ppb		ppb
2-Chlorophenol	<5.0	2,4,6-Trichlorophenol	<5.0
2-Nitrophenol	<5.0	4-Chloro-3-Methylphenol	<5.0
Phenol	<5.0	2,4-Dinitrophenol	<25.0
2,4-Dimethylphenol	<5.0	2-Methyl-4,6-Dinitrophenol	<25.0
2,4-Dichlorophenol	<5.0	Pentachlorophenol	<25.0
		4-Nitrophenol	<25.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/9/86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

BASE/NEUTRAL PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well #2
A.E.S. ID 860501E02

	ppb		ppb
1,3-Dichlorobenzene	<5.0	Diethylphthalate	<5.0
1,4-Dichlorobenzene	<5.0	N-nitrosodiphenylamine	<5.0
1,2-Dichlorobenzene	<5.0	Hexachlorobenzene	<5.0
Hexachloroethane	<5.0	4-Bromophenyl phenyl ether	<5.0
Bis (2-chloroethyl) ether	<5.0	Phenanthrene	<5.0
Bis (2-chloroisopropyl) ether	<5.0	Anthracene	<5.0
N-Nitrosodi-n-propylamine	<5.0	Di-n-butyl phthalate	<5.0
Nitrobenzene	<5.0	Fluoranthene	<5.0
Hexachlorobutadiene	<5.0	Pyrene	<5.0
1,2,4-Trichlorobenzene	<5.0	Benzidine	<40.0
Isophorone	<5.0	Butyl benzyl phthalate	<5.0
Naphthalene	<5.0	Bis (2-ethylhexyl) phthalate	<5.0
Bis (2-chloroethoxy) methane	<5.0	Chrysene	<5.0
Hexachlorocyclopentadiene	<5.0	Benzo(a)anthracene	<5.0
2-Chloronaphthalene	<5.0	3,3-Dichlorobenzidine	<10.0
Acenaphthylene	<5.0	Di-n-octylphthalate	<5.0
Acenaphthene	<5.0	Benzo(b)fluoranthene	<5.0

Base/Neutral Priority Pollutants
Page -2-

	ppb		ppb
Dimethyl phthalate	<5.0	Benzo(k)fluoranthene	<5.0
2,6-Dinitrotoluene	<5.0	Benzo(a)pyrene	<5.0
Fluorene	<5.0	Indeno(1,2,3-cd)pyrene	<5.0
4-Chlorophenyl phenyl ether	<5.0	Dibenzo(a,h)anthracene	<5.0
2,4-Dinitrotoluene	<5.0	Benzo(g,h,i)perylene	<5.0
1,2-Diphenylhydrazine	<5.0	N-nitrosodimethyl Amine	<5.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 4 2 86

Adirondack Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PESTICIDE/PCB PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #2

A.E.S. ID 860501E02

	ppb		ppb
a-BHC	<0.1	Endosulfan II	<0.1
g-BHC	<0.1	4,4-DDT	<0.1
b-BHC	<0.1	Endosulfan Sulfate	<0.1
Heptachlor	<0.1	Endrin Aldehyde	<0.1
d-BHC	<0.1	Chlordane	<2.0
Alrin	<0.1	Toxaphene	<2.0
Heptachlor Epoxide	<0.1	PCB-1221	<0.5
Endosulfan I	<0.1	PCB-1232	<0.5
4,4'-DDE	<0.1	PCB-1016/1242	<0.5
Dieldrin	<0.1	PCB-1248	<0.5
Endrin	<0.1	PCB-1254	<0.5
4,4'-DDD	<0.1	PCB-1260	<0.5

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/2/86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PURGEABLE PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well #2
A.E.S. ID 860501E02

	ppb
Chloromethane	<1.0
Bromomethane	<1.0
Vinyl Chloride	<1.0
Chloroethane	<1.0
Methylene Chloride	<1.0
1,1-Dichloroethene	<1.0
1,1-Dichloroethane	<1.0
t-1,2-Dichloroethene	<1.0
Chloroform	<1.0
1,2-Dichloroethane	<1.0
1,1,1-Trichloroethane	<1.0
Carbon Tetrachloride	<1.0
Bromodichloromethane	<1.0

	ppb
1,2-Dichloropropane	<1.0
t-1,3-Dichloropropene	<1.0
Trichloroethene	<1.0
Benzene	1
Dibromochloromethane	<1.0
1,1,2-Trichloroethane	<1.0
C-1.3-Dichloropropene	<1.0
2-Chloroethylvinyl ether	<10.0
Bromoform	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
Chlorobenzene	<1.0
Ethylbenzene	<1.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 5/9/86

Page 4 of 5

Adirondack
Environmental Services, Inc.®

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

ACID PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, Ny 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1,1986
DATE RECEIVED May 1,1986
CLIENT ID Monitoring Well 2
A.E.S. ID 860501E02

	ppb		ppb
2-Chlorophenol	<5.0	2,4,6-Trichlorophenol	<5.0
2-Nitrophenol	<5.0	4-Chloro-3-Methylphenol	<5.0
Phenol	<5.0	2,4-Dinitrophenol	<25.0
2,4-Dimethylphenol	<5.0	2-Methyl-4,6-Dinitrophenol	<25.0
2,4-Dichlorophenol	<5.0	Pentachlorophenol	<25.0
		4-Nitrophenol	<25.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/9/86

Adirondack
Environmental Services Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

BASE/NEUTRAL PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #3

A.E.S. ID 860501E03

	ppb		ppb
1,3-Dichlorobenzene	<5.0	Diethylphthalate	<5.0
1,4-Dichlorobenzene	<5.0	N-nitrosodiphenylamine	<5.0
1,2-Dichlorobenzene	<5.0	Hexachlorobenzene	<5.0
Hexachloroethane	<5.0	4-Bromophenyl phenyl ether	<5.0
Bis (2-chloroethyl) ether	<5.0	Phenanthrene	<5.0
Bis (2-chloroisopropyl) ether	<5.0	Anthracene	<5.0
N-Nitrosodi-n-propylamine	<5.0	Di-n-butyl phthalate	<5.0
Nitrobenzene	<5.0	Fluoranthene	<5.0
Hexachlorobutadiene	<5.0	Pyrene	<5.0
1,2,4-Trichlorobenzene	<5.0	Benzidine	<40.0
Isophorone	<5.0	Butyl benzyl phthalate	<5.0
Naphthalene	<5.0	Bis (2-ethylhexyl) phthalate	<5.0
Bis (2-chloroethoxy) methane	<5.0	Chrysene	<5.0
Hexachlorocyclopentadiene	<5.0	Benzo(a)anthracene	<5.0
2-Chloronaphthalene	<5.0	3,3-Dichlorobenzidine	<10.0
Acenaphthylene	<5.0	Di-n-octylphthalate	<5.0
Acenaphthene	<5.0	Benzo(b)fluoranthene	<5.0

Adirondack
Environmental Services, Inc.®

Base/Neutral Priority Pollutants
Page -2-

	ppb		ppb
Dimethyl phthalate	<5.0	Benzo(k)fluoranthene	<5.0
2,6-Dinitrotoluene	<5.0	Benzo(a)pyrene	<5.0
Fluorene	<5.0	Indeno(1,2,3-cd)pyrene	<5.0
4-Chlorophenyl phenyl ether	<5.0	Dibenzo(a,h)anthracene	<5.0
2,4-Dinitrotoluene	<5.0	Benzo(g,h,i)perylene	<5.0
1,2-Diphenylhydrazine	<5.0	N-nitrosodimethyl Amine	<5.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/9/86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PESTICIDE/PCB PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well #3
A.E.S. ID 860501E03

	ppb		ppb
a-BHC	<0.1	Endosulfan II	<0.1
g-BHC	<0.1	4,4-DDT	<0.1
b-BHC	<0.1	Endosulfan Sulfate	<0.1
Heptachlor	<0.1	Endrin Aldehyde	<0.1
d-BHC	<0.1	Chlordane	<2.0
Alrin	<0.1	Toxaphene	<2.0
Heptachlor Epoxide	<0.1	PCB-1221	<0.5
Endosulfan I	<0.1	PCB-1232	<0.5
4,4'-DDE	<0.1	PCB-1016/1242	<0.5
Dieldrin	<0.1	PCB-1243	<0.5
Endrin	<0.1	PCB-1254	<0.5
4,4'-DDD	<0.1	PCB-1260	<0.5

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/9/86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PURGEABLE PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #3

A.E.S. ID 860501E03

	ppb
Chloromethane	<1.0
Bromomethane	<1.0
Vinyl Chloride	<1.0
Chloroethane	<1.0
Methylene Chloride	<1.0
1,1-Dichloroethene	<1.0
1,1-Dichloroethane	<1.0
t-1,2-Dichloroethene	<1.0
Chloroform	<1.0
1,2-Dichloroethane	<1.0
1,1,1-Trichloroethane	<1.0
Carbon Tetrachloride	<1.0
Bromodichloromethane	<1.0

	ppb
1,2-Dichloropropane	<1.0
t-1,3-Dichloropropene	<1.0
Trichloroethene	<1.0
Benzene	<1.0
Dibromochloromethane	<1.0
1,1,2-Trichloroethane	<1.0
C-1.3-Dichloropropene	<10.0
2-Chloroethylvinyl ether	<1.0
Bromoform	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
Chlorobenzene	4
Ethylbenzene	<1.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6 9 86

Adirondack
Environmental Services, Inc.®

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

ACID PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #3

A.E.S. ID 860501E03

	ppb		ppb
2-Chlorophenol	<5.0	2,4,6-Trichlorophenol	<5.0
2-Nitrophenol	<5.0	4-Chloro-3-Methylphenol	<5.0
Phenol	<5.0	2,4-Dinitrophenol	<25.0
2,4-Dimethylphenol	<5.0	2-Methyl-4,6-Dinitrophenol	<25.0
2,4-Dichlorophenol	<5.0	Pentachlorophenol	<25.0
		4-Nitrophenol	<25.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6 9 86

Page 5 of 5

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

BASE/NEUTRAL PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #4

A.E.S. ID 860501E04

	ppb		ppb
1,3-Dichlorobenzene	<5.0	Diethylphthalate	<5.0
1,4-Dichlorobenzene	<5.0	N-nitrosodiphenylamine	<5.0
1,2-Dichlorobenzene	<5.0	Hexachlorobenzene	<5.0
Hexachloroethane	<5.0	4-Bromophenyl phenyl ether	<5.0
Bis (2-chloroethyl) ether	<5.0	Phenanthrene	<5.0
Bis (2-chloroisopropyl) ether	<5.0	Anthracene	<5.0
N-Nitrosodi-n-propylamine	<5.0	Di-n-butyl phthalate	<5.0
Nitrobenzene	<5.0	Fluoranthene	<5.0
Hexachlorobutadiene	<5.0	Pyrene	<5.0
1,2,4-Trichlorobenzene	<5.0	Benzidine	<40.0
Isophorone	<5.0	Butyl benzyl phthalate	<5.0
Naphthalene	<5.0	Bis (2-ethylhexyl) phthalate	<5.0
Bis (2-chloroethoxy) methane	<5.0	Chrysene	<5.0
Hexachlorocyclopentadiene	<5.0	Benzo(a)anthracene	<5.0
2-Chloronaphthalene	<5.0	3,3-Dichlorobenzidine	<10.0
Acenaphthylene	<5.0	Di-n-octylphthalate	<5.0
Acenaphthene	<5.0	Benzo(b)fluoranthene	<5.0

Base/Neutral Priority Pollutants
Page -2-

	ppb		ppb
Dimethyl phthalate	<5.0	Benzo(k)fluoranthene	<5.0
2,6-Dinitrotoluene	<5.0	Benzo(a)pyrene	<5.0
Fluorene	<5.0	Indeno(1,2,3-cd)pyrene	<5.0
4-Chlorophenyl phenyl ether	<5.0	Dibenzo(a,h)anthracene	<5.0
2,4-Dinitrotoluene	<5.0	Benzo(g,h,i)perylene	<5.0
1,2-Diphenylhydrazine	<5.0	N-nitrosodimethyl Amine	<5.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 1-7-86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PESTICIDE/PCB PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #4

A.E.S. ID 860501E04

	ppb		ppb
a-BHC	<0.1	Endosulfan II	<0.1
g-BHC	<0.1	4,4-DDT	<0.1
b-BHC	<0.1	Endosulfan Sulfate	<0.1
Heptachlor	<0.1	Endrin Aldehyde	<0.1
d-BHC	<0.1	Chlordane	<2.0
Alrin	<0.1	Toxaphene	<2.0
Heptachlor Epoxide	<0.1	PCB-1221	<0.5
Endosulfan I	<0.1	PCB-1232	<0.5
4,4'-DDE	<0.1	PCB-1016/1242	<0.5
Dieldrin	<0.1	PCB-1248	<0.5
Endrin	<0.1	PCB-1254	<0.5
4,4'-DDD	<0.1	PCB-1260	<0.5

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6/9/86

Adirondack
Environmental Services, Inc.

P.O. Box 265 298 Riverside Avenue Rensselaer, NY 12144 (518) 434-4546

PURGEABLE PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501

ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986

DATE RECEIVED May 1, 1986

CLIENT ID Monitoring Well #4

A.E.S. ID 860501E04

	ppb
Chloromethane	<1.0
Bromomethane	<1.0
Vinyl Chloride	<1.0
Chloroethane	<1.0
Methylene Chloride	<1.0
1,1-Dichloroethene	<1.0
1,1-Dichloroethane	<1.0
t-1,2-Dichloroethene	<1.0
Chloroform	<1.0
1,2-Dichloroethane	<1.0
1,1,1-Trichloroethane	<1.0
Carbon Tetrachloride	<1.0
Bromodichloromethane	<1.0

	ppb
1,2-Dichloropropane	<1.0
t-1,3-Dichloropropene	<1.0
Trichloroethene	<1.0
Benzene	<1.0
Dibromochloromethane	<1.0
1,1,2-Trichloroethane	<1.0
C-1.3-Dichloropropene	<1.0
2-Chloroethylvinyl ether	<10.0
Bromoform	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
Chlorobenzene	<1.0
Ethylbenzene	<1.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

Comments:

Reviewed by:
Date: 6-5-86

Page 4 of 5

ACID PRIORITY POLLUTANTS

CLIENT Stetson-Harza
185 Genesee Street
Utica, NY 13501
ATTENTION Mr. Dick Goodney

DATE SAMPLED May 1, 1986
DATE RECEIVED May 1, 1986
CLIENT ID Monitoring Well #4
A.E.S. ID 860501E04

	ppb		ppb
2-Chlorophenol	<5.0	2,4,6-Trichlorophenol	<5.0
2-Nitrophenol	<5.0	4-Chloro-3-Methylphenol	<5.0
Phenol	<5.0	2,4-Dinitrophenol	<25.0
2,4-Dimethylphenol	<5.0	2-Methyl-4,6-Dinitrophenol	<25.0
2,4-Dichlorophenol	<5.0	Pentachlorophenol	<25.0
		4-Nitrophenol	<25.0

Methodology: Federal Register - 40 CFR, Part 136, December 3, 1979

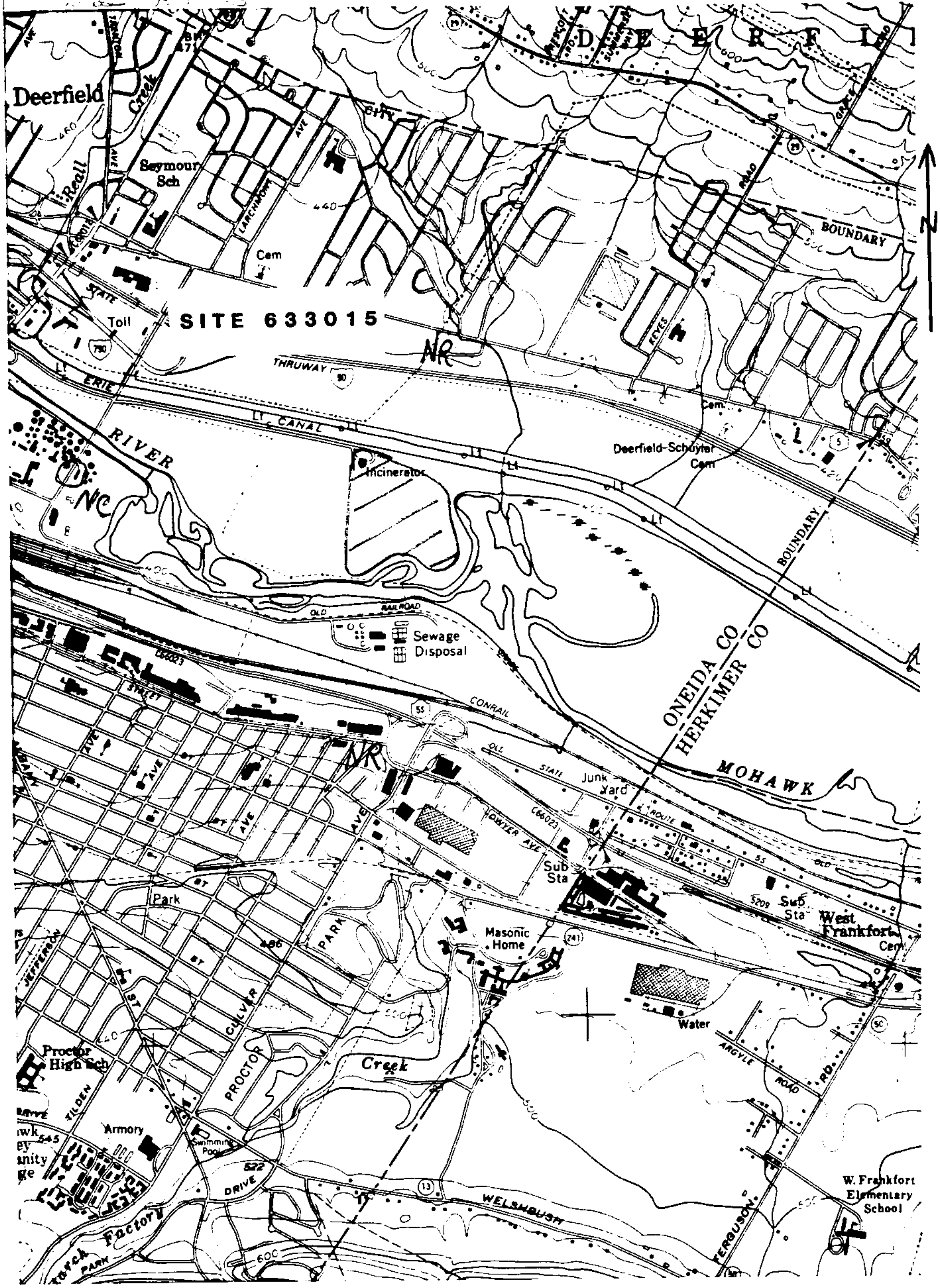
Comments:

Reviewed by:
Date: 6/9/86

[illegible] — 43° 06' 3
[illegible] — 75° [illegible] 35

Appendix 1.4.2-1

CITY OF UTICA DUMP



UTICA EAST QUAD

NR = Nearest Residence
NC = Nearest Commercial building

Scale = 1:24000

Appendix 1.4.2-2

1of3

New York State Atlas of
Community Water System Sources
1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ONEIDA COUNTY

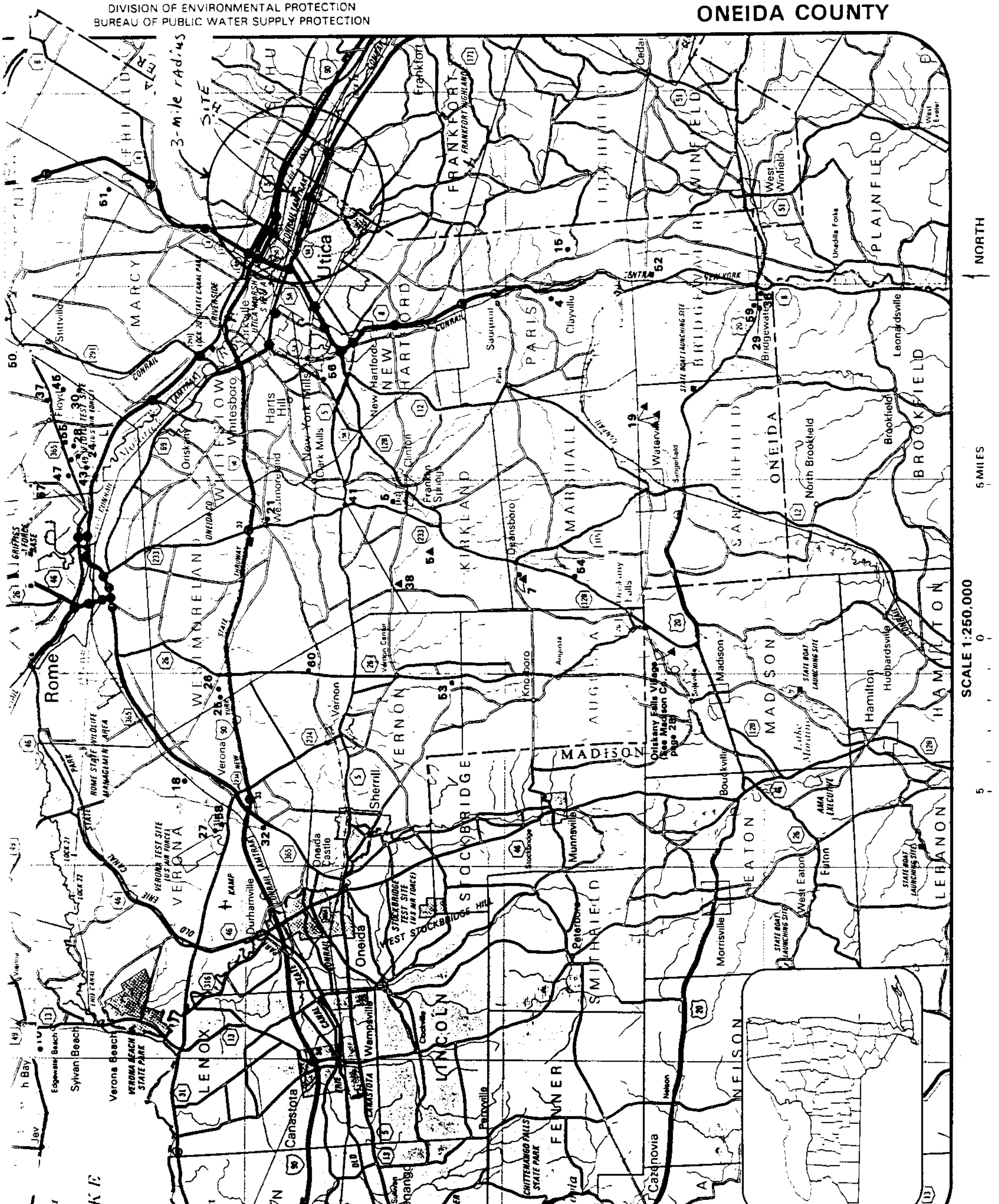
2 of 3

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Barneveld Village	391.	Wells (Springs)
2	Boonville Village	2400.	Boonville Reservoirs
3	Camden Village	2936.	Emmons Brook Reservoir, Wells (Springs)
4	Clayville Water Works	468.	Wells
5	Clinton Village	3000.	Clinton Reservoir, Wells
6	Crystal Spring Water Company	100.	Springs
7	Deansboro Water Company	300.	Reservoir
8	Forestport Water District	800.	Forestport Reservoir
9	McConnellsville Water Company	234.	Wells
10	North Bay Water District	374.	Wells
11	Oneida City (Madison Co, Page 28)		Florence Creek, Glenmore Reservoir
	Oriskany Falls Village (See No 11 Madison Co, Page 28)	802	
12	Prospect Village	362.	Wells
13	Remsen Village	650.	Wells (Springs)
14	Rome City	37300.	East Branch Fish Creek Reservoir
15	Sauquoit Water District	1800.	Wells (Springs)
16	Sylvan Spring Water Company	2200.	Vienna & Hollenbeck Reservoirs
17	Utica Board of Water Supply	135000.	Hinckley Reservoir
18	Verona Water District	1200.	Wells
19	Waterville Village	2000.	Big Creek Reservoirs
20	Westernville Spring Water Company	NA.	Wells (Springs)
21	Westmoreland Water District #1	550.	Wells
Non-Municipal Community			
22	Annsville Youth Camp	70.	Wells
23	Bailey's Beach Trailer Park	33.	Wells
24	Birches Trailer Court	168.	Wells
25	Boyd Mobile Manor	126.	Wells
26	Boyd Trailer Park	15.	Wells
27	Brandybrook Mobile Home Court	24.	Wells
28	Breezy Acres Trailer Court	48.	Wells
29	Brookside Mobile Manor	102.	Wells
30	Colonial Mobile Motor Court	18.	Wells
31	Covewood Mobile Home Park	93.	Wells
32	Dandelion Village	22.	Wells
33	Delta Lake Trailer Court	117.	Wells
34	Derendas Lee Manor Trailer Park	27.	Wells
35	E and A Trailer Park	10.	Wells
36	Fitch's Trailer Park	144.	Wells
37	Green Mansion Park	90.	Wells
38	Hamilton College	2000.	Hamilton College Reservoirs
39	Hillside Trailer Park	81.	Wells
40	Hyde's Trailer Court	15.	Wells
41	Ken Coulter Mobile Homes	66.	Wells
42	Knoll's Trailer Park	33.	Wells (Springs)
43	Laymons Trailer Court	25.	Wells
44	Lee Valley Trailer Court	126.	Wells (Springs)
45	Maple Grove Mobile Home Court	66.	Wells
46	Mayer Mobile Manor	54.	Wells
47	McDonalds Mobile Home Estates	45.	Wells
48	Meadow Brook Mobile Home Park	78	Wells
59	Mel Haven Mobile Home Park	14.	Wells
50	Oneida's Mobile Court #2	40.	Wells
51	Paradise Mountain Mobile Home Park	474.	Wells
52	Pine Village Estates	72.	Wells
53	Quiet Valley Mobile Village	200.	Wells
54	Signal Mobile Court	78.	Wells
55	Stewarts Mobile Home Park	60.	Wells
56	Thompson's Mobile Manor	33.	Wells
57	Torraco Trailer Park	78.	Wells
58	Verona Mobile Home Park	153.	Wells
59	Williams Trailer Park	15.	Wells
60	Yerkie's Mobile Manor	70.	Wells

3 of 3

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ONEIDA COUNTY



Appendix 1.4.3-1

Water Resources of the Utica-Rome Area New York

By H. N. HALBERG, O. P. HUNT, and F. H. PAUSZEK

WATER RESOURCES OF INDUSTRIAL AREAS

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1499-C

U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1962

CONTENTS

ILLUSTRATIONS

[Plates are in pocket]

WATER RESOURCES OF INDUSTRIAL AREAS

WATER RESOURCES OF THE UTICA-ROME AREA, NEW YORK

By H. N. Halberg, O. P. Hunt, and F. H. Pauszek

ABSTRACT

The Utica-Rome area is along the Mohawk River and New York State Erie (Barge) Canal about midway between Lake Ontario and Albany. It encompasses about 390 square miles centered around the industrial cities of Utica and Rome.

The Mohawk River, its tributary West Canada Creek, and a system of reservoirs and diversions to maintain the flow in the barge-canal system, assure an ample water supply for the foreseeable needs of the area. The water from these sources is generally of good chemical quality requiring little treatment, although that from the Mohawk River is only fair and may require some treatment for sensitive industrial processes. Additional surface water is available from smaller streams in the area, particularly Oriskany and Sauquoit Creeks, but the water from these sources is hard, and has a dissolved-solids content of more than 250 ppm (parts per million). Ground water is available in moderate quantities from unconsolidated sand and gravel deposits in the river valleys and buried bedrock channels, and in small quantities from bedrock formations and less permeable unconsolidated deposits. The quality of water from sand and gravel, and bedrock ranges from good to poor. However, where necessary, the quality can be improved with treatment.

The Mohawk River is the source of the largest quantity of water in the area. The flow of the stream below Delta Dam equals or exceeds 108 mgd (million gallons per day) 90 percent of the time, and at Little Falls it equals or exceeds 560 mgd 90 percent of the time. The flow between these two points is increased by additions from Oriskany, Sauquoit, and West Canada Creeks and from many smaller tributary streams. The flow is also increased by diversions from outside the area, from the Black and Chenango Rivers and West Canada Creek for improvement of navigation in the Erie (Barge) Canal, and from West Canada and East Branch Fish Creeks for the public supplies of Utica and Rome. Much of the public-supply water eventually reaches the river by way of sewerage and industrial waste-disposal systems. The total diversion from these sources averages more than 92 mgd. An estimated 18.5 mgd is withdrawn from the Mohawk River by industry, mostly for nonconsumptive uses.

Floods in the Utica-Rome area are not a frequent problem owing to the use of regulatory measures. The major streams fluctuate through a narrow range in stage and generally only a narrow strip along the streams is subject to flooding.

Water-bearing sand and gravel deposits in the major river valleys are the principal sources of ground water, especially where they are recharged by infiltration from streams. The most important potential source is the deposit of sand and gravel underlying the extensive plain adjacent to the Mohawk River between Delta Reservoir and Rome. Maximum sustained yields from these deposits are not known; but moderate quantities of water, 300 gpm (gallons per minute) or less from a single well, can probably be obtained from some parts of the sand plain area, particularly in the vicinity of a buried bedrock channel that extends southwestward from Delta Reservoir. Similar quantities of ground water probably can be withdrawn from some parts of the flood plain of the Mohawk River between Rome and Frankfort and from the sand and gravel deposits filling the valley of Ninemile Creek below Holland Patent. The deposits underlying the flood plain of the Mohawk River generally are fine grained but in places contain interstratified beds of coarser sand and gravel. The most productive part of the flood plain is at the east end near Frankfort. The deposits in Ninemile Creek valley also are generally fine grained; but where they are sufficiently thick, as over a buried bedrock valley southwest of Floyd, moderate quantities of water may be obtained.

Small to moderate quantities of water (150 gpm or less from a single well) can be obtained from sand and gravel deposits in the bottoms of Oriskany and Sauquoit Creek valleys, especially where the materials are coarse grained and are connected hydraulically with the streams. Small quantities of water (20 gpm or less from a single well) can be obtained from smaller areas of sand and gravel filling minor channels carved in the bedrock of the uplands and from some of the bedrock formations.

The depth to water in most wells in the Utica-Rome area ranges from 5 to 50 feet below the land surface. In general the water table is closer to the surface in the valley bottoms than in the uplands or along the sloping valley sides, where not otherwise affected by differences in geologic or hydrologic conditions. The water table is nearly flat in the flood plain of the Mohawk River and stands generally only slightly higher than the adjacent river.

The amount of water used in the area is not large. The estimated average withdrawal was about 48.5 mgd in 1954. Of this, industry used the largest amount, requiring 60 percent or about 29 mgd. About one-third of the water used by industry was self supplied, the remainder was purchased from public water systems. Of the 48.5 mgd withdrawn, about 27.4 mgd was supplied by municipally owned systems, and 21.1 mgd was obtained from private sources. About 96 percent of the total was taken from surface sources, and 4 percent was drawn from ground-water sources. All the water for municipal supply and most of the water for industry was drawn from surface sources. The uses of water in this area are mostly nonconsumptive, and they cause little depletion of the supply. However, practically all withdrawal uses add dissolved solids or suspended matter to the water and decrease its usefulness for some purposes.

INTRODUCTION

The development of the water resources of the Utica–Rome area, to meet the increasing demands of municipal and industrial expansion, requires a knowledge of the occurrence and use of water. Information is required about sources of water, quantity available, chemical and physical quality, amount used, effect of use on the quantity and quality, and magnitude and frequency of floods.

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PHYSICAL FEATURES

The Utica–Rome area is partly within the Mohawk valley lowland and partly in the north-central margin of the Allegheny plateau. The major topographic features are the valley of the Mohawk River trending northwest-southeast across the central part of the area, the prominent upland front of the Allegheny plateau south of the river, and the rolling upland plateau north of the river. These major features are largely the result of differential erosion of the underlying sedimentary rocks.

The Mohawk valley was carved out of the underlying soft Utica shale by preglacial and glacial streams. It is now partly filled with clay, sand, and gravel deposited during the earlier formative stages of the Great Lakes. These deposits underlie the modern flood plain of the river and form the conspicuous terraces that flank the flood plain, such as those in the part of the valley between Marcy and Oriskany. The plain is about 1 mile wide in the stretch between Rome and Frankfort. The plain also extends west of Rome where it is much wider. The flanking terraces are continuous with the valley fill in the lower reaches of Ninemile, Oriskany and Sauquoit Creeks and were formed during the outflow of higher stages of the glacial Great Lakes. The surface deposits throughout the valley consist of sand and gravel with some silt and clay.

The northern front of the plateau south of the Mohawk valley rises abruptly from the inner edges of the sand and gravel terraces at an altitude of about 600 feet to summit altitudes of 1,380 feet near the southern border of the area. The bedrock is exposed in the deeply cut tributary valleys and along the steeper upland slopes. The plateau is underlain by more resistant sedimentary rocks consisting predominantly of limestone, dolomite, shale, and sandstone with several intercalated beds of iron ore. The north-facing slope is deeply dissected by two large northward-flowing tributaries of the Mohawk River, Oriskany and Sauquoit Creeks.

The rolling plateau north of the river slopes gently from an altitude of 1,300 feet southward to an altitude of about 600 feet along the Mohawk River. It is underlain by the Utica and Frankfort shales, the latter being the more resistant and capping the higher hills. The plateau surface is scarred deeply by West Canada and Ninemile Creeks and several other smaller tributaries of the Mohawk River, exposing the underlying shale beds. Elsewhere in the upland area the bedrock is covered by a veneer of ground moraine (till).

The area is drained by the Mohawk River except the westernmost part, which is drained by the Oswego River, through Wood Creek and the drainage west of Rome (pl. 1). The Mohawk River enters the area north of Rome and flows in a meandering path through the central part of the Utica-Rome area to the eastern edge at Frankfort. Within this reach it has a fall of only about 40 feet and within its wide flat valley is most of the industry in the area. In places some of the river water is diverted by the Erie (Barge) Canal, which parallels its course from Rome to the eastern border of the area. The main tributaries of the Mohawk River within the area are Oriskany and Sauquoit Creeks, which enter from the south, and Ninemile Creek, which enters from the north. West Canada Creek forms the northeastern border of the area and enters the Mohawk River to the east. During the navigation season, Ninemile Creek carries water that is diverted from West Canada Creek basin to the Erie (Barge) Canal. Industrial development has occurred primarily along the Mohawk River and to the south along Oriskany and Sauquoit Creeks.

SOURCES OF SURFACE WATER

The water resources of the Utica-Rome area are its most important natural resource. The Mohawk River and its larger tributaries, Oriskany, Sauquoit, and West Canada Creeks, are the important sources of water in the area and assure an ample supply of good or improvable quality for all foreseeable needs. Additional surface water is obtained outside the area from East Branch Fish Creek in the Lake Ontario basin.

MOHAWK RIVER

The Mohawk River is formed by the confluence of its east and west branches just north of the Utica-Rome area. About 9 miles downstream from this point it enters and flows through Delta Reservoir, the lower or outflow end of which is just within the report area (pl. 1). Immediately south of Rome, the Mohawk River is intersected and crossed by the Erie (Barge) Canal, Division of the New York State Barge Canal System. The flow of the Mohawk River is divided between an integrated canal and river system from Rome until the river becomes the canal at Frankfort just east of the report area. The canal is north of the river and parallel to it, receiving the water from all tributaries to the north; the river receives the flow of tributaries to the south.

The Mohawk River is economically important to the thousands of people residing in the Utica-Rome area and to the State of New York. It supplies water for industrial use, recharges adjacent groundwater reservoirs, and provides a medium for sewage and waste disposal. An estimated 18.5 mgd is withdrawn from the river by industries in Rome and Utica for cooling and process purposes. Most of this water is returned to the river after use.

the peak outflow from Delta Reservoir (from a drainage area of 145 sq mi) was only 8,560 cfs.

The chemical quality of the water of the Mohawk River in the Utica-Rome area is fair. Analyses of two water samples from the Mohawk River taken in January 1955 just below Delta Reservoir and at Utica 20 miles downstream showed an increase of dissolved solids from 84 to 195 ppm in the 20-mile stretch. The higher concentrations of dissolved solids reflect increases in concentrations of individual chemical constituents including calcium, magnesium, bicarbonate, and sulfate. As a result, hardness increased from 56 to 128 ppm. (Analyses are given in table 3.) The increases may be due in part to natural conditions, as the more mineralized water in Oriskany and Sauquoit Creeks joins the Mohawk River between the points sampled, and in part to an increase of industrial and municipal pollution which alter the chemical character of the water. Both domestic and industrial pollution in this area are reported by the New York State Water Pollution Control Board (1952).

Downstream from the Utica-Rome area, a station for daily sampling of the Mohawk River water was established near Little Falls in October 1956 and operated through September 1957. During this period, concentrations of dissolved solids and hardness fluctuated within a narrower range than at the locations in the Utica-Rome area (table 4).

The dissolved-solids content of water from the Mohawk River probably is low enough for many industrial uses. But for sensitive industrial processes requiring soft water that is low in dissolved solids, suitable treatment would have to be applied. The temperature of the Mohawk River water generally follows the same trend as the air temperature in the region. At the sampling station near Little Falls the water temperature fluctuated between 32° and 78° F from October 1, 1956, to September 30, 1957 (fig. 6). The daily water temperature generally changed less than 3° F between successive days. In some sections the temperature of the river water may be affected by the inflow of industrial wastes.

ORISKANY CREEK

Oriskany Creek is the first major tributary stream on the south side of the Mohawk River below Rome (pl. 1). It drains the north slope of the Allegheny plateau, rising in Oneida County at an altitude of 1,500 feet and entering the Mohawk River about 6 miles northwest of Utica at an altitude of 410 feet. The two-thirds of Oriskany Creek drains an area of relatively steep slopes underlain by bedrock covered with thin till deposits. The lower one-third, below Clinton,

Table 4.—*Summary of chemical analyses, in parts per million, Mohawk River at Little Falls, October 1956 to September 1957*

Constituents	*Minimum*	*Time weighted-average*	*Maximum*
Silica (SiO_2)	4. 2	6. 4	11
Iron (Fe)	. 05	. 14	. 38
Calcium (Ca)	27	31	38
Magnesium (Mg)	4. 0	5. 3	7. 0
Sodium (Na)	4. 1	5. 7	7. 6
Potassium (K)	1. 1	1. 3	1. 7
Bicarbonate (HCO_3)	79	92	104
Sulfate (SO_4)	23	28	37
Chloride (Cl)	4. 2	5. 9	7. 8
Fluoride (F)	. 0	. 1	. 2
Nitrate (NO_3)	1. 4	3. 3	4. 6
Dissolved solids	122	138	170
Hardness as calcium, magnesium ($CaCO_3$)	84	101	124
Oxygen consumed:			
Unfiltered	4	7	16
Filtered	2	4	5
Specific conductance (micromhos at 25°C)	163	231	314
pH	7. 0	------	7. 6
Color	3	9	17

drains a nearly flat valley in which thick deposits of sand and gravel overlie the bedrock. Below Clinton the creek furnishes water to several industries.

Water has been diverted into Oriskany Creek from the Chenango River basin through Oriskany Creek feeder at Solsville, about 8 miles outside the report area for more than 100 years. Incomplete records during 1954–58 indicate that the amount of water diverted averages about 6.5 mgd (10 cfs) during the summer months.

Although no gaging station is operated on Oriskany Creek, seven discharge measurements were made in 1954 and 1955 near Oriskany, where the drainage area is 145 square miles. These measured discharges were correlated with discharges of gaged streams in the vicinity and on this basis, with the pattern of feeder operation during 1954–55, approximately low-flow duration data were computed. Tabulated below are the results of these correlations:

Percentage of time discharge was equaled or exceeded	*Mgd per square mile*	*Percentage of time discharge was equaled or exceeded*	*Mgd per square mile*
50	0. 50	80	0. 25
60	. 40	90	. 19
70	. 32	95	. 16

Under the pattern of feeder operations during 1954–55, magnitude and frequency of annual low flows has been computed for this stream. These data, listed below, are also based on correlation methods using the regional low-flow frequency data for gaged streams in the vicinity.

Recurrence interval (years)	*Annual minimum discharge (mgd)*	
	7-day	*30-day*
2	24. 0	29. 7
5	17. 9	22. 1
10	15. 5	18. 8
20	14. 7	16. 3

The chemical quality of the raw water from Oriskany Creek is poor. Two samples taken from the creek near Oriskany indicate a high concentration of dissolved solids, which originated probably from the solution of the several limestone formations underlying the area drained by Oriskany Creek and possibly from industrial wastes entering the stream above Oriskany. The water contains principally calcium, magnesium, bicarbonate, sulfate, and lesser amounts of other cations and anions. (See table 3.) As a result, the water is hard, with both temporary (carbonate) and permanent (noncarbonate) hardness being present. The latter is especially objectionable because it forms a hard scale in boilers. In industrial processes in which the water might be used for cleansing purposes, an objectionable scum would be formed by the reaction of calcium and magnesium with soaps. However, the quality can be substantially improved by treatment. The samples of January and April 1955 were taken at relatively low and high flows, 143 and 641 cfs, respectively, and the dilution effects of the higher flow can be noted in the generally lower content of included chemical constituents. Data on the water temperature of Oriskany Creek are not available; however, the temperature probably follows the characteristic cyclic seasonal trend of other streams in the area and averages about the mean air temperature of the region (48°F). The water temperature may be affected near the inflow of industrial and municipal wastes.

SAUQUOIT CREEK

Sauquoit Creek rises in Oneida County about 10 miles south of Utica at an altitude of 1,450 feet and flows northwestward to enter the Mohawk River 2 miles northwest of Utica (pl. 1). It drains 61 square miles on the slope of the Allegheny plateau. The drainage basin is chiefly rolling farmland and contains many small villages. The largest village in the basin, New York Mills, near the mouth of the stream, had a population of 3,366 in 1950. Above New Hartford the valley is narrow and has relatively steep-sided bedrock walls. Below New Hartford it is flat and is underlain by deposits of sand and gravel.

Continuous discharge records have not been collected for this stream; however, from November 1954 to September 1955, seven discharge measurements were made of the base flow at New Hartford,

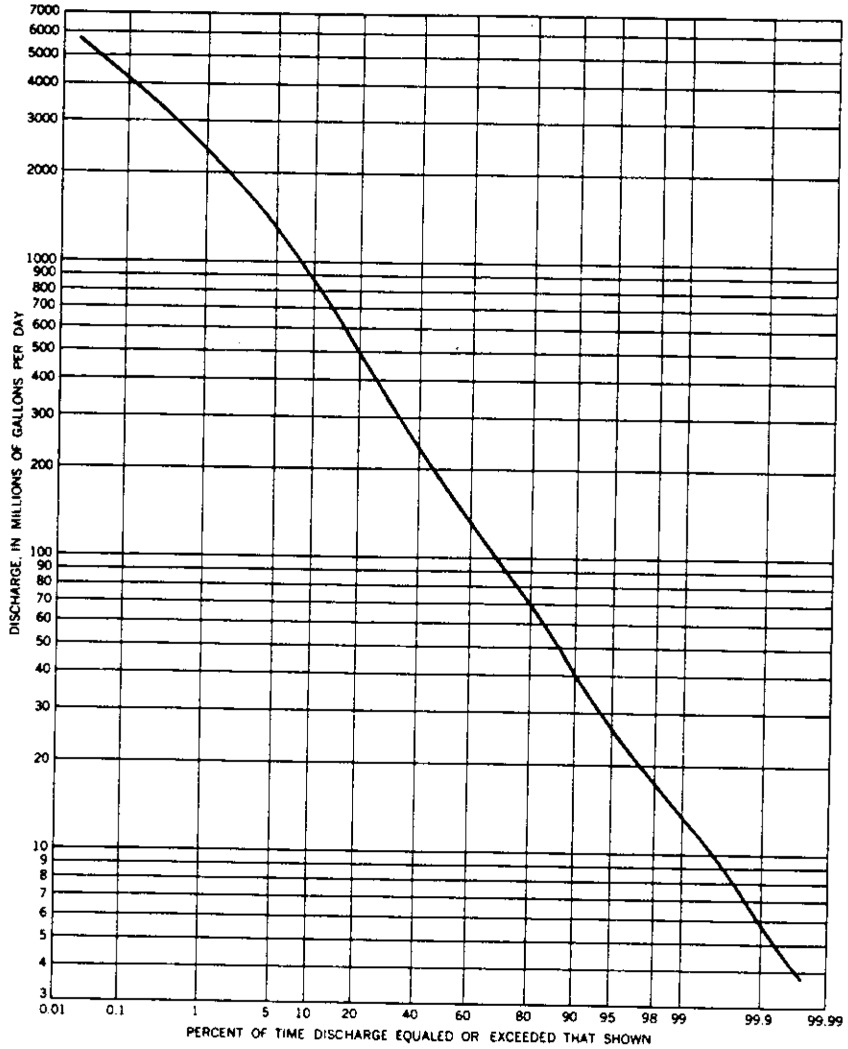

FIGURE 8.—Duration curve of observed daily flow, East Branch Fish Creek at Taberg, 1924–58.

of mineral matter are present and the water is soft. Generally, the water is suitable for most purposes.

SOURCES OF GROUND WATER

SAND AND GRAVEL DEPOSITS

Ground water, of good or improvable quality is available in moderate supply from sand and gravel deposits in the Mohawk River lowland and from similar deposits in the lower valleys of Oriskany

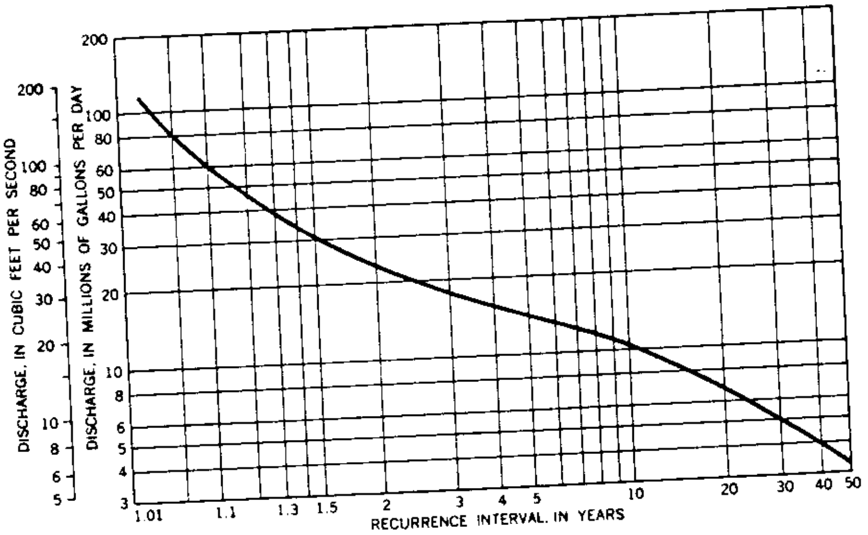

FIGURE 9.—Magnitude and frequency of observed annual consecutive 7-day low flows, East Branch Fish Creek at Taberg, 1923–58.

and Sauquoit Creeks. It is available in small supply from the bedrock formations and from the veneer of ground moraine overlying the bedrock in the upland areas, although it may be hard. Ground water also serves to maintain the low-water flow of the streams and conversely may be recharged by adjacent streams during floods or periods of heavy ground-water pumpage.

MOHAWK RIVER LOWLAND

The Mohawk River lowland as described in this report is the area within the Mohawk River valley that is underlain by glaciofluvial deposits and by lacustrine and alluvial deposits (pl. 1). The land surface is mainly valley bottom or flood plain and adjacent terraces. It is nearly level and has a maximum relief of about 200 feet, the outer limit of the lowland being at an altitude of about 600 feet. Within the lowland, moderate to large quantities of ground water can be obtained from sand and gravel deposits (table 5). These deposits make up the greater part of the unconsolidated material underlying the extensive sand plain north of Rome, the valley of Ninemile Creek below Holland Patent, and the terraces bordering the Mohawk River plain from west of Rome to Frankfort. They also are interspersed with extensive beds of clay and silt in the fill of the Mohawk River plain.

Data upon which to base reliable appraisals of yield of ground water are lacking for this area because many wells for which records are available were drilled for domestic users requiring only small supplies and the wells were not constructed or developed for maximum yield.

TABLE 5.—*Geologic formations in the Utica-Rome area and their water-bearing properties (modified from Dale, 1953 and Kay, 1953)*

Age	Thickness (feet)	Average depth of wells	Range in yield of wells	Average yield of wells	Character of material and water-bearing properties

TABLE 5.—*Geologic formations in the Utica-Rome area and their water-bearing properties (modified from Dale, 1953 and Kay, 1953)*

Age		Geologic unit		Thickness (feet)	Average depth of wells (feet)	Range in yield of wells (gpm)	Average yield of wells (gpm)	Character of material and water-bearing properties
System	Series							
Quaternary	Recent and Pleistocene	Fine-grained glaciofluvial, lacustrine and alluvial deposits		70–150	68	2–40	11	Clay, silt, and sand formed in temporary lakes or by recent streams. Poor aquifer generally, but sand beds may yield moderate supplies, especially where recharged by nearby streams.
	Pleistocene	Medium to coarse-grained glaciofluvial and deltaic deposits		10–140	67	10–290	80	Interbedded and interlensing sand and gravel formed by sorting action of glacial melt water. Most productive aquifer in area, especially where recharged by nearby streams. Furnishes good-quality water, suitable for most purposes.
		Ground moraine (till)		1–40	10	1/2–10	3	Heterogeneous mixture ranging in grain size from clay to boulders. Found mostly in the uplands. Poor aquifer but furnishes enough water from dug wells for domestic use.
Silurian	Cayuga	Manlius limestone		150+	------	------	------	Dark blue fossiliferous limestone having dark shale partings. Furnishes small to moderate quantities of moderately hard water.
		Salina group	Bertie limestone	30	100	0–40	7	Drab-colored, thin-bedded, clayey limestone. Furnishes small to moderate quantities of moderately hard water.
			Camillus shale	200–300				Mottled red and green, drab-colored shale and thin-bedded limestone zones. Yields sufficient water for domestic use but quality is very poor.
			Vernon shale	300				Purplish-red shale spotted with green, and thin beds of green shale and limestone. Yields sufficient water for domestic use but quality is very poor.
	Niagara	Lockport dolomite		80	86	0–8	2¾	Dark-colored nearly black dolomite and shale. Furnishes small quantities of poor-quality water.
		Clinton group		270	67	½–35	9½	Green and gray shale and sandstone, a few dolomite and conglomerate beds, and several thin beds of fossiliferous red oolitic hematite (iron ore). Yields sufficient water for domestic purposes. Water may be hard in some places.
		Oneida conglomerate		29	------	------	------	Quartz-pebble conglomerate and crossbedded sandstone, pyritiferous. Relatively unimportant aquifer owing to thinness.
Ordovician	Upper Ordovician	Frankfort shale (includes Pulaski shale)		400–500	114	½–20	5	Gray sandy shale, thin beds of dolomite and calcareous sandstone. Furnishes small to moderate quantities of good-quality water.
		Utica shale		300–400	127	½–48	7½	Black and gray carbonaceous shale containing calcareous argillites. Reliable source of small to moderate quantities of water. Water obtained from openings along joints and bedding planes. Water is of good quality but contains hydrogen sulfide in some places.

From the available data it would seem that the most important potential sources of ground water in the area are the deposits of sand and gravel underlying the extensive plain between Rome and Delta Reservoir. These sediments were carried southward into the area by glacial melt water and were probably deposited in several stages, partly as glaciofluvial terraces and partly as a delta of the glacial Mohawk River. The deposits are coarse grained to the north near Delta Reservoir and become finer grained southward. They are generally less than 40 feet thick except in the vicinity of a buried bedrock channel that extends southwestward from the southwestern part of Delta Reservoir, in which they reach a maximum known thickness of 90 feet. They are a potentially productive source of ground water because they are highly permeable and are saturated for most of their thickness. Water levels in wells tapping sand and gravel deposits in the plain north of Rome are commonly 10 to 30 feet below the land surface. Maximum sustained yields from the glaciofluvial deposits in this area are not known as they are tapped only by domestic wells, except for an 8-inch-diameter screened well at the State Fish Hatchery north of Rome that is reported to have yielded 290 gpm with a drawdown in water level of 13 feet. Yields of about the same magnitude or even greater can probably be obtained from properly constructed wells elsewhere in the plain north of Rome.

The fill underlying the Mohawk River plain between Rome and Frankfort is the second most important source of ground water in the lowland. It occupies an older channel that was eroded deeply into the soft shales of the region. The maximum thickness of the valley fill ranges from about 70 feet at Rome to 150 feet at Frankfort. The deposits are thickest over the axis of the older eroded bedrock channel which seems to be south of the present river in the reach between Rome and Whitesboro and north of the Erie (Barge) Canal in the reach between Whitesboro and Frankfort. The sediments making up most of the valley fill were carried in by glacial melt water and deposited in the standing water bodies that were earlier glacial stages of the development of the Great Lakes. These are overlain generally by a veneer of flood-plain deposits of the present Mohawk River. Consequently the sediments are predominantly fine sand, silt, and clay, but they are interstratified in places with beds and lenses of coarser sand and gravel that were washed in by stronger currents (pl. 3). These water-bearing sand and gravel deposits yield moderate supplies to a few industrial and domestic wells and are potential sources of additional supplies. The yields of 9 wells between Rome and Frankfort penetrating sand and gravel ranged from 7 to 80 gpm.

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Most of the higher yielding wells are at the east end of the channel, between Utica and Frankfort. Most wells in the channel obtain water from beds or lenses of sand and gravel that underlie fine-grained materials and hence have little direct hydraulic connection with the Mohawk River or the Erie (Barge) Canal. However, in this area long-sustained, moderate to large quantities of ground water can probably be obtained from properly constructed wells that penetrate coarse-grained deposits of appreciable thickness. These coarse-grained deposits lie close to and are hydraulically connected with the river or canal, from which recharge can be effectively induced. For example, 1 well in the Mohawk River channel at Frankfort yields 500 gpm and 2 wells at Ilion, about 2 miles east of Frankfort, have a combined yield of 400 gpm. Their sustained high production is due partly to induced infiltration from the Mohawk River. In the broad, featureless plain west of Rome drained by Wood Creek, which is the western continuation of the channel discussed above, the underlying deposits are of lacustrine origin and comprise primarily clay and silt. They commonly are not very permeable and, hence, do not yield water readily. However, a few wells yield small supplies from discontinuous beds of sand and gravel at the base of the fill in the deepest part of the channel near Coonrod.

The unconsolidated materials filling the valley of Ninemile Creek also are a potential source of moderate quantities of ground water. The deposits originated as a delta of an earlier glacial stream and extend in typical fan-shaped form from Holland Patent nearly to the Mohawk River. They are coarse grained and poorly sorted near the head of the delta and grade southwestward into silt and medium- to fine-grained sand. The finer grained deposits underlie the broad sand plain south and west of Floyd as well as the irregular sand hills near Griffiss Air Force Base and the extensive flat-topped terrace or bench between Marcy and the Mohawk River. The unconsolidated deposits in Ninemile Creek valley range in thickness from 30 feet near the head of the delta at Holland Patent, and along its south edge, to 140 feet near the center of the delta front east of the airbase. The thickest deposits overlie a buried preglacial bedrock channel of an earlier Ninemile Creek whose axis lies north of the present creek and extends southwestward from a point just east of Floyd. The present Ninemile Creek has trenched the delta along its south side and cut through the sediments to bedrock in many places. As a result the upper beds are well drained, particularly in the reach of the delta between Holland Patent and Floyd, and conditions for storage of large quantities of water are poor. Moreover, because the streambed rests on bedrock, opportunities for induced recharge of stream water are poor.

The most favorable area for development of moderate ground-water supplies in the valley of Ninemile Creek seems to be in the area of the buried bedrock channel from a point just east of Floyd to Griffiss Air Force Base. The sand and gravel filling of the channel in this area is a potentially productive source of water because the stratified deposits are thick, are saturated for much of their thickness, and in at least one area are crossed by Ninemile Creek, which is a potential source of induced recharge. Only a few wells tap the sand and gravel in Ninemile Creek valley. They supply sufficient water for domestic and agricultural needs, but their yields give no indication of the maximum available. Larger yields probably could be obtained if the wells were designed for higher productivity.

The depths to water in most wells in the sand and gravel deposits of the Mohawk River lowland range from 5 to 40 feet below the land surface. In general the water table is closer to the land surface in the valley bottoms than in the terraces or along the sloping valley sides. In the flat valley bottoms, such as the low plain west of Rome and the Mohawk River channel, the water table is nearly level and stands generally only slightly higher than the level of the adjacent stream. Under natural conditions it slopes toward the streams or open bodies of water such as swamps, ponds, and reservoirs. The maximum depth to the water table (about 50 feet) is in the riverward faces of the sand and gravel terraces, where the slopes are steep and well drained.

No record of the fluctuations of water levels has been collected in the Utica-Rome area. The water levels in wells in the area close to the Mohawk River and its larger tributaries are probably affected by changes in river level. Water levels in some wells may be affected by the pumping of nearby wells. Elsewhere in the Mohawk River lowland, the fluctuations probably follow the general seasonal patterns of precipitation and evapotranspiration; the range of fluctuations is probably between 3 and 15 feet per year.

Observations of the water level during 1926-55 in a well tapping sand and gravel near Woodgate, about 17 miles north of the area, and observations at other wells in the State show that water levels commonly rise in early spring in response to infiltration from rain and melting snow. They decline in late spring, summer, and early fall in response to transpiration and evaporation during the growing season. Although water levels have fluctuated from year to year, the long-term levels have been stable, and there has been no regional lowering of ground-water levels. In the well at Woodgate, the water level declined to the lowest stage of record during the period of deficient precipitation and low temperatures in 1930–31.

Only a few data are available on the chemical quality of ground water from sand and gravel aquifers in the Mohawk River lowland. In general, water from these deposits is less mineralized than water from the bedrock formations (fig. 10). The analyses given in table 6 show that the quality of the water from sand and gravel formations varies widely. The water contains moderate concentrations of dissolved solids, primarily calcium bicarbonate, and is soft to moderately hard. Water from sand and gravel forming the Ninemile Creek delta (wells Oe 146 and 652 on pl. 1) may be somewhat softer and less mineralized than water from sand and gravel in the Mohawk River channel. Iron concentrations are somewhat high and in wells Oe 42 and 269 were sufficiently high (more than 0.3 ppm) to cause discoloration of laundry and deposition in boilers and cooking utensils. However, with the exception of that containing high concentrations of iron, the water is suitable for most uses. The iron content and hardness can be reduced with suitable treatment.

The water from well Oe 47, which penetrates sand in the Mohawk River channel, is abnormally high in dissolved mineral matter (627 ppm) and is hard; sodium and chloride are the predominant ions. The concentration of chloride exceeds the generally recommended maximum limit of 250 ppm for domestic use of water. The abnormal concentration of these constituents may have resulted from the upward movement of water into the sand from the underlying bedrock formations, which contain scattered accumulations of salt water associated with natural gas.

No data are available on the temperature of ground water in the area. It is presumed to be fairly constant throughout the year, except in wells that receive water by infiltration from adjacent streams. The temperature of water in most wells probably varies seasonally between 45° and 52° F; the average is about the same as the average air temperature of 47° F. Water from wells that receive infiltration from adjacent streams probably has a slightly greater range in temperature.

ORISKANY AND SAUQUOIT CREEK VALLEYS

The unconsolidated deposits of glaciofluvial origin in the valleys of Oriskany and Sauquoit Creeks consist chiefly of sand and gravel which in some places are intercalated with lenses of silt and clay. The water-bearing beds of sand and gravel supply water to a few fairly large industrial wells and are potential sources of additional supplies.

Little is known of the character and water-yielding capacity of the valley-fill deposits in the valleys of Oriskany and Sauquoit Creeks, because records of only a few wells that obtain water from them are

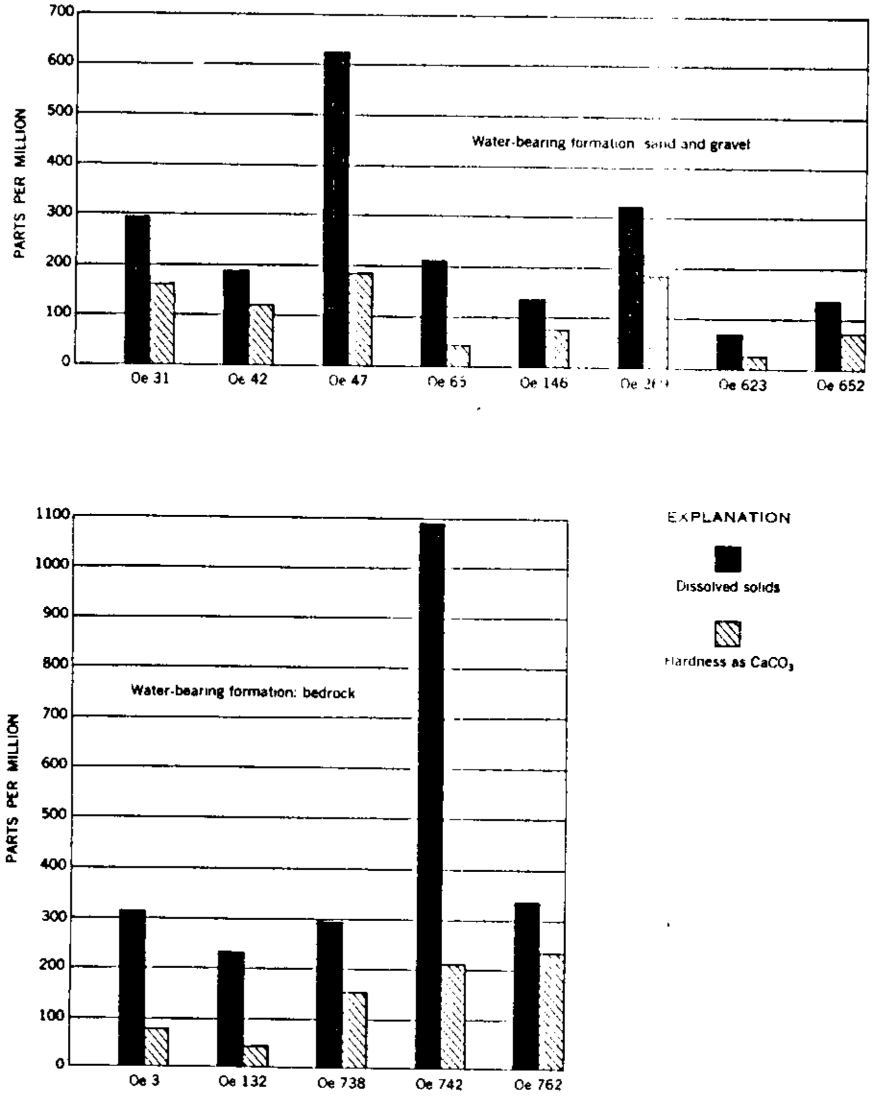

FIGURE 10.—Concentrations of dissolved solids in and hardness of ground water.

available. Most of the deposits are below an altitude ranging from about 700 feet on the south, near the border of the Utica-Rome area, to 600 feet at the north ends where the creeks enter the Mohawk River lowland. The present valley bottoms of the creeks and the flat-topped terraces flanking the creek bottoms are underlain by these deposits. The deposits also overlie and fill a buried segment of a former Oriskany Creek valley that lies between Oriskany and Whitesboro east of the present mouth of Oriskany Creek, and two eastward-

TABLE 6.—*Chemical analyses, in parts per million, of water from selected wells in the Utica–Rome area*

trending buried valleys that seem to have connected Oriskany and Sauquoit Creeks before the last glaciation. The eastward-trending valleys underlie the present Mud Creek valley between Clinton and Utica and the depression occupied by the tracks of the New York Central Railroad between Clark Mills and Utica, respectively. The coarsest deposits are those forming the terraces, but because they are poorly sorted and well drained, they probably would yield only small quantities of water to wells.

The most productive water-bearing beds are associated with the bottom deposits of the present creek valleys. In Sauquoit Creek valley between Willowvale and Whitesboro, the deposits consist of sand and gravel interfingered with silt and clay. They have accumulated in the valley to a maximum known depth of more than 100 feet; of this thickness the coarser materials occur mostly in the upper and lower parts of the section; the finer grained materials are in the middle. An industrial plant 1 mile north of Willowvale has 3 wells about 500 to 600 feet from Sauquoit Creek. The wells range in depth from 112 to 132 feet and penetrate sand and gravel. Their yields range from 64 to 171 gpm, and they have a combined yield of 290 gpm. The percentage of fine-grained material (silt and clay) in the bottom deposits increases downstream from Willowvale, and several wells in the creek valley between New Hartford and Whitesboro obtain moderate supplies from shallow sand and gravel deposits overlying silt and clay.

Little information is available on the water-yielding capacity of the deposits in Oriskany Creek valley and in the buried channels tributary to the creek. The valley fill consists chiefly of fine sand, silt, and clay which in some places is interstratified with beds or lenses of sand and gravel. The deposits have accumulated to depths of at least 100 feet in many places. More than 100 feet of material has accumulated in the buried channel of Oriskany Creek near its mouth and more than 90 feet in the depression between Utica and Clark Mills. The water-bearing sand and gravel deposits yield moderate supplies to wells and should yield large sustained supplies to wells so situated as to induce infiltration from Oriskany Creek.

Ground water in sand and gravel deposits in the valleys of Oriskany and Sauquoit Creeks has about the same chemical quality as that in the Mohawk River lowland. It is moderately high in dissolved mineral matter, as shown by the analyses of water from wells Oe 31 and Oe 65 (table 6) and may be moderately hard. The hardness is due to the calcium and magnesium dissolved from limestone in the area and possibly from fragments of this rock which are included in the gravel beds. Water from well Oe 65 contains 1.96 ppm of iron, an especially high concentration of iron. The hardness of water from wells receiving water by infiltration from Oriskany and Sauquoit Creeks may be similar to that of water from the creeks. In addition, water from these wells may be adversely contaminated by industrial wastes in the stream water, particularly wells in the lower reaches of the creeks where contamination of the water is greatest.

OTHER SOURCES

The ground moraine and isolated bodies of sand and gravel that are the surficial deposits outside the areas discussed previously and the consolidated bedrock which underlies the entire Utica-Rome area are also sources of ground water.

Most of the uplands above an altitude of about 600 feet in the Utica-Rome area are covered by a mantle of ground moraine and small isolated bodies of sand and gravel. In the lowlands ground moraine occurs beneath the stratified deposits. The ground moraine is mostly till, a direct deposit of the glacial ice consisting generally of a clay matrix containing sand and boulders. The till in this area is tough and compact and is often called hardpan by well drillers and farmers. It commonly has a very low permeability. Owing to its low permeability, till generally yields less than 1 gpm to wells but is an important source of water in quantities adequate for homes and small farms. Probably the maximum yield that can be obtained from a well tapping till is between 200 and 2,000 gpd. The water is commonly obtained by means of large-diameter dug wells which provide large infiltration area and storage capacity.

Supplies adequate for the needs of rural homes, small municipalities, and industries requiring only small quantities of water may be obtained from some of the small bodies of sand and gravel that overlie the till in the gently sloping parts of the upland areas. Ordinarily this sand and gravel mantle is a recent deposit of streams draining the upland. Although thin and of small areal extent, the sand and gravel bodies may yield small to moderate amounts of water to shallow wells of proper construction, especially where they are adjacent to streams. One of two wells of the Westmoreland Water District finished in these sand and gravel bodies was pumped at the rate of 380 gpm, the other at 194 gpm. The specific capacities of the wells were 69 and 16 gpm per foot, respectively.

Where exposed, the bedrock consists of sedimentary rock formations composed principally of shale, sandstone, limestone, and dolomite. As described in table 5, they include the Utica and Frankfort shales, the Clinton group containing the red iron ores, the Lockport dolomite, the Vernon and Camillus shales, and the Bertie and Manlius limestones. The well-known Utica and Frankfort shales underlie the bottom and sides of the Mohawk River lowland and the upland north of the Mohawk River. The Vernon and Camillus shales are the distinctive red and green shales that form the steep northern slope of the Allegheny plateau; the limestone formations are the distinctive capping of the plateau and underlie the highest areas in the southern part of the Utica-Rome area. The physical characteristics and water-yielding capacity of the bedrock formations are shown in table 5 and their distribution is shown on plate 2. Limestone and dolomite beds of the Trenton group underlie the Utica shale in this area but are not exposed, although rocks of this group have been found in many deep wells.

Most ground water in the bedrock is transmitted through secondary openings along joints, bedding planes, and faults. As a result the yields of wells penetrating these formations range widely. The yields generally are small but are adequate for the needs of farms or households, and the wells are an important source of water in areas in which more productive aquifers are not available. The yields of 77 wells tapping the bedrock formations in the area average about 8 gpm and range from less than 1 to 75 gpm. Wells tapping the Clinton group yield, on the average, a little more water than the other formations; 18 wells tapping the Clinton have an average yield of 9½ gpm, as compared with an average yield of 7½ gpm for 26 wells tapping the Utica shale. Wells tapping the other consolidated rock formations in the area generally yield less water than wells in the Utica shale. Few wells draw fresh water from depths greater than 250 feet. In fact, deeper drilling in the outcrop area of the Utica shale has tapped salt water and occasionally natural gas (Dale, 1953, p. 176–182).

The chemical quality of water from the bedrock differs greatly from place to place, partly because of differences in geology. (See table 6.) The concentration of dissolved solids in water samples collected at scattered locations ranged from 232 to 1,090 ppm. The mineral matter consists principally of calcium, sodium, and bicarbonate and lesser amounts of magnesium. However, water from well Oe 742 (dissolved-solids content, 1,090 ppm) contained 220 ppm of sulfate and 262 ppm of chloride. Water from well Oe 762 contained 1.7 ppm of fluoride, which is slightly greater than the content recommended for drinking water (U.S. Public Health Service, 1946). Moderately large amounts of mineral matter were present in water samples from three other wells (wells Oe 3, Oe 132, and Oe 738 in table 6), and water in these was soft and moderately hard. Because of the difference in chemical composition, a general evaluation of the chemical quality of water from bedrock cannot be made. However,

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The water from the Utica and Frankfort shales commonly is moderately hard (wells Oe 3 and Oe 132 in table 6) and in some wells has a slightly sulfurous taste and odor. Salt water and natural gas from the limestone beds underlying the Utica shale occur in several wells in the Rome area (Dale, 1953, p. 176–182). Ground water from the Clinton group is generally suitable for most uses (well Oe 738, table 6), although water from the limy beds of the Clinton is hard.

Probably the water of poorest quality obtained from bedrock in Utica-Rome area is drawn from the Lockport dolomite and the overlying Vernon and Camillus shales. The Lockport dolomite yields water that is hard and has a noticeable hydrogen sulfide taste and odor. Also, high sulfate and chloride concentrations in the water from the Lockport dolomite are reported by many well owners. (See also well Oe 742, table 6.) No analyses of water from wells tapping the Vernon and Camillus shales are available, but a high mineral content and undesirable concentrations of sulfate and chloride have been reported in water from wells in the outcrop areas of these formations. The sulfate and chloride are probably derived from beds of gypsum and salt, which occur in the Vernon and Camillus shales in the Utica-Rome area. The calcareous mud or tufa, known locally as horse bone, that is deposited near the head of the village of Clinton and Hamilton College reservoirs is derived from minerals dissolved from the Vernon and Camillus shales by circulating ground water. The water from many small brooks and tributary streams that originate in springs draining the slopes underlain by the Vernon and Camillus shales is moderately to very hard as shown by analyses reported by Dale (1953, p. 19–20). Water from the younger limestones in the area (Bertie and Manlius limestones) may also be very hard. (See well Oe 762, table 6.)

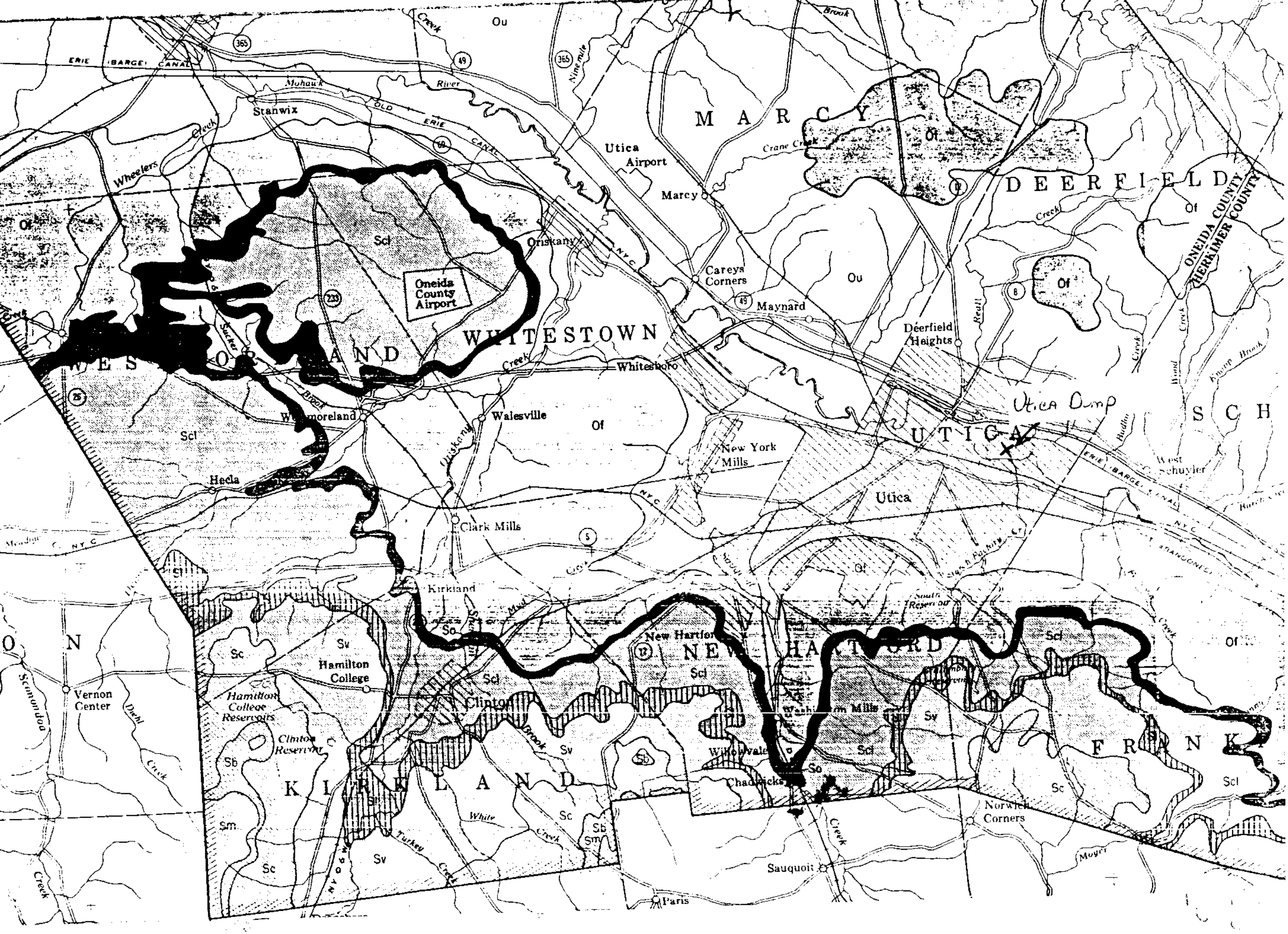
PUBLIC WATER-SUPPLY SYSTEMS

Seven public water-supply systems in the Utica-Rome area serve about 92 percent of the population and some industries. All the systems are supplied by surface water. The two largest public water-supply systems are those of the cities of Utica and Rome (fig. 11).

These cities obtain most of their water from sources outside the Utica-Rome area. Descriptive data for public water-supply systems are summarized in table 7, and analyses of finished water are given in table 8.

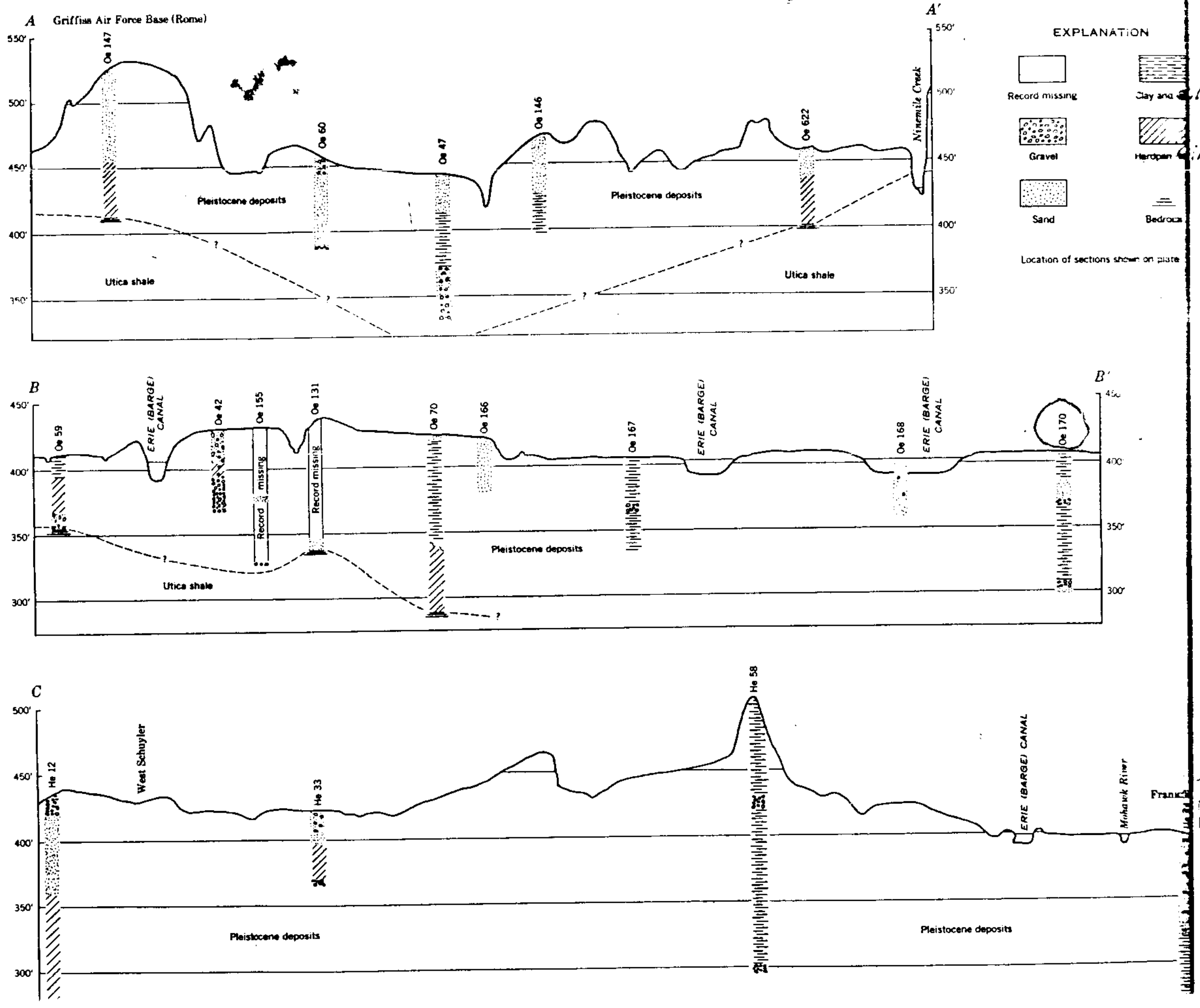
Utica obtains its supply from Hinckley Reservoir on West Canada Creek and Graffenburg Reservoir southeast of the city. Hinckley

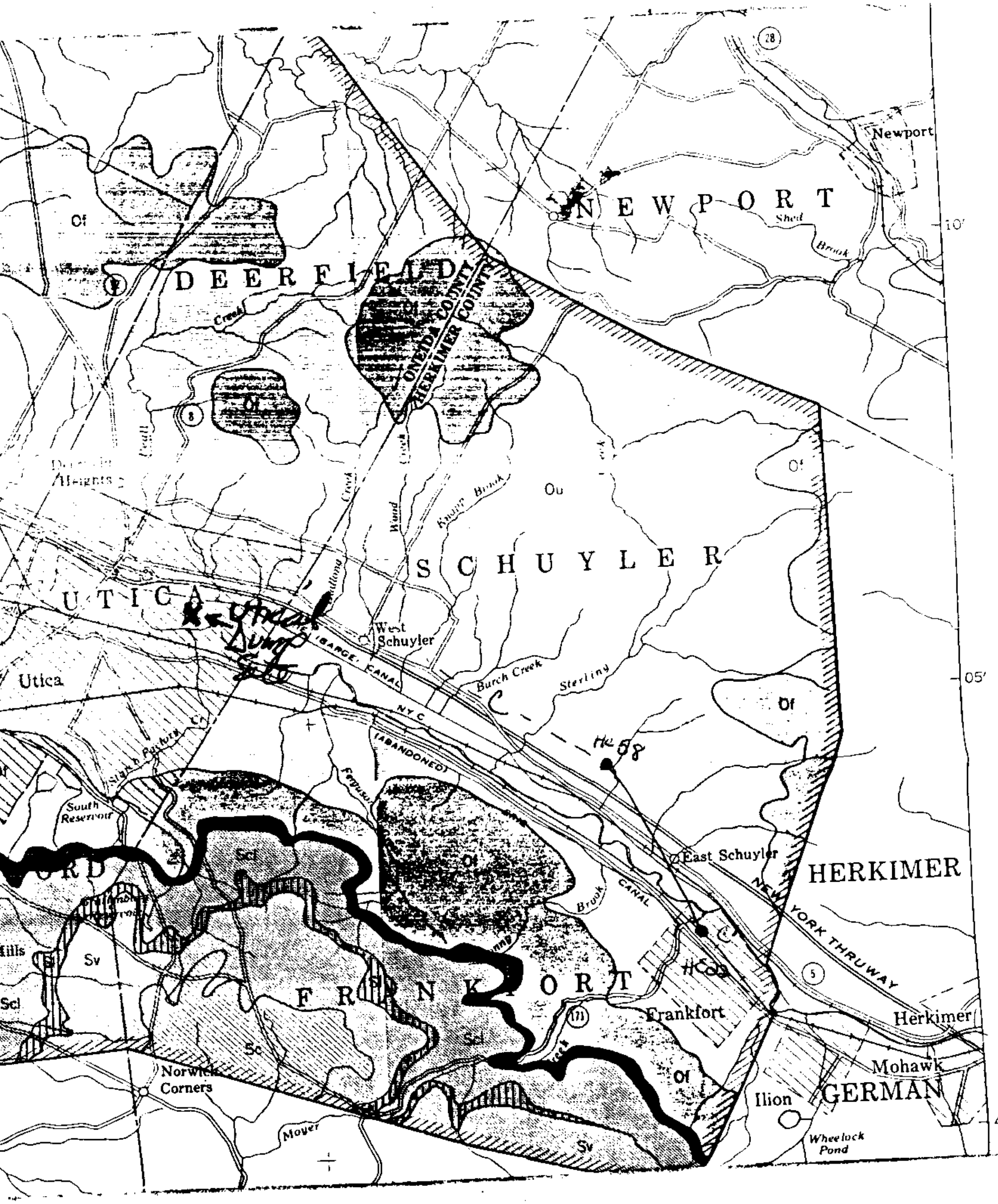
Map of Bedrock Geology



UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER-SUPPLY PAPER 14
PLATE 3





Lockport dolomite

Nearly black dolomite and shale. Furnishes small to moderate quantities of water of poor quality

Niagara

Scl — Oneida Co. Airport

Clinton group

Gray and green shale and sandstone with a few beds of dolomite, conglomerate and red iron ore. Furnishes small supplies of water

Oneida conglomerate

Quartz-pebble conglomerate and sandstone. Unimportant as a water source

Of

Frankfort shale, includes Pulaski shale

Gray sandy shale with thin dolomite beds. Furnishes small to moderate quantities of water of good quality

Upper Ordovician

ORDOVICIAN

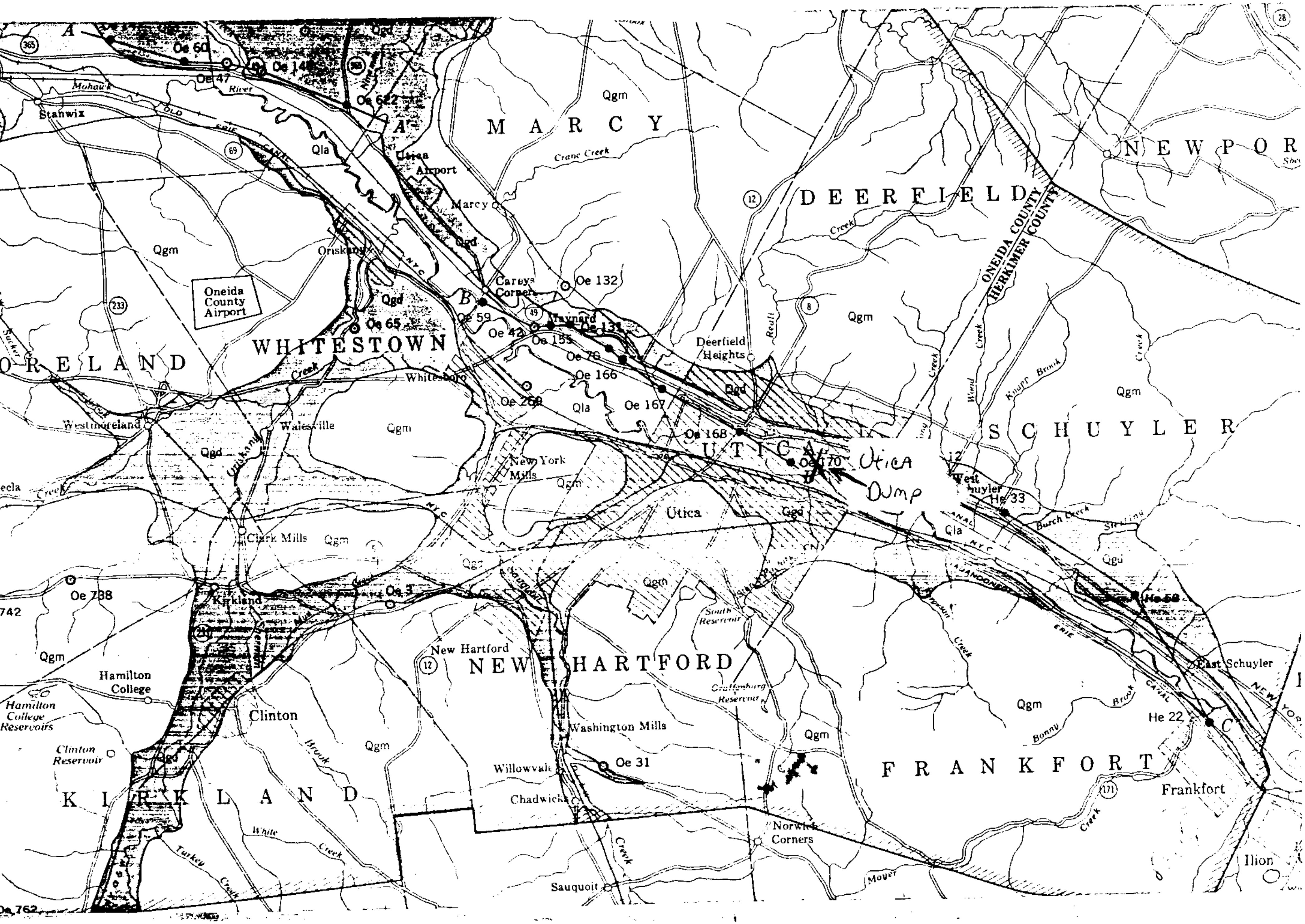
Ou — Utica & Frankfort

Utica shale

Black carbonaceous shale. Furnishes small to moderate quantities of water, generally of good quality

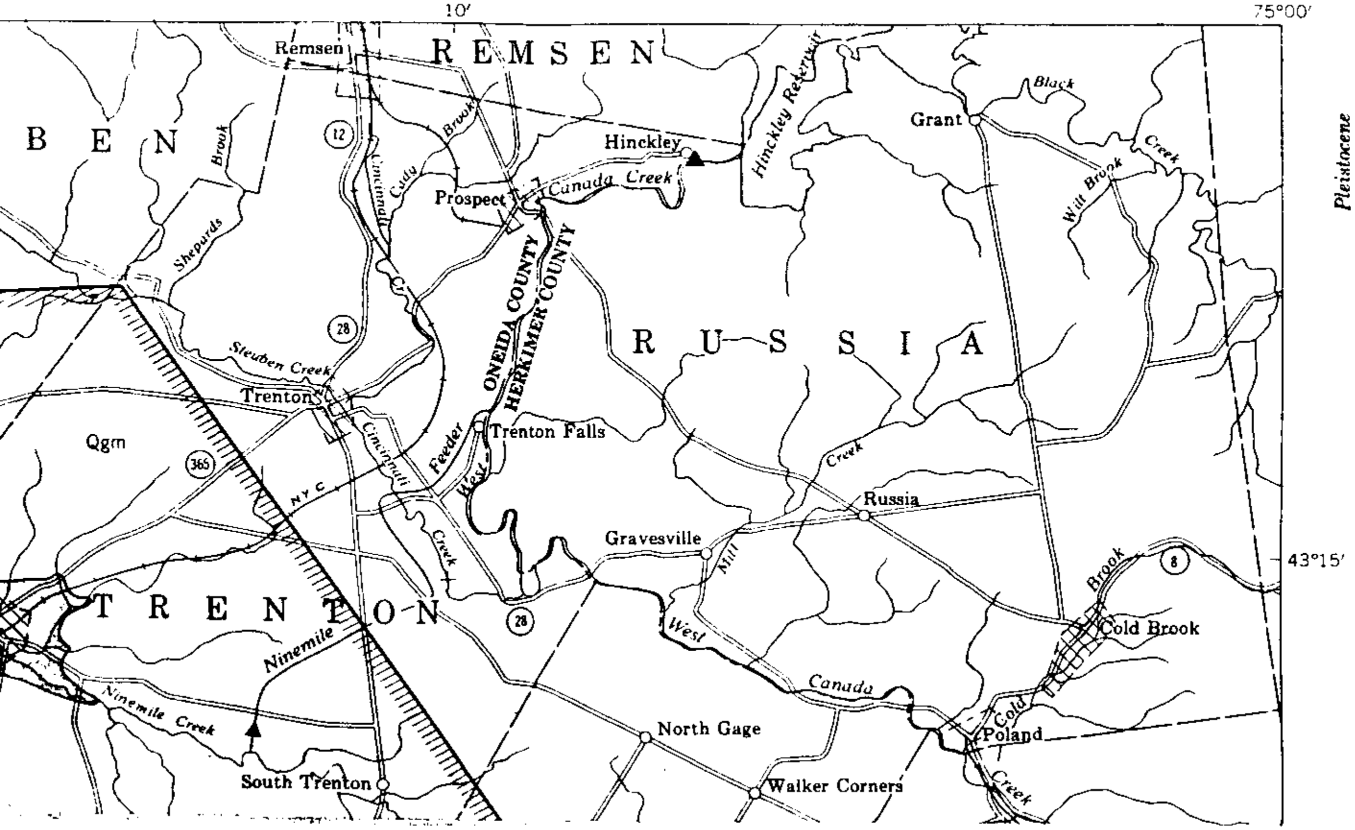
Contact, approximately located

Map of Surficial Deposits



Map of surficial deposits

WATER-SUPPLY PAPER 1499-C
PLATE 1



EXPLANATION

QUATERNARY

Pleistocene and Recent

Qla — Utica & Fecoula

Lacustrine and alluvial deposits

Clay, silt, and sand. Small to moderate quantities of water supplied from beds of sand

Pleistocene

Qgd

Glaciofluvial and deltaic deposits

Sand and gravel. Most productive aquifer in area. Supplies moderate to large quantities of water

Qgm — Oneida

Ground moraine till

Unsorted clay, silt, and boulders. Includes some areas of bedrock. Generally a poor aquifer but furnishes small supplies to domestic dug wells

Contact, approximately located

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Stream gaging stations

Appendix 1.4.3-2

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Geology of the Utica Quadrangle, New York

BY

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Temporary Geologist, New York State Museum

With a chapter on the Silurian System by
W. L. Grossman Ph.D.

1784

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northwest and probably with conformity on older Utica shale in the east; they increase from 200 feet in northwestern New York to about twice that amount in the northwest part of the Utica quadrangle.

The Cincinnatian epoch is represented only by the Frankfort shale and sandstone that reflect the shallowing of the sea in their coarser textures and the finely cross-laminated sands. This may have been partially a result of the filling of the earlier depression by sediment but, inasmuch as early Cincinnatian seas are of limited extent elsewhere in the interior of North America, there may also have been a lowering of sea level. Subsequently, the region was raised above the sea in a movement that affected the whole Adirondack region, for younger Cincinnatian sediments are thick and continuous in Quebec, Ontario and western New York and lack only the Richmond group in the region immediately to the west. In the absence of latest Ordovician beds, the rocks of the quadrangle do not evidence the advent of the great Taconian Revolution that produced coarse sediments in Pennsylvania and great disturbance in western New England at the close of the period.

SILURIAN PERIOD

The representatives of the Niagaran and Cayugan series in the southern part of the quadrangle were formed along the eastern margin of an embayment that extended northward from central Pennsylvania. To the east was lowland along the south flank of the Adirondack dome. Whether the great faulting in the Adirondack region that gave the present block mountain structure was of early Silurian date or a little later has not been conclusively proven; in any case, the Adirondack area was relatively higher than the region to the south and west and probably higher than the great thrust sheets that had been formed in the Taconian Revolution.

The Oneida formation has quartz pebble conglomerates that were laid in shallow water on the margin of the Clinton sea. These pebbles, similar to those in the Shawangunk conglomerate of much greater thickness in southeastern New York, are believed derived by streams that flowed westward from the crystalline core of a land occupying about the present position of southwestern New England, for it is in that vicinity that the sediments are coarsest. Rocks from this source, first laid in an earlier epoch of the Silurian, reached the Utica region when seas advanced from the southwest in early Clinton time and the Oneida is the conglomerate formed along the shore of the sea. The subsequent Clinton deposits, the Sauquoit, Willowvale and Herkimer formations, were laid in similar or more seaward position in the graduof these deeper or quieter water beds lacks the rippled surfaces, channels and cross-lamination that result from the shifting of materials in the shallower or more disturbed near-shore zones.

The stratified rocks within the quadrangle present a part of the story but it is only from the gathering of data from the greater region that a connected record can be gained.

CAMBRIAN PERIOD

The Little Falls dolomite, the only Cambrian formation within the area, formed during the closing stages of the Cambrian period. The dolomites, with their *Cryptozöon* reefs, and intercalations of cross-bedded quartz sandstone, are suggestive of the shallow water deposition near low-lying lands of quartz-bearing rocks. The formation is the attenuated border of a thicker sequence that spreads southward into Pennsylvania. New York State had a low peninsula extending from the region of the present Lake Ontario eastward to the northern Adirondacks (Kay, 1942); to the north was an embayment that reached to Ottawa and beyond and along the southern shore of which were laid the Cambrian deposits of the northwestern Adirondacks. The northern shore of the Little Falls sea coursed south of westward from the central Adirondacks to the southwest corner of the State, and hence Little Falls beds are absent along the Black river and in Ontario north of Lake Ontario but present in deep wells that have been drilled south of the lake.

ORDOVICIAN PERIOD

The rocks representing the two older epochs of the Ordovician, the Canadian and Chazyan, are unrepresented in the area, though the earliest Canadian Tribes Hill formation approaches its limit on the southeast and may be present at depth in that part. This sea had similar distribution to that of the late Cambrian but was less extensive in the immediate region, though somewhat more so along the northern side of the Ottawa embayment north of the Adirondack peninsula. Thus the Utica area was a lowland during a large part of the Ordovician, until the coming of the Mohawkian seas.

The Mohawkian series outcrops over the greatest part of the quadrangle and has greater thickness than any other. Moreover, the rocks reflect the changing conditions that pertained in the Adirondack belt and eastward during the epoch. Whereas the limestones of the Chazyan series had been laid in the Champlain trough or belt of depression in eastern New York, those of the succeeding early Mohawkian, the Black River group, are more fully developed and for the most part limited to the sinking Rideauan trough that formed in a belt extending from Ottawa through the Thousand Islands toward Syracuse. Lower Trenton time marked the introduction of the Adirondack arch, a northeast-trending belt that was depressed less than its two flanks. With the advent of the Vermontian Disturbance, a period of great uplift in western New England, the Champlain trough was deeply depressed, gaining a mile of muds and sands; the changing facies of the Denmark formation from shallow-laid limestone at the northwest to thicker, deeper-laid argillites at the southeast within the quadrangle, is indicative of a flexure into a belt to the southeast that sank more rapidly than it was filled by sediments eroded from lands in western New England. In later Trenton time, the Cobourg limestone formed to the northwest of a broad arch that was flanked by Utica muds on the southeast, in the Herkimer region and eastward. Thus the Adirondack belt that had been less subsiding than its flanks in early Trenton came to be more deeply depressed than the area to the northwest in later Trenton and to lie on the margin of the still more deeply depressed Champlain belt farther east. And finally, further eastward tilting of the area permitted the transgression of the late Utica muds into the region to the west.

The Black River group attains a thickness of more than 250 feet along the axis of the Rideauan trough and of the three formations, only the Lowville, having a tenth the thickness of the whole, is present in the quadrangle. The basal rocks have been derived from the sands and clays that formed on the margin of the advancing sea. The overlying limestones are of fine texture, and plane lamination, but there are occasional ripple marks and mud cracks, conglomerates of fragments like adjoining continuous beds and vertical burrows of worms or other organisms; marine fossils are common but difficult to extract because of glassy fracture of the limestone. The characters suggest that there were lime muds laid in shallow water on broad flats margining the extensive seas to the west; studies in northwestern New York and Ontario have shown that rocks of this lithology pass into abundantly fossiliferous, more shaly limestone in the deeper part of the Rideauan trough.

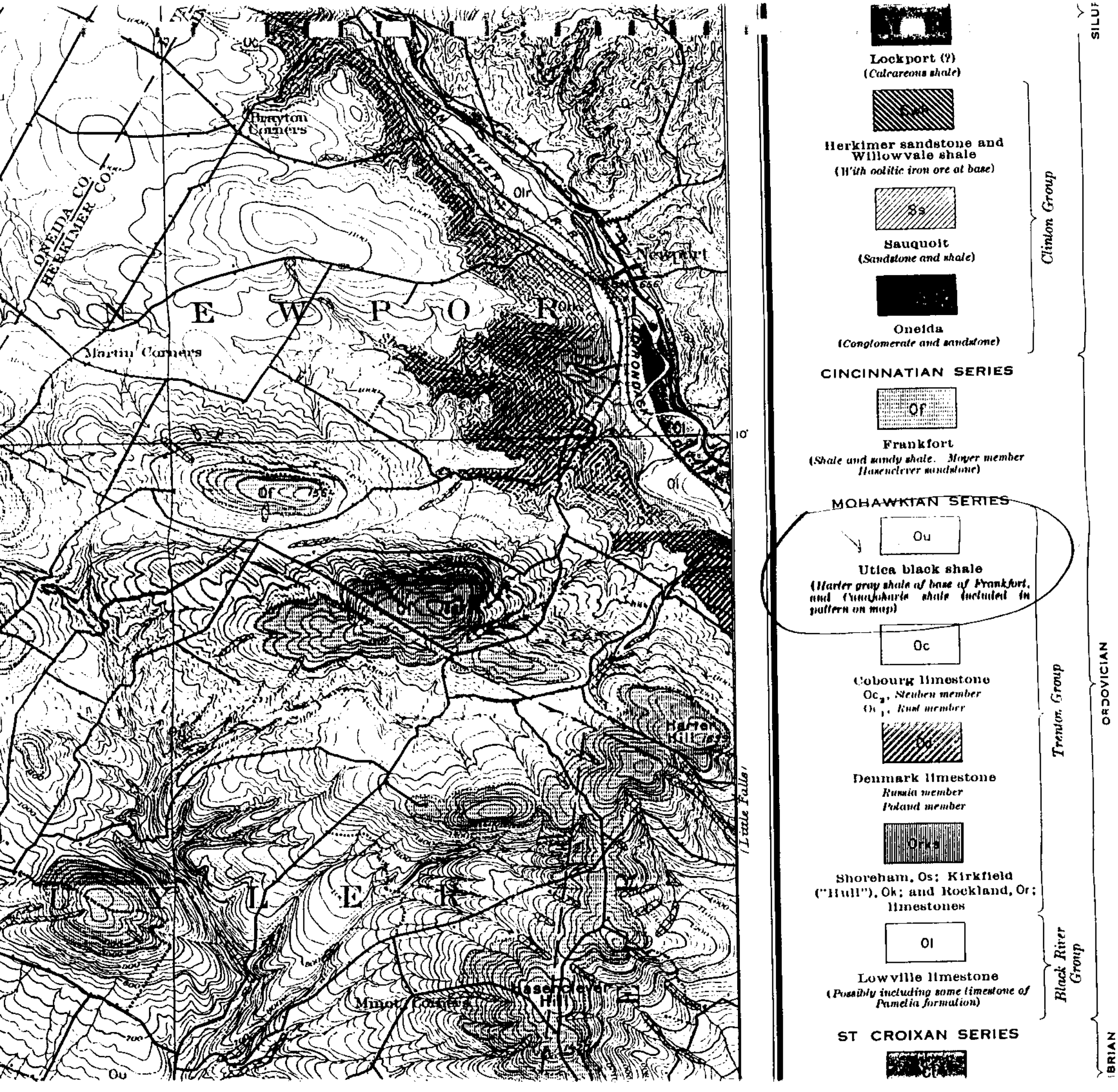
The Rockland is also best developed in the Rideauan trough and in the Champlain trough east of the Adirondack axis. The sea coursed irregularly over the intervening area, and is represented by small thickness in scattered areas. The distribution in the Utica quadrangle and to the east evidences the sinuous margin of the sea. The Kirkfield and Shoreham show in their progressive southeastward thinning and the disappearance of the latter at Canajoharie, and in the relative increase in proportion of coarse-textured, coquinal limestones and calcite sandstones, their approach toward the Adirondack axis. Giant ripples were formed by tidal currents in the coarser beds in shallow water and the abundant shells drifted into heaps and were fragmented. The southeastward convergence or thinning is thought to be reflected in the coarser texture rather than to be the result of intervening or following erosion, though the thinning of the Kirkfield is in part through overlap, a result of its having been laid in an advancing sea. The Shoreham is distinctive in that it is the last of the Ordovician limestones in the Champlain belt, the succeeding mudstones and sandstones marking the rise of lands far to the east in middle Trenton, Denmark time.

There is a progressive change in the Poland and Russia members of the Denmark from the shallow water, coquinal limestones of the Black River valley to the black shales of the Mohawk below Canajoharie, a part of the change being shown in the Utica area. It was not until the seas crossed the depressed Adirondack arch in Poland time that the influence of the streams carrying sands and clays from lands formed in Vermontian Disturbance was effective in introducing argillites in the Utica area.

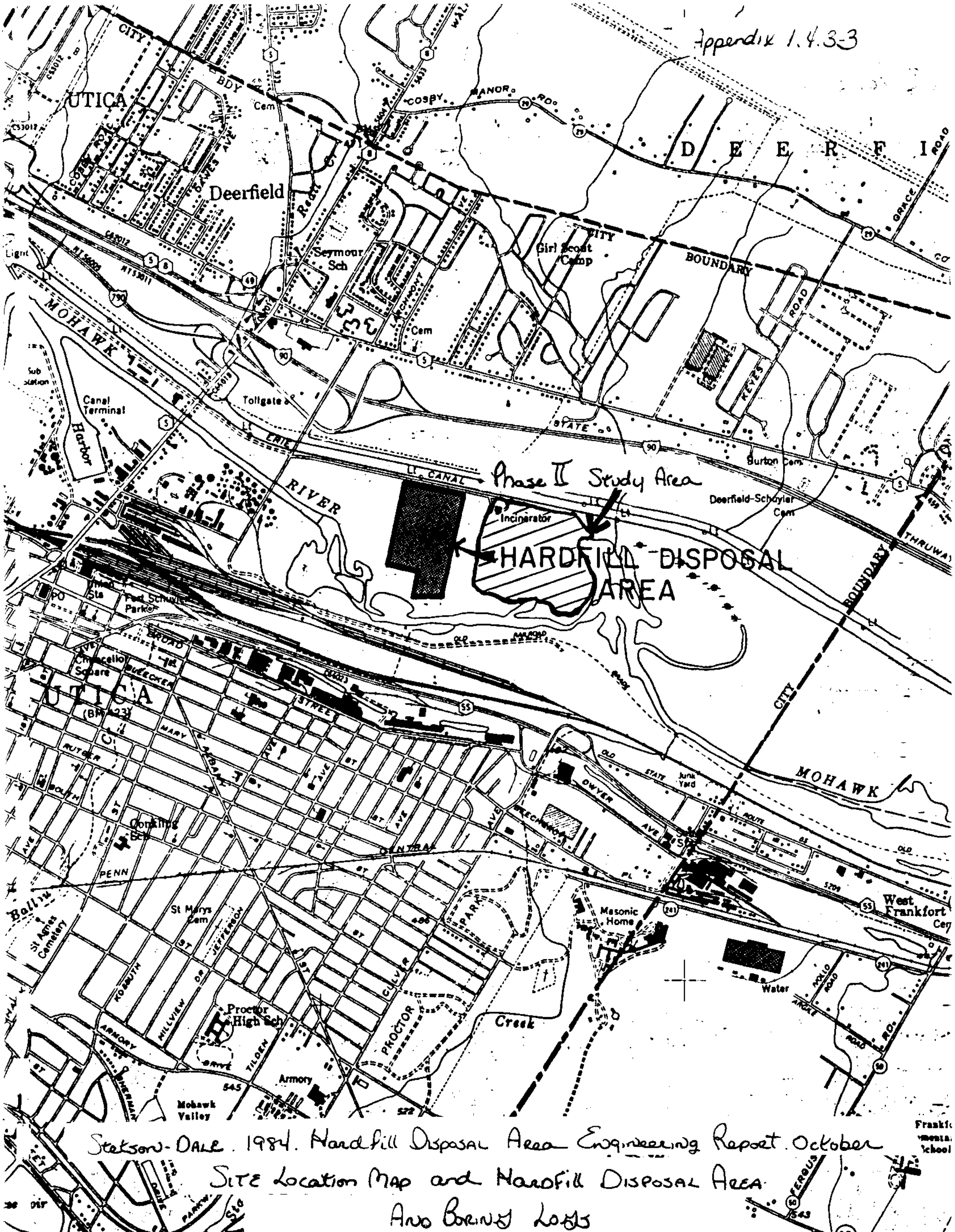
The southwestward disappearance of the Cobourg limestone seems due to the Rust member's grading into black shale and the Steuben's not having been laid. The limestones do not continue the change into successively deeper water sediments exhibited by the Denmark limestone, and the younger Cobourg beds are coarse-textured calcite sandstone not grading directly into the middle part of the Utica shale. Moreover, younger Cobourg limestones come in northwestward along the lower Black River valley, the Upper Utica coming to succeed them conformably in southeastern Ontario. The older Utica shales are limited along the Mohawk to the region to the east of the quadrangle and seem to have been separated in the time when the later Cobourg was being laid by a low arch that prevented the westward spread of the muds from the western Champlain trough. More thorough faunal study of the black shales along West Canada creek will be needed before the relations of Cobourg and Utica rocks are fully understood.

In latest Trenton time, as the upper Utica shale of area was laid, the entire region was depressed and tilted southeastward. The shales are fine-textured plane-laminated and contain remains of delicate graptolites, laid in deeper water than the underlying limestones in the northwest. They lie with disconformity on the Cobourg in the


City of Utica Dump
Maynard
Deerfield
Smith Hill
Of
Ou
708
618
Reels
Barker Corners
West Schuyler
S C H
MOHAWK
ERIE CANAL
WEST SHORE R.R.
NEW YORK CENTRAL AND HUDSON RIVER R.R.
RIVER
UTICA
Harbor
Knapp
Burch
Brook
Creek
Sterling Creek
475
Starch
Sc
Ss
Frankfort Hill
1620
Norwich Corners
Black Creek
R K


Lockport (?)
(Calcareous shale)
Herkimer sandstone and Willowvale shale
(With oolitic iron ore at base)
Ss
Sauquoit
(Sandstone and shale)
Oneida
(Conglomerate and sandstone)
Clinton Group
CINCINNATIAN SERIES
Of
Frankfort
(Shale and sandy shale. Moyer member Hasenclever sandstone)
MOHAWKIAN SERIES
Ou
Utica black shale
(Harter gray shale of base of Frankfort, and Canajoharie shale included in pattern on map)
Oc
Cobourg limestone
Oc2, Steuben member
Oc1, Rust member
Od
Denmark limestone
Russia member
Poland member
Orks
Shoreham, Os; Kirkfield ("Hull"), Ok; and Rockland, Or; limestones
Trenton Group
Ol
Lowville limestone
(Possibly including some limestone of Pamelia formation)
Black River Group
ST CROIXAN SERIES
SILUR
ORDOVICIAN
BRIAN
NEWPORT
Brayton Corners
Martin Corners
Newport
ONEIDA CO.
HERKIMER CO.
RIVER
ADIRONDACK
Harter Hill
Hasenclever Hill
Minot Corners
(Little Falls)
10'
Olr
Ol
Of
Ou
656

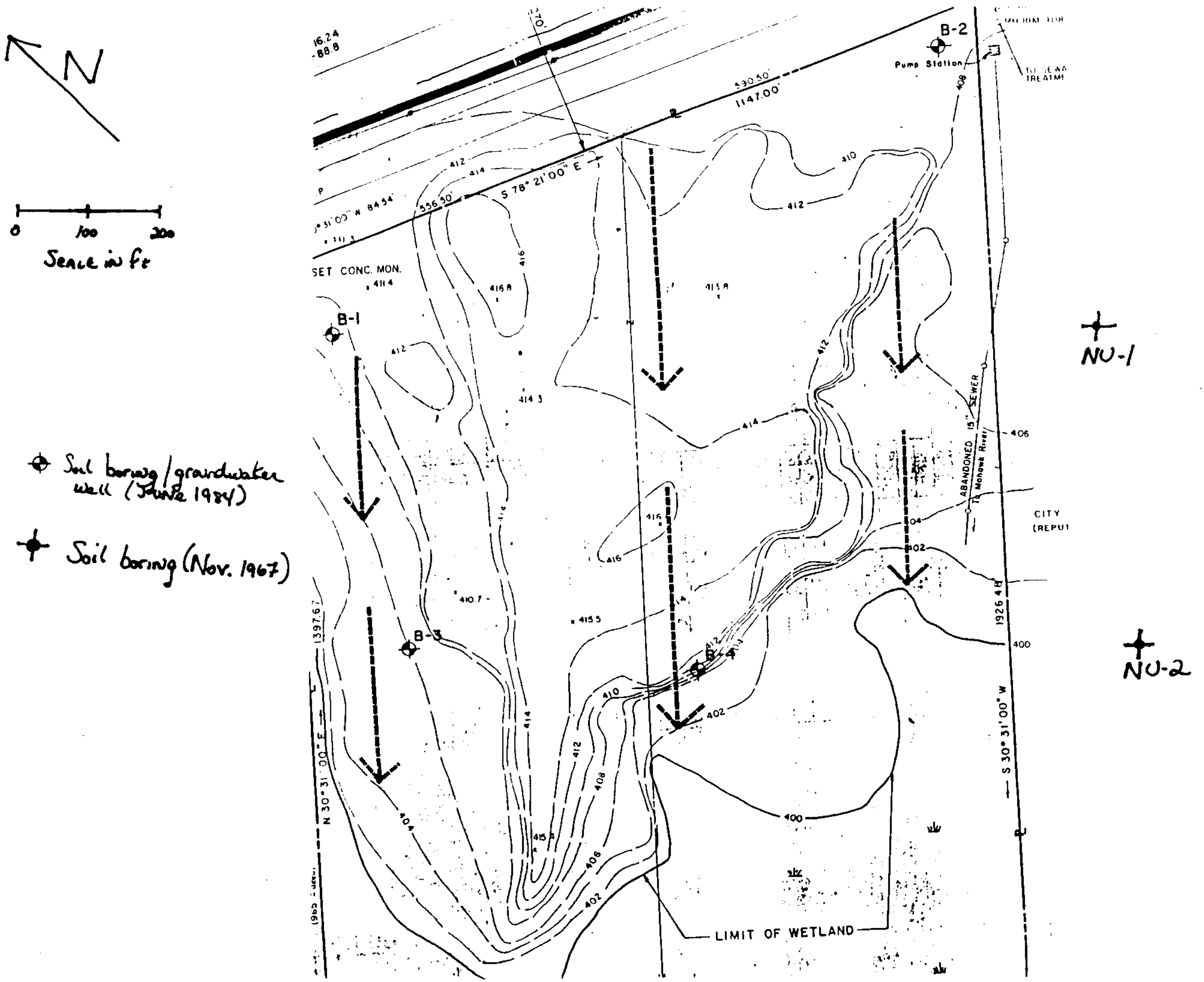
Appendix 1.4.3-3



Stetson-Dale 1984. Hardfill Disposal Area Engineering Report October

Site Location Map and Hardfill Disposal Area

And Boring Logs


N
0
100
200
Scale in ft
Soil boring/groundwater well (June 1984)
Soil boring (Nov. 1967)
B-1
B-2
B-3
B-4
NU-1
NU-2
Pump Station
TO SEWA TREATME
ABANDONED 15" SEWER
To Mohawk River
CITY (REPUT
SET CONC. MON.
S 78° 21' 00" E
S 30° 31' 00" W
N 30° 31' 00" E
530.50'
1147.00'
556.50'
1926.48
1397.67
16.24
-88.8
LIMIT OF WETLAND
400
402
404
406
408
410
412
414
416
411.4
416.8
415.8
414.3
410.7
415.5
415.4

parratt wolff inc

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

TEST BORING LOG

PROJECT Hardfill Disposal Area

LOCATION Incinerator Road
Utica, New York

DATE STARTED 6/6/84 DATE COMPLETED 6/6/84

HOLE NO. B-1

SURF. EL.

JOB NO. 8487

GROUND WATER DEPTH
WHILE DRILLING 9.0'

BEFORE CASING REMOVED -

AFTER CASING REMOVED Installed Well

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'- 2.0'	1		Auger Sample		Black moist medium dense RUBBISH, fine to coarse SAND and fine GRAVEL, some wood	
5.0	5.0'- 6.5'	2		6/7 6	13		
WL ▼							9.0'
10.0	10.0'- 11.5'	3		2/1 1	2	Black wet very soft SILT and fine to coarse SAND, little fine to medium gravel, little peat	
							13.5'
15.0	15.0'- 16.5'	4		2/3 3	6	Gray moist medium stiff organic and inorganic SILT. trace peat	
							18.0'
20.0	20.0'- 21.5'	5		3/4 3	7	Gray moist medium stiff inorganic SILT, little organic silt, little clay	
						Bottom of Boring	21.5'
25.0						Note: Installed 2" P.V.C. observation well to 20.0' with 2" screen from 15.0' to 20.0'.	

parratt wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Hardfill Disposal Area
LOCATION Incinerator Road
Utica, New York
DATE STARTED 6/6/84 DATE COMPLETED 6/6/84

HOLE NO. B-2
SURF. EL.
JOB NO. 8487
GROUND WATER DEPTH
WHILE DRILLING 13.0'
BEFORE CASING REMOVED -
AFTER CASING REMOVED Installed Well
SHEET 1 OF 1

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'- 2.0'	1		Auger Sample		Brown moist loose RUBBISH, fine to coarse SAND and fine GRAVEL	
5.0	5.0'- 6.5'	2		3/2 2	4		
10.0	10.0'- 11.5'	3		3/10 5	15		
WL ▼							
15.0	15.0'- 16.5'	4		2/4 4	8	Gray moist stiff SILT, trace wood, trace clay	15.0'
20.0	20.0'- 21.5'	5		2/3 4	7	Gray moist medium stiff SILT and CLAY	19.0'
						Bottom of Boring	21.5'
25.0						Note: Installed 2" P.V.C. observation well to 20.0' with 2" screen from 15.0' to 20.0'.	

parratt
wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Hardfill Disposal Area
LOCATION Incinerator Road
Utica, New York
DATE STARTED 6/5/84 DATE COMPLETED 6/5/84

HOLE NO. B-3
SURF. EL.
JOB NO. 8487
GROUND WATER DEPTH
WHILE DRILLING 10.5'
BEFORE CASING REMOVED -
AFTER CASING REMOVED Installed Well
SHEET 1 OF 1

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'- 2.0'	1		Auger Sample		Brown moist medium dense RUBBISH and WOOD, little fine to coarse sand	
5.0	5.0'- 6.5'	2		10/11 1	12		
10.0 ▼ WL	10.0'- 11.5'	3		5/5 5	10	Gray-brown moist to wet stiff SILT and CLAY, trace wood	10.0'
15.0	15.0'- 16.5'	4		3/4 4	8		
						Bottom of Boring	16.5'
20.0						Note: Installed 2" P.V.C. observation well to 15.0' with 2" P.V.C. screen from 10.0' to 15.0'.	

parratt
wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Hardfill Disposal Area

LOCATION Incinerator Road
Utica, New York

DATE STARTED 6/5/84 DATE COMPLETED 6/5/84

HOLE NO. B-4

SURF. EL.

JOB NO. 8487

GROUND WATER DEPTH
WHILE DRILLING 15.0'

BEFORE CASING REMOVED -

AFTER CASING REMOVED Installed Well

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'- 2.0'	1		Auger Sample		Black moist loose RUBBISH, some fine to coarse sand, some wood	
5.0	5.0'- 6.5'	2		2/1 4	5		
10.0	10.0'- 11.5'	3		7/3 4	7		
15.0 ▼ WL	15.0'- 16.5'	4		1/5 2	7		
20.0	20.0'- 21.5'	5		21/7 6	13	Brown moist medium dense WOOD	20.0'
						Bottom of Boring	21.5'
25.0						Note: Installed observation well to 19.0' with 2" P.V.C. screen from 14.0' to 19.0'.	

ONONDAGA
SOILS
· SUBSURFACE SURVEYS ·

Onondaga Soil Testing, Inc. *Subsurface Investigation*
5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250

HOLE NO. NU-1

TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 409.2'± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 10, 1967 COMPLETED NOVEMBER 15, 1967

GROUND WATER 26'11" BELOW SURFACE 12 HOURS AFTER COMPLETION

page 1 of 3

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER		SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		0-6"	6"-18" N			
	12					
	10	7	1-2	1	1'0"-2'6"	MISCELLANEOUS FILL: WOOD, ASHES, GLASS
	23					CONCRETE, ETC.
	46					(RED, BLACK, BROWN, WHITE, ETC, DAMP,
5'	1					NON PLASTIC)
	10	41	3-6	2	5'0"-6'6"	
	26					(RED, BLACK, BROWN, WHITE, ETC, DAMP,
	43					NON PLASTIC)
	1471					
10'	148					
	48	38	47-10	3	10'-11'6"	
	12					(BROWN, BLACK, WET, NON PLASTIC)
	10					
	11					
15'	25					15'0
	12	3	3-3	4	15'-16'6"	ORGANIC MATERIAL, SILT, WOOD, LEAVES
	9					(BROWN, WET, NON PLASTIC)
	9					
	9					
20'	12					
	23	1	1-1	5	20'-21'6"	(BROWN, WET, NON PLASTIC)
	17					
	13					
	11					24'0
25'	22					
	13	2	3-2	6	25'-26'6"	LOOSE MEDIUM TO FINE SAND & FINE GRAVEL
	15					(BROWN, WET, NON PLASTIC)
	14					
	12					
30'	10					30'0
	13	3	4-5	7	30'-31'6"	
	21					LOOSE MEDIUM TO FINE GRAVEL, SOME COARSE
	22					TO FINE SAND, & SILT
	23					(BROWN, WET, NON PLASTIC) 34'0"
35'	28					

NOTE: N = NO. BLOWS TO DRIVE 2" SPOON 12" WITH 140 LB. WT. 30" PER BLOW

ONONDAGA SOILS
SUBSURFACE SURVEYS

Onondaga Soil Testing, Inc. *Subsurface Investigation*

5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250

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TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 409.2'± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 10, 1967 COMPLETED NOVEMBER 15, 1967

GROUND WATER 26'11" BELOW SURFACE 12 HOURS AFTER COMPLETION

page 2 of 3

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER		SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		0-6"	6"-18" N			
	20	4	4-4	8	35'-36'"	SOFT SILT, LITTLE CLAY, TRACE OF FINE SAND (GRAY, MOIST, SLIGHTLY PLASTIC)
	21					
	21					
	31					
40'	27					
	24	4	5-5	9	40'-41'6"	(GRAY, MOIST, SLIGHTLY PLASTIC)
	22					
	28					
	27					
45'	24					
	27	3	6-6	10	45'-46'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	28					
	29					
	26					
50'	24					
	37	3	6-5	11	50'-51'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	43					
	46					
	47					
55'	49					
	30	5	6-12	12	55'-56'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	31					
	32					
	33					
60'	34					
	31	6	6-7	13	60'-61'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	33					
	35					
	34					
65'	38					
	34	6	7-8	14	65'-66'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	38					
	47					
70'	51					
	46					

ONONDAGA SOILS
·SUBSURFACE SURVEYS·

Onondaga Soil Testing, Inc. *Subsurface Investigation*

5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250 HOLE NO. NU-1

TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 409.2'± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 10, 1967 COMPLETED NOVEMBER 15, 1967

GROUND WATER 26'11" BELOW SURFACE 12 HOURS AFTER COMPLETION

page 3 of 3

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER		SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		0-6"	6"-18" N			
	34					
	49	7	9-9	15	71'-72'6"	FIRM SILT, LITTLE CLAY, & FINE SAND (GRAY, WET, SLIGHTLY PLASTIC)
	46					
	39					
75'	37					
	82	8	9-10	16	75'-76'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	77					
	92					
	89					
80'	96					
	68	13	26-32	17	80'-81'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	80					
	85					
	92					
85'	106					
	128	17	28-33	18	85'-86'6"	(GRAY, WET, SLIGHTLY PLASTIC)
	113					
	95					
	97					
90'	118					
		19	27-30	19	90'-91'6"	(GRAY, WET, SLIGHTLY PLASTIC)
95'						
		22	28-37	20	95'-96'6"	(GRAY, WET, SLIGHTLY PLASTIC)
						97'0
						FIRM CLAY, LITTLE SILT
100'						
		7	9-12	21	100'0 - 101'6"	(GRAY, WET, VERY PLASTIC)
						101'6
						BORING TERMINATED AT 101'6" NOTE: ADVANCED TEST HOLE WITH ROTARY BI FROM 90' TO 100', NO CASING USED.
105'						

NOTE: N = NO. BLOWS TO DRIVE [illegible]

ONONDAGA SOILS
SUBSURFACE SURVEYS

Onondaga Soil Testing, Inc. *Subsurface Investigation*

5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250 HOLE NO. NU-2

TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 398.8± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 15, 1967 COMPLETED NOVEMBER 17, 1967

GROUND WATER 1'2" 48 HOURS AFTER COMPLETION

PAGE 1 OF 5

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER		SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		0-6"	6"-18" N			
	5					MISCELLANEOUS;ASHES,BRICK,CINDERS,WO
	7	2	3-1	1	1'0"-2'6"	(BROWN,BLACK,RED,WET,NON PLASTIC)2'0
	3					VERY SOFT; SILT, LITTLE CLAY, ORGANI
	5					MATERIAL
5'	6					
	6			2U	5'0"-7'0"	UNDISTURBED SAMPLE (BROWN, WET,
	5					SLIGHTLY PLASTIC)
	4					24" RECOVERY
	3					
10'	4					
	3			3U	10'-12'0"	UNDISTURBED SAMPLE 24" RECOVERY
	4					2" VOID AT BOTTOM
	6					
	8					
15'	12					
	3			4U	15'-17'0"	UNDISTURBED SAMPLE 24" RECOVERY
	4					4" VOID AT BOTTOM
	14					
	16					
20'	17					
	38			5U	20'-22'0"	UNDISTURBED SAMPLE 24" RECOVERY
	43					3" VOID AT BOTTOM
	100					
	121					
25'	66					
	46			6U	25'-27'0"	UNDISTURBED SAMPLE 24" RECOVERY
	62					
	71					
	64					
30'	67					
	64			7U	30'-32'0"	UNDISTURBED SAMPLE 24" RECOVERY
	68					
	71					

ONONDAGA SOILS
·SUBSURFACE SURVEYS·

Onondaga Soil Testing, Inc. *Subsurface Investigation*

5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250 HOLE NO. NU-2

TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 398.8± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 17, 1967 COMPLETED NOVEMBER 30, 1967

GROUND WATER 1'2" 48 HOURS AFTER COMPLETION

PAGE 2 OF 5

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER		SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		0-6"	6"-18" N			
	54	6	8-8	8	35'-36'6"	FIRM SILT, LITTLE CLAY, TRACE OF FINE SAND (GRAY, MOIST, SLIGHTLY PLASTIC)
	56					
	61					
	64					
40'	68					
	36				40'-42'0"	UNDISTURBED SAMPLE NO RECOVERY
	42					
	47					
	51			9U	42'-44'0"	UNDISTURBED SAMPLE 24" RECOVERY
45'	48					
	42	7	8-9	10	45'-46'6"	(GRAY, MOIST, SLIGHTLY PLASTIC)
	48					
	66					
	66					
50'	67					
	86				50'-50'4"	UNDISTURBED SAMPLE NO RECOVERY
	90	15	16-27	11	50'6"-52'	(GRAY, WET, SLIGHTLY PLASTIC)
	102					
	98					
55'	100					
	95			12U	56'-58'0"	UNDISTURBED SAMPLE 12" RECOVERY 5" VOID AT BOTTOM
60'						
		4	6-7	13	60'-61'6"	SOFT SILT, LITTLE CLAY, TRACE OF FINE SAND (GRAY, WET, SLIGHTLY PLASTIC)
[illegible]						
		4	5-8	14	65'-66'6"	(GRAY, WET, SLIGHTLY PLASTIC)
[illegible]						

NOTE: N = NO. BLOWS TO DRIVE 2" SPOON 12" WITH 140 LB. WT. 30" PER BLOW

ONONDAGA SOILS
SUBSURFACE SURVEYS

Onondaga Soil Testing, Inc. *Subsurface Investigation*

5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250

HOLE NO. NU-2

TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 398.8± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 30, 1967 COMPLETED NOVEMBER 30, 1967

GROUND WATER 1'2" 48 HOURS AFTER COMPLETION

PAGE 3 OF 5

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER 0-6"	BLOWS ON SAMPLER 6"-18" N	SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		4	6-8	15	70'-71'6"	(GRAY, WET, SLIGHTLY PLASTIC)
75'		6	8-8	16	75'-76'6"	(GRAY, WET, SLIGHTLY PLASTIC)
						78'0
80'		5	5-7	17	80'-81'6"	SOFT CLAY, LITTLE SILT, TRACE OF FINE SAND (GRAY, WET, VERY PLASTIC)
85'		4	5-6	18	85'-86'6"	(GRAY, WET, VERY PLASTIC)
90'		6	6-6	19	90'-91'6"	(GRAY, WET, VERY PLASTIC)
95'		6	7-6	20	95'-96'6"	(GRAY, WET, PLASTIC)
100'		5	6-6	21	100'-101'6"	(GRAY, WET, PLASTIC)
105'						

Onondaga Soil Testing, Inc. *Subsurface Investigation*

5972 COURT ST. RD. • SYRACUSE, N. Y. 13206 • 463-4595

JOB NO. J-3250 HOLE NO. NU-2

TITLE WATER POLLUTION PROJECT, ONEIDA COUNTY, NEW YORK

CLIENT ONEIDA COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF WATER POLLUTION CONTROL

ELEV. 398.8± TECHNICIAN RON BUSH

DATE STARTED NOVEMBER 30, 1967 COMPLETED DECEMBER 4, 1967

GROUND WATER 1'2" 48 HOURS AFTER COMPLETION

PAGE 5 OF 5

DEPTH BELOW SURFACE	C	BLOWS ON SAMPLER		SAMPLE NO.	DEPTH OF SAMPLE	CLASSIFICATION & REMARKS
		0-6"	6"-18" N			
		45	52-56	29	140'0"- 141'6"	(BROWN, WET, NON PLASTIC) 141'6 BORING TERMINATED AT 141'6" NOTE: ADVANCED TEST HOLE WITH ROTARY BIT FROM 55' TO 140', NO CASING USED.
145'						

Appendix 1.4.3-4
p. 1 of 6

Groundwater
and
Wells

Second Edition

Fletcher G. Driscoll. Ph.D.
Principal Author and Editor

Published by Johnson Division. St. Paul. Minnesota 55112

255 – 257, +259

p 2 of 6

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(9.5a)

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pumped well to a point where the drawdown is measured
S = coefficient of storage (dimensionless)
T = coefficient of transmissivity, in gpd/ft
t = time since pumping started, in days

pumped well to a point where the drawdown is measured
S = coefficient of storage (dimensionless)
T = coefficient of transmissivity, in m²/day
t = time since pumping started, in days

The well function of u [$W(u)$] originated as a term to represent the heat distribution in a flat plate with a heating element at its center. Theis recognized that this same concept could be applied to the regular distribution of the groundwater head around a pumping well even though water flows toward the point source rather than away from it. The mathematical principles remain the same.

Analysis of pumping test data* using the Theis equation can yield transmissivity and storage coefficients for all nonequilibrium situations. In actual practice, however, the Theis method is often avoided because it requires curve-matching interpretation and is somewhat laborious. In fact, the work of applying the Theis method can be avoided in most cases. For example, if the pumping test is sufficiently long or the distance from the well to where the drawdown is measured is sufficiently small, the $W(u)$ function can be replaced by a simpler mathematical function which makes the analysis easier. The Theis method is developed at the end of this chapter, but at this point the simplified version is examined because it serves well in most cases.

MODIFIED NONEQUILIBRIUM EQUATION

In working with the Theis equation, Cooper and Jacob (1946) point out that when u is sufficiently small, the nonequilibrium equation can be modified to the following form without significant error:

$$s = \frac{264Q}{T} \log \frac{0.3\ Tt}{r^2S} \qquad s = \frac{0.183Q}{T} \log \frac{2.25\ Tt}{r^2S} \qquad (9.6)$$

where the symbols represent the same terms as in Equation 9.5 and 9.5a.

For values of u less than about 0.05, Equation 9.6 gives essentially the same results as Equation 9.5. The value of u becomes smaller as t increases and r decreases. Thus, Equation 9.6 is valid when t is sufficiently large and r is sufficiently small. Equation 9.6 is similar in form to the Theis equation except that the exponential integral function, $W(u)$, has been replaced by a logarithmic term which is easier to work with in practical applications of well hydraulics.

For a particular situation where the pumping rate is held constant, Q, T, and S are all constants. Equation 9.6 shows, therefore, that the drawdown, s, varies with log t/r^2 when u is less than 0.05. From this relationship, two important relationships can be stated:

1. For a particular aquifer at any specific point (where r is constant), the terms s and t are the only variables in Equation 9.6. Thus, s varies as log C_1t, where C_1 represents all the constant terms in the equation.
2. For a particular formation and at a given value of t, the terms s and r are the

---

*The performance of newly completed wells is often checked by pumping tests. During the test, the drawdown in the pumping well and observation wells is measured at a constant discharge rate. When properly conducted, these tests yield information on transmissivity and storage capability. See Chapter 16 for a detailed analysis of pumping test procedures.

219– 221

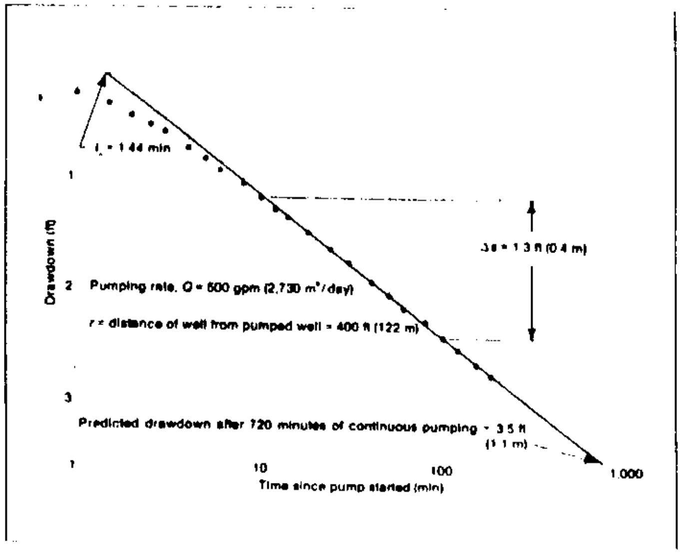

Figure 9.13. When data from Table 9.1 are plotted on semilogarithmic graph paper, most of the plotted points fall on a straight line. The reason for determining Δs and t_0 are explained in the text.

only variables in Equation 9.6. In this case, s varies as log C/r^2, where C represents all the constant terms in the equation, including the specific value of t.

By using these simplified relationships based on Equation 9.6, it is possible to derive information on the hydraulic characteristics of the aquifer by plotting drawdown and time data taken during a pumping test. The data are plotted on semilogarithmic paper* as shown in Figure 9.13. Applying the first of the relationships developed above, time, t, is plotted horizontally on the logarithmic scale; drawdown, s, is plotted vertically on the arithmetic scale. Figure 9.13 shows the data from Table 9.1 plotted as a semilog diagram, where most of the points fall on a straight line.

All the points except those representing measurements made during the first 10 minutes of pumping fit the line. During the first 10 minutes, the value of u is larger than 0.05 and so the modified nonequilibrium equation is not applicable within that phase of the test.

Transmissivity

The coefficient of transmissivity is calculated from the pumping rate and the slope of the time-drawdown graph by using the following relationship developed from Equation 9.6:

---

*Semilogarithmic graph paper is constructed so that one scale is arithmetic and the other is based on the logarithm of the number being plotted. Thus, a straight-line relationship can be shown to exist between two variables whose relationship is actually changing in time.

255– 257, +259

$$T = \frac{264\,Q}{\Delta s}$$

$$T = \frac{2.3}{4\pi}\frac{Q}{\Delta s} = \frac{0.183\,Q}{\Delta s} \qquad (9.7)$$

where
T = coefficient of transmissivity, in gpd/ft
Q = pumping rate, in gpm
Δs = (read "delta s") slope of the time-drawdown graph expressed as the change in drawdown between any two times on the log scale whose ratio is 10 (one log cycle)

where
T = coefficient of transmissivity, in m³/day
Q = pumping rate, in m³/day
Δs = (read "delta s") slope of the time-drawdown graph expressed as the change in drawdown between any two times on the log scale whose ratio is 10 (one log cycle)

In the example, Δs is 1.3 ft (0.4 m), which is the change in drawdown between 10 minutes and 100 minutes after the start of the pumping test, and Q equals 500 gpm (2,730 m³/day); so:

$$T = \frac{264 \cdot 500}{1.3} = 102{,}000 \text{ gpd/ft}$$

$$T = \frac{0.183 \cdot 2{,}730}{0.4} = 1{,}250 \text{ m}^2\text{/day}$$

Table 9.1. Drawdown Measurements in an Observation Well 400 ft (122 m) from Pumped Well

Time since pump started, in min	Drawdown, s	
	ft	m
1	0.16	0.05
1.5	0.27	0.08
2	0.38	0.12
2.5	0.46	0.14
3	0.53	0.16
4	0.67	0.20
5	0.77	0.23
6	0.87	0.27
8	0.99	0.30
10	1.12	0.34
12	1.21	0.37
14	1.30	0.40
18	1.43	0.44
24	1.58	0.48
30	1.70	0.52
40	1.88	0.57
50	2.00	0.61
60	2.11	0.64
80	2.24	0.68
100	2.38	0.73
120	2.49	0.76
150	2.62	0.80
180	2.72	0.83
210	2.81	0.86
240	2.88	0.88

Coefficient of Storage

The coefficient of storage is also readily calculated from the time-drawdown graph by using the zero-drawdown intercept of the straight line as one of the terms in the equation. The following equation is derived from Equation 9.6:

$$S = \frac{0.3\,Tt_0}{r^2}$$

$$S = \frac{2.25\,Tt_0}{r^2} \qquad (9.8)$$

where
S = storage coefficient

where
S = storage coefficient

p 3 of 6

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that the time-draw-
on a semilogarithmic
covery plot, where the
very period and the

9.40. The result is sim-
aquifer test. Theo-

e Observation Well

own, s, mping et		Calculated recovery $(s - s')$	
	m	ft	m
[illegible]	3.23	0.00	0.00
[illegible]	3.23	0.05	0.01
50	3.23	0.10	0.03
[illegible]	3.23	0.21	0.06
[illegible]	3.23	0.52	0.15
[illegible]	3.24	0.90	0.28
53	3.24	1.41	0.43
[illegible]	3.24	2.00	0.61
[illegible]	3.25	3.40	1.03
70	3.26	4.20	1.28
[illegible]	3.27	5.10	1.55
[illegible]	3.29	5.85	1.78
[illegible]	3.34	6.95	2.12
15	3.40	8.35	2.55
3	3.46	8.65	2.64
[illegible]	3.52	9.50	2.89
76	3.59	9.80	2.99
[illegible]	3.64	10.35	3.15

/day)

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p 4 of 6

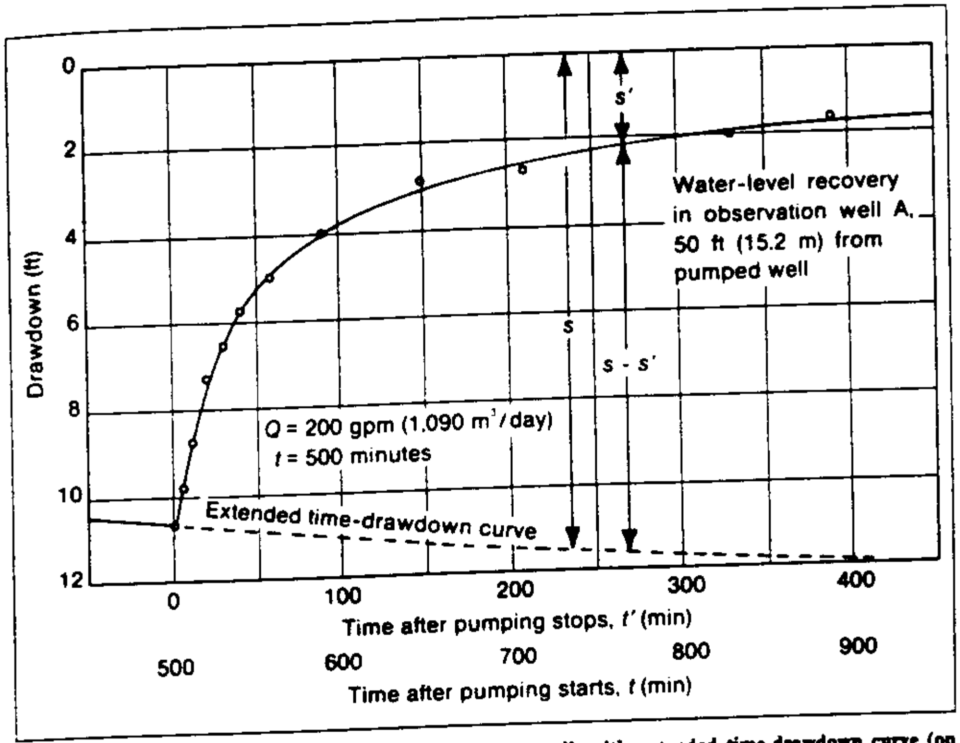

Figure 9.39. Residual-drawdown curve from observation well, with extended time-drawdown curve (on arithmetic scales) showing how calculated recovery is determined at any instant during the recovery period. Producing well pumped 200 gpm (1,090 m³/day) for 500 minutes.

retically, the drawdown and recovery plots should be identical if the aquifer conditions conform to the basic assumptions of the Theis concept.

The time-recovery data from the pumped well can also be plotted by using the method applied to the observation well. The time-recovery plot for the pumped well is more accurate than its time-drawdown plot because the residual-drawdown measurements are more accurate. During the recovery period, water-level measurements can be made without being affected by pump vibrations and momentary variations in the pumping rate.

In analyzing the time-recovery plot, its slope is of primary interest. Two factors determine the slope of the straight line in Figure 9.40. One is the average pumping rate during the preceding pumping period, the other is the aquifer transmissivity.

In Figure 9.40, the slope of the straight line is expressed numerically as the change in the water-level recovery per logarithmic cycle. It is designated by $\Delta(s - s')$. Its value in Figure 9.40 is 5.2 ft (1.6 m), which is the recovery during the period from 10 minutes to 100 minutes after pumping stopped.

The next step is to calculate the transmissivity of the aquifer from the following equation:

$$T = \frac{264\,Q}{\Delta\,(s - s')} \qquad\qquad T = \frac{0.183\,Q}{\Delta\,(s - s')} \qquad (9.14)$$

Note that this equation is similar to Equation 9.7. Figure 9.40 shows the value of *T* to

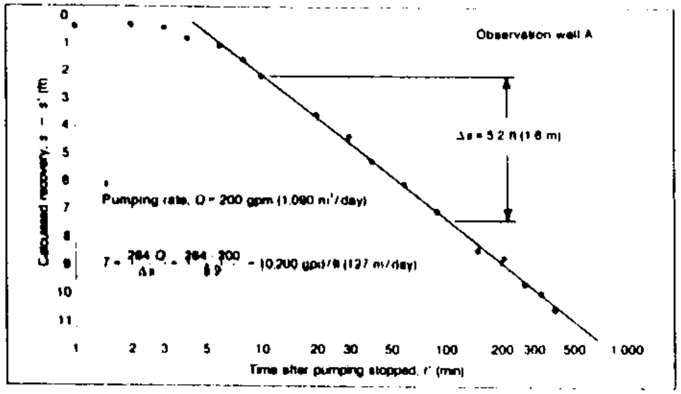

Figure 9.40. Time-recovery plot for observation well becomes a straight line when plotted on a semilog diagram, similar to the time-drawdown diagram for the preceding pumping period.

be about 10,200 gpd/ft (127 m²/day), which may be compared with T as calculated from the time-drawdown data plotted in Figure 9.25. If test conditions meet the required standards and measurements are taken carefully, the two results should agree reasonably well.

A second method of plotting the data permits direct use of the residual drawdown without calculating the recovery from an extension of the time-drawdown plot. It can be shown that the residual drawdown is related to the logarithm of the ratio t/t' as follows:

$$s' = \frac{264\,Q}{T}\log t/t' \qquad s' = \frac{0.183\,Q}{T}\log t/t' \qquad (9.15)$$

Mathematical development of this relationship is given in Appendix 9.D.

This equation shows that when values of s' are plotted against corresponding values of t/t' on semilogarithmic graph paper, a straight line can be drawn through the plotted points. Figure 9.41 shows the data from Table 9.4 plotted on a semilog diagram, with s' indicated on the vertical arithmetic scale and t/t' on the horizontal logarithmic scale. The transmissivity is then calculated from the following equation:

$$T = \frac{264\,Q}{\Delta s'} \qquad T = \frac{0.183\,Q}{\Delta s'} \qquad (9.16)$$

Note from Figure 9.41 that time during the recovery period increases toward the left in this method of plotting, whereas on the time-drawdown and time-recovery plots time increases toward the right.

The residual-drawdown plot as shown in Figure 9.41 is preferred over the recovery plot, Figure 9.40, for calculating transmissivity. The method shown in Figure 9.41 provides a more independent check on the results calculated from the pumping period.

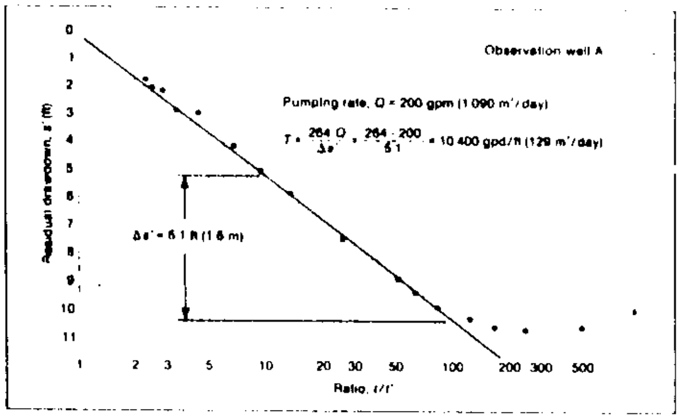

Figure 9.41. Residual drawdown plotted against the ratio t/t' becomes a straight line on semilog graph and permits calculation of transmissivity as shown. Time during recovery period increases toward the left in this diagram.

The method used in Figure 9.40 depends upon extension of the time-drawdown plot through the recovery period; thus, the drawdown plot itself determines the values used in the recovery plot, and any inaccuracies in the drawdown plot are projected into the recovery plot.

If no observation well is available, the recovery data from the pumped well usually provide the best basis for calculating the transmissivity of the aquifer. The residual-drawdown plot, as shown in Figure 9.41, should always be used in such a case.

Determining Storage Coefficient Using Recovery Data

If measurements are made in at least one observation well during the recovery period, the storage coefficient can be calculated from portions of these data. The data must be plotted as shown in Figure 9.40. The residual-drawdown plot cannot be used for determining the storage coefficient, even though that plot is valid for calculating the transmissivity.

Figures 9.42 and 9.43 show the similarity in calculations of the storage coefficient from time-drawdown and time-recovery diagrams. Using Equations 9.7 and 9.8, the time-drawdown data for an observation well, shown in Figure 9.42, give values of $T = 13{,}000$ gpd/ft (161 m²/day) and $S = 5.7 \times 10^{-4}$, respectively. Parallel calculations from Figure 9.43 using $\Delta(s - s')$ in place of Δs and t'_o in place of t_o, give values of $T = 13{,}700$ gpd/ft (170 m²/day) and $S = 4.4 \times 10^{-4}$, respectively. These two sets of results are considered to be in reasonable agreement.

It is apparent from the residual-drawdown curve in Figure 9.41 that t'_o cannot be obtained from that diagram. The horizontal scale represents a ratio without units. The intercept of this curve at zero drawdown has an entirely different significance on this graph. It is necessary to review the basic assumptions listed on page 218 that were used in developing the equations for both the pumping period and the recovery period

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A study of residual-drawdown curves from actual aquifer tests reveals that the curve does not always pass through this point, called the origin of the diagram. When the curve fails to pass through the origin, it is concluded that the aquifer conditions do not conform to the assumed idealized conditions.

Three ways in which the conditions differ from the theoretical aquifer may be indicated by the residual-drawdown plot. If the graph indicates zero drawdown at a *t/t′* value of 2 or more, it is concluded that some recharge water reached the aquifer during the pumping period. The result of the recharge is to bring about full recovery to the original static level during a relatively short recovery period, long before *t/t′* approaches 1. The upper plot in Figure 9.44 might be obtained for such a situation.

A different condition is indicated when the plot extended to the left shows a residual drawdown of several inches or more as *t/t′* approaches 1. This situation would occur in an aquifer of limited extent with no recharge, when pumping permanently lowers the static water level. The lowest plot in Figure 9.44 illustrates this type of result.

The third condition that can account for minor displacement of the residual drawdown plot results from a variation in the storage coefficient, *S*. In theory, the storage coefficient is assumed to be constant during both the pumping period and the recovery period of the test. In practice, however, *S* probably varies and is apt to be greater during the pumping period than during the subsequent recovery (Jacob, 1963).

The value of *S* for a confined aquifer depends upon the elastic properties of the formation. If the aquifer is not perfectly elastic, it does not rebound vertically during recovery of water levels (recovery of pressure) at the same rate that it is compressed as a result of the drawdown during the preceding pumping.

During pumping from an unconfined aquifer, air occupies the voids in the sands within the cone of depression, because that part of the formation is actually dewatered. The volume of water drained per cubic foot of the formation is the value of *S*. When pumping is stopped, the rising water table may trap some of the air as bubbles in the

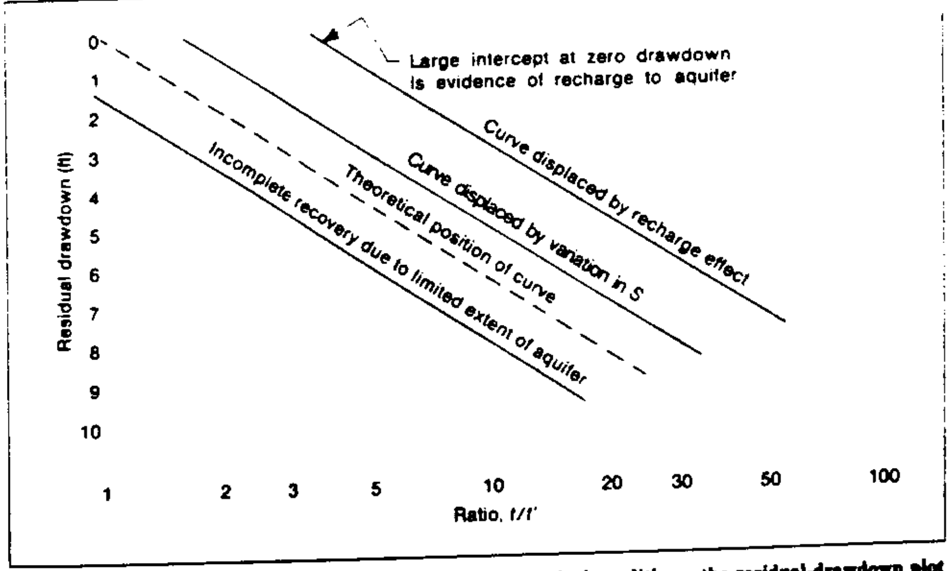


Figure 9.44. When real aquifer conditions differ from theoretical conditions, the residual-drawdown plot may be displaced in any of the three ways shown in this diagram.

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

Appendix 1.4.4-1

COMMUNICATIONS RECORD FORM

Distribution: ( ) [illegible] File, ( ) ________
( ) ________, ( ) ________
( ) Author

Person Contacted: Darrell Swiredoski Date: 7/22/85

Phone Number: (315) 785-2515 Title: Sr. Sanitary Engineer

Affiliation: NYSDEC Region 6 Type of Contact: Phone

Address: 317 Washington St
Watertown, NY 13601

Person Making Contact: T. Porter

Communications Summary: Asked Darrell the locations of samples collected March [illegible] at the Utica LF site by DEC

The samples were collected from two location -
LF1 from the swampy area in the northeast portion of the site
LF2 from a pond in the southeast portion of the site.

A sediment and aqueous sample was collected from each location.

(see over for additional space)

Signature: Tom Porter

Darrell

RECEIVED
JUN 26 1981
NYS Dept. Env. Conservation Region 6
REGIONAL ~~ENGINEER~~

June 23, 1981

Mr. R. Guiendon
New York State Department of
Environmental Conservation
317 Washington Street
Watertown, NY 13601

Re: Analytical Results

Dear Mr. Guiendon:

Please find enclosed Recra Research, Inc.'s results of the analyses of five samples received at our laboratories on March 27, 1981.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.

James A. Ploscyca

James A. Ploscyca
Laboratory Manager

TRB/JAP/skb
Enclosure
cc: Bob McCarty, NYSDEC
Earl Barkum, NYSDEC

I.D. #81-105 FF

RECRA RESEARCH, INC. P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

ANALYTICAL REPORT

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PRIORITY POLLUTANT ANALYSES

Prepared For:

New York State Department of
Environmental Conservation
317 Washington Street
Watertown, NY 13601

Prepared By:

Recra Research, Inc.
P.O. Box 448
Tonawanda, NY 14150

Report Date: June 23, 1981

RECRA RESEARCH, INC. P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

ANALYTICAL REPORT

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PRIORITY POLLUTANT ANALYSES

Report Date: 6/23/81

INTRODUCTION:

On March 27, 1981, five samples were received at Recra Research, Inc. A request was made by the New York State Department of Environmental Conservation to have four of the samples analyzed for Environmental Protection Agency decreed priority pollutants. Analysis for Asbestos was not requested. Two of these samples were soils. These were identified as UTICA LF #1 and UTICA LF #2. The two aqueous samples were also identified as UTICA LF #1 and UTICA LF #2.

A fifth sample, identified as EMPIRE RECYCLING, was received for tetrachloroethylene and PCB analyses.

This report will address the results of those analyses.

METHODS:

Priority pollutant and other analyses were conducted according to Environmental Protection Agency (EPA) methodologies.

Organic priority pollutants were analyzed by Gas Chromatography/Mass Spectrometry (GC/MS). Pesticide priority pollutants were screened by Gas Chromatography.

Chain of custody records were received with all samples except EMPIRE RECYCLING.

RESULTS AND DISCUSSION:

Results of the priority pollutant analyses are listed in Tables IA through VIB. The results of the analyses performed on the EMPIRE RECYCLING sample are listed in Table VII.

Volatile priority pollutants were not detected in any blanks above the level of the detection limit.

Compounds indicated by the Gas Chromatography screening for Pesticides/PCB's (Tables IVA and IVB) are at levels too low for GC/MS confirmation.

The following percent dry weights were determined for the following soil samples:

UTICA LF #1 - 32%

UTICA LF #2 - 43%

EMPIRE RECYCLING - 83%

Values reported as "less than" (<) indicate the working detection limit for the given sample and/or parameter. Values reported as "less than or equal to" (≤) indicate the presence of a compound at a level below the working detection limit and, therefore, not subject to accurate quantification.

Compounds which are "indicated" fulfill some, but not all, of the requirements for positive identification.

Respectfully submitted,

RECRA RESEARCH, INC.

Timothy R Baker

Timothy R. Baker
GC/MS Specialist

TRB/skb

TABLE IA

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

ACID/PHENOLICS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
2-chlorophenol	μg/l	<5	<5
2,4-dichlorophenol	μg/l	<5	<5
2,4-dimethylphenol	μg/l	<5	<5
4,6-dinitro-o-cresol	μg/l	<50	<50
2,4-dinitrophenol	μg/l	<50	<50
2-nitrophenol	μg/l	<5	<5
4-nitrophenol	μg/l	<50	<50
p-chloro-m-cresol	μg/l	<10	<10
pentachlorophenol	μg/l	<10	<10
phenol	μg/l	<5	5
2,4,6-trichlorophenol	μg/l	<10	<10

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. Timothy R Bader

DATE 6/23/81

TABLE IB

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

ACID/PHENOLICS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
2-chlorophenol	µg/g dry	<10	<10
2,4-dichlorophenol	µg/g dry	<10	<10
2,4-dimethylphenol	µg/g dry	<10	<10
4,6-dinitro-o-cresol	µg/g dry	<100	<100
2,4-dinitrophenol	µg/g dry	<100	<100
2-nitrophenol	µg/g dry	<10	<10
4-nitrophenol	µg/g dry	<100	<100
p-chloro-m-cresol	µg/g dry	<20	<20
pentachlorophenol	µg/g dry	<20	<20
phenol	µg/g dry	<10	<10
2,4,6-trichlorophenol	µg/g dry	<20	<20

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. Timothy R Baker

DATE 6/23/81

TABLE IIA

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

BASE/NEUTRALS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
acenaphthene	μg/l	<2	<2
acenaphthylene	μg/l	<2	<2
anthracene	μg/l	<2	<2
benzidine	μg/l	<25	<25
benzo(a)anthracene	μg/l	<5	<5
benzo(a)pyrene	μg/l	<10	<10
benzo(b)fluoranthene	μg/l	<5	<5
benzo(g,h,i)perylene	μg/l	<25	<25
benzo(k)fluoranthene	μg/l	<5	<5
bis(2-chloroethoxy)methane	μg/l	<10	<10
bis(2-chloroethyl)ether	μg/l	<10	<10
bis(2-chloroisopropyl) ether	μg/l	<10	<10
bis(2-ethylhexyl)phthalate	μg/l	<10	≤10
4-bromophenylphenylether	μg/l	<10	<10
butylbenzylphthalate	μg/l	<10	<10
2-chloronaphthalene	μg/l	<3	<3
4-chlorophenylphenylether	μg/l	<25	<25
chrysene	μg/l	<5	<5
dibenzo(a,h)anthracene	μg/l	<25	<25
1,2-dichlorobenzene	μg/l	<5	<5
1,3-dichlorobenzene	μg/l	<5	<5
1,4-dichlorobenzene	μg/l	<5	<5
3,3'-dichlorobenzidine	μg/l	<25	<25
diethylphthalate	μg/l	<10	<10
dimethylphthalate	μg/l	<10	<10
di-n-butylphthalate	μg/l	<10	≤10

(Continued)

TABLE IIA (cont'd.)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

BASE/NEUTRALS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
2,6-dinitrotoluene	μg/l	<25	<25
2,4-dinitrotoluene	μg/l	<25	<25
di-n-octylphthalate	μg/l	<10	<10
1,2-diphenylhydrazine	μg/l	<25	<25
fluoranthene	μg/l	<2	<2
fluorene	μg/l	<2	<2
hexachlorobenzene	μg/l	<5	<5
hexachlorobutadiene	μg/l	<5	<5
hexachlorocyclopentadiene	μg/l	<25	<25
hexachloroethane	μg/l	<10	<10
indeno(1,2,3-cd)pyrene	μg/l	<25	<25
isophorone	μg/l	<25	<25
naphthalene	μg/l	<2	≤2
nitrobenzene	μg/l	<10	<10
N-nitrosodimethylamine	μg/l	<25	<25
N-nitrosodi-n-propylamine	μg/l	<25	<25
N-nitrosodiphenylamine	μg/l	<10	<10
phenanthrene	μg/l	<2	<2
pyrene	μg/l	<2	<2
2,3,7,8-tetrachlorodibenzo-p-dioxin	μg/l	<10	<10
1,2,4-trichlorobenzene	μg/l	<5	<5

COMMENTS: Refer to text.

FOR RECRA RESEARCH, INC. Timothy R Baker

DATE 6/23/81

TABLE IIB

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
acenaphthene	µg/g dry	<4	<4
acenaphthylene	µg/g dry	<4	<4
anthracene	µg/g dry	<4	<4
benzidine	µg/g dry	<50	<50
benzo(a)anthracene	µg/g dry	<10	<10
benzo(a)pyrene	µg/g dry	<20	<20
benzo(b)fluoranthene	µg/g dry	<10	<10
benzo(g,h,i)perylene	µg/g dry	<50	<50
benzo(k)fluoranthene	µg/g dry	<10	<10
bis(2-chloroethoxy)methane	µg/g dry	<20	<20
bis(2-chloroethyl)ether	µg/g dry	<20	<20
bis(2-chloroisopropyl) ether	µg/g dry	<20	<20
bis(2-ethylhexyl)phthalate	µg/g dry	<20	<20
4-bromophenylphenylether	µg/g dry	<20	<20
butylbenzylphthalate	µg/g dry	<20	<20
2-chloronaphthalene	µg/g dry	<6	<6
4-chlorophenylphenylether	µg/g dry	<50	<50
chrysene	µg/g dry	<10	<10
dibenzo(a,h)anthracene	µg/g dry	<50	<50
1,2-dichlorobenzene	µg/g dry	<10	<10
1,3-dichlorobenzene	µg/g dry	<10	<10
1,4-dichlorobenzene	µg/g dry	<10	<10
3,3'-dichlorobenzidine	µg/g dry	<50	<50
diethylphthalate	µg/g dry	<20	<20
dimethylphthalate	µg/g dry	<20	<20
di-n-butylphthalate	µg/g dry	<20	<20

(Continued)

TABLE IIB (cont'd.)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

BASE/NEUTRALS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
2,6-dinitrotoluene	μg/g dry	<50	<50
2,4-dinitrotoluene	μg/g dry	<50	<50
di-n-octylphthalate	μg/g dry	<20	<20
1,2-diphenylhydrazine	μg/g dry	<50	<50
fluoranthene	μg/g dry	<4	<4
fluorene	μg/g dry	<4	<4
hexachlorobenzene	μg/g dry	<10	<10
hexachlorobutadiene	μg/g dry	<10	<10
hexachlorocyclopentadiene	μg/g dry	<50	<50
hexachloroethane	μg/g dry	<20	<20
indeno(1,2,3-cd)pyrene	μg/g dry	<50	<50
isophorone	μg/g dry	<50	<50
naphthalene	μg/g dry	<4	<4
nitrobenzene	μg/g dry	<20	<20
N-nitrosodimethylamine	μg/g dry	<50	<50
N-nitrosodi-n-propylamine	μg/g dry	<50	<50
N-nitrosodiphenylamine	μg/g dry	<20	<20
phenanthrene	μg/g dry	<4	<4
pyrene	μg/g dry	<4	<4
2,3,7,8-tetrachlorodibenzo-p-dioxin	μg/g dry	<20	<20
1,2,4-trichlorobenzene	μg/g dry	<10	<10

COMMENTS: Refer to text.

FOR RECRA RESEARCH, INC. Timothy R Baker

DATE 6/23/81

TABLE IIIA

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

VOLATILES

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
acrolein	mg/l	<1	<1
acrylonitrile	mg/l	<2	<2
benzene	μg/l	<10	<10
bromodichloromethane	μg/l	<10	<10
bromoform	μg/l	<10	<10
bromomethane	μg/l	<5	<5
carbon tetrachloride	μg/l	<5	<5
chlorobenzene	μg/l	<5	<5
chloroethane	μg/l	5	<5
2-chloroethylvinyl ether	μg/l	<10	<10
chloroform	μg/l	<5	<5
chloromethane	μg/l	<5	<5
dibromochloromethane	μg/l	<5	<5
dichlorodifluoromethane	μg/l	<5	<5
1,1-dichloroethane	μg/l	<5	<5
1,2-dichloroethane	μg/l	<5	<5
1,1-dichloroethylene	μg/l	<5	<5
trans-1,2-dichloroethylene	μg/l	<5	<5
1,2-dichloropropane	μg/l	<5	<5
cis-1,3-dichloropropene	μg/l	<5	<5
trans-1,3-dichloropropene	μg/l	<5	<5
ethylbenzene	μg/l	<5	<5
methylene chloride	μg/l	<5	<5

(Continued)

TABLE IIIA (cont'd.)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

VOLATILES

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
1,1,2,2-tetrachloroethane	μg/l	<5	<5
tetrachloroethylene	μg/l	<5	<5
toluene	μg/l	<20	<20
1,1,1-trichloroethane	μg/l	<5	<5
1,1,2-trichloroethane	μg/l	<5	<5
trichloroethylene	μg/l	<5	<5
trichlorofluoromethane	μg/l	<5	<5
vinyl chloride	μg/l	<5	≤5

COMMENTS: Refer to text.

FOR RECRA RESEARCH, INC. Timothy R Baker

DATE 6/23/81

TABLE IIIB

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

VOLATILES

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
acrolein	μg/g dry	<2	<2
acrylonitrile	μg/g dry	<4	<4
benzene	ng/g dry	<20	<20
bromodichloromethane	ng/g dry	<20	<20
bromoform	ng/g dry	<20	<20
bromomethane	ng/g dry	<10	<10
carbon tetrachloride	ng/g dry	<10	<10
chlorobenzene	ng/g dry	55	<10
chloroethane	ng/g dry	<10	<10
2-chloroethylvinyl ether	ng/g dry	<20	<20
chloroform	ng/g dry	<10	<10
chloromethane	ng/g dry	<10	<10
dibromochloromethane	ng/g dry	<10	<10
dichlorodifluoromethane	ng/g dry	<10	<10
1,1-dichloroethane	ng/g dry	<10	<10
1,2-dichloroethane	ng/g dry	<10	<10
1,1-dichloroethylene	ng/g dry	<10	<10
trans-1,2-dichloroethylene	ng/g dry	<10	<10
1,2-dichloropropane	ng/g dry	<10	<10
cis-1,3-dichloropropene	ng/g dry	<10	<10
trans-1,3-dichloropropene	ng/g dry	<10	<10
ethylbenzene	ng/g dry	<10	<10
methylene chloride	ng/g dry	81	<10

(Continued)

TABLE IIIB (cont'd.)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

VOLATILES

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) UTICA LF #1 (3/26/81)	SAMPLE IDENTIFICATION (DATE) UTICA LF #2 (3/26/81)
1,1,2,2-tetrachloroethane	ng/g dry	<10	<10
tetrachloroethylene	ng/g dry	<10	<10
toluene	ng/g dry	<40	<40
1,1,1-trichloroethane	ng/g dry	<10	<10
1,1,2-trichloroethane	ng/g dry	<10	<10
trichloroethylene	ng/g dry	<10	<10
trichlorofluoromethane	ng/g dry	<10	<10
vinyl chloride	ng/g dry	<10	<10

COMMENTS: Refer to text.

FOR RECRA RESEARCH, INC. Timothy R B

DATE 6/23/81

TABLE IVA

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

PESTICIDES/PCB'S

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
Aldrin	μg/l	0.02	<0.01
α-BHC	μg/l	<0.03	0.16
β-BHC	μg/l	<0.02	<0.09
δ-BHC	μg/l	0.02	<0.03
γ-BHC	μg/l	0.02	0.09
Chlordane	μg/l	<0.1	<0.1
4,4'-DDD	μg/l	<0.01	<0.01
4,4'-DDE	μg/l	<0.01	<0.01
4,4'-DDT	μg/l	<0.01	<0.01
Dieldrin	μg/l	<0.01	<0.01
α-Endosulfan	μg/l	<0.01	<0.02
β-Endosulfan	μg/l	<0.01	<0.01
Endosulfan sulfate	μg/l	<0.01	<0.01
Endrin	μg/l	<0.03	<0.02
Endrin aldehyde	μg/l	<0.01	<0.01
Heptachlor	μg/l	0.02	0.05
Heptachlor epoxide	μg/l	<0.01	<0.01
PCB-1016	μg/l	<0.5	<1
PCB-1221	μg/l	<1	<2
PCB-1232	μg/l	<0.5	<1
PCB-1242	μg/l	<0.5	<1
PCB-1248	μg/l	<0.5	<1
PCB-1254	μg/l	<0.1	<0.5
PCB-1260	μg/l	<0.1	<0.5
Toxaphene	μg/l	<0.1	<0.1

COMMENTS: Refer to text.

FOR RECRA RESEARCH, INC. Larry P Rosengrant

DATE 6/23/81

RECRA RESEARCH, INC.

TABLE IVB

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

PESTICIDES/PCB'S

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
Aldrin	μg/g dry	<0.06	<0.01
α-BHC	μg/g dry	<0.01	<0.02
β-BHC	μg/g dry	<0.01	<0.02
δ-BHC	μg/g dry	<0.2	<0.02
γ-BHC	μg/g dry	<0.01	<0.01
Chlordane	μg/g dry	<0.1	<0.1
4,4'-DDD	μg/g dry	<0.04	<0.01
4,4'-DDE	μg/g dry	<0.01	<0.01
4,4'-DDT	μg/g dry	<0.08	<0.02
Dieldrin	μg/g dry	<0.01	<0.01
α-Endosulfan	μg/g dry	<0.04	<0.02
β-Endosulfan	μg/g dry	<0.04	<0.01
Endosulfan sulfate	μg/g dry	<0.01	<0.01
Endrin	μg/g dry	<0.03	<0.02
Endrin aldehyde	μg/g dry	<0.01	<0.01
Heptachlor	μg/g dry	0.13	0.04
Heptachlor epoxide	μg/g dry	<0.06	<0.01
PCB-1016	μg/g dry	<0.5	<1
PCB-1221	μg/g dry	<1	<2
PCB-1232	μg/g dry	<0.5	<1
PCB-1242	μg/g dry	<0.5	≤1
PCB-1248	μg/g dry	<0.5	<1
PCB-1254	μg/g dry	<0.5	<1
PCB-1260	μg/g dry	≤0.5	≤1
Toxaphene	μg/g dry	<0.1	<0.1

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. Larry E Rosengrant

DATE 6/23/81

TABLE VA

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ATOMIC ABSORPTION
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

METALS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
Total antimony	mg/1	<0.2	<0.2
Total arsenic	μg/1	<4	<4
Total beryllium	mg/1	<0.003	<0.003
Total cadmium	mg/1	<0.004	<0.004
Total chromium	mg/1	0.009	0.010
Total copper	mg/1	0.014	0.012
Total lead	mg/1	0.05	0.05
Total mercury	μg/1	<1	<1
Total nickel	mg/1	0.05	0.03
Total selenium	μg/1	<4	<4
Total silver	mg/1	0.010	<0.005
Total thallium	mg/1	<0.2	<0.2
Total zinc	mg/1	0.124	0.195

COMMENTS: Refer to text.

FOR RECRA RESEARCH, INC. R. J. Finn

DATE 6/23/81

TABLE VB

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ATOMIC ABSORPTION
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

METALS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
Total antimony	μg/g dry	<20	<20
Total arsenic	μg/g dry	17	<7
Total beryllium	μg/g dry	0.94	0.94
Total cadmium	μg/g dry	0.63	0.63
Total chromium	μg/g dry	57	63
Total copper	μg/g dry	240	260
Total lead	μg/g dry	120	99
Total mercury	μg/g dry	0.34	0.33
Total nickel	μg/g dry	81	43
Total selenium	μg/g dry	<20	<9
Total silver	μg/g dry	1.1	0.94
Total thallium	μg/g dry	<20	<20
Total zinc	μg/g dry	510	340

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. R. V. Finn

DATE 6/23/81

TABLE VIA

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

MISCELLANEOUS

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
Total cyanide	μg/l	<10	<20
Total recoverable phenolics	mg/l	<0.01	0.02

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. R. V. Z

DATE 6/23/81

TABLE VIB

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PRIORITY POLLUTANT ANALYSES

Samples Received: 3/27/81
Report Date: 6/23/81

MISCELLANEOUS

		SAMPLE IDENTIFICATION (DATE)	
COMPOUND	UNITS OF MEASURE	UTICA LF #1 (3/26/81)	UTICA LF #2 (3/26/81)
Total cyanide	mg/kg dry	2.3	1.6
Total recoverable phenolics	mg/kg dry	0.09	3.0

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. R. V. Finn

DATE 6/23/81

TABLE VII

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
GAS CHROMATOGRAPHY

Sample Received: 3/27/81
Report Date: 6/23/81

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) EMPIRE RECYCLING (3/26/81)
tetrachloroethylene	µg/g dry	<0.2
PCB-1016	µg/g dry	<10
PCB-1221	µg/g dry	<10
PCB-1232	µg/g dry	<10
PCB-1242	µg/g dry	<10
PCB-1248	µg/g dry	<10
PCB-1254	µg/g dry	<10
PCB-1260	µg/g dry	<10
PCB-1262	µg/g dry	<10
PCB-1268	µg/g dry	<10

COMMENTS: Refer to text

FOR RECRA RESEARCH, INC. Larry E Rosengrant

DATE 6/23/81

Appendix 1.44-2

p 5

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc

COMMUNICATIONS RECORD FORM

Distribution: ( ) Utica Dump Site, ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Jim Doyle **Date:** 10/7/87

Phone Number: (315) 793-2554 **Title:** Sanitary Engineer

Affiliation: Div of Water Quality NYSDEC Region 6 **Type of Contact:** phone

Address: 207 Gennesee St
Utica, NY 13501

Person Making Contact: L Rogers

Communications Summary: I called Mr Doyle regarding sampling locations discussed in Table 1 of the 'Hardfill Disposal Area Report' by Stetson-Dale. He informed me that the samples were collected at road crossings (over the Mohawk River) as follows:

Whitestown Mile 110.8 - Mohawk Rd (in Whitestown)
Utica 105.2 - Leland Rd (first road crossing upgradient of the site)
Schuyler 100.7 - Dyke Road (in Schuyler) (first crossing downgradient of the site - approximately 2 miles from the site)

(see over for additional space)

Signature: Lori Rogers

Appendix 1.5.1-1

RECEIVED MAY 5 1986

1 of 2

United States
Department of
Agriculture

Soil
Conservation
Service

RR#1, Box 126-C, Second Street
Oriskany, New York 13424

May 2, 1986

Thomas Porter
EAS
RD#2, Box 91
Goshen Turnpike
Middletown, New York 10940

Dear Mr. Porter;

Attached is the information that you have requested. To my knowledge there are no acres being irrigated at or around these two specific sites.

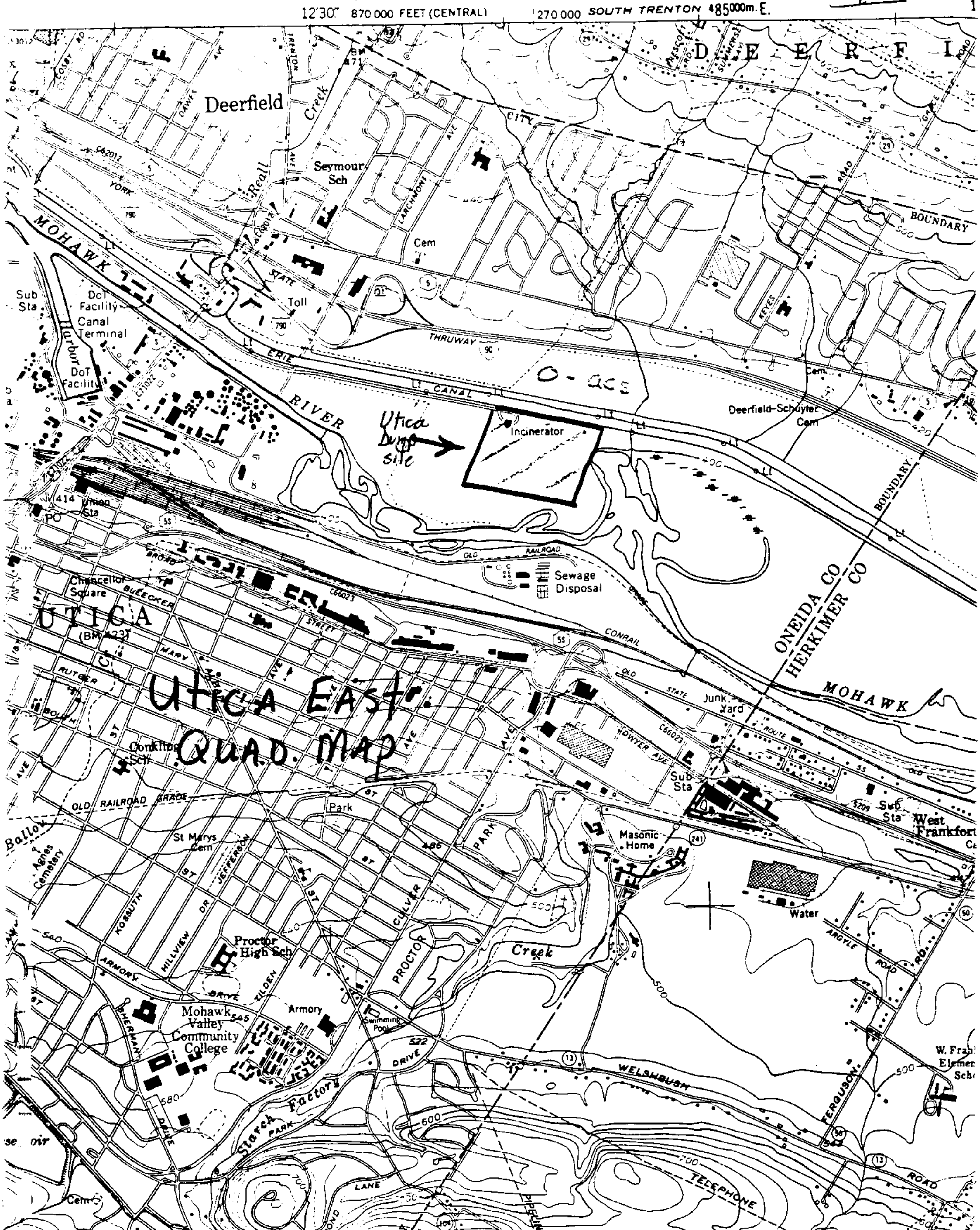
Sincerely,

Robin Mangini
District Conservationist

Robin Mangini

RM/cak

2 of 2


12'30" 870 000 FEET (CENTRAL)
270 000 SOUTH TRENTON 485000m.E.
DEERFI
Deerfield
Creek
Seymour Sch
Reall
Cem
LARCHMONT AVE
CITY
BOUNDARY
YORK
STATE
Toll
THRUWAY
90
MOHAWK
RIVER
ERIE
CANAL
Sub Sta
DoT Facility
Canal Terminal
Harbor
DoT Facility
O - ACE
Utica Dump site
Incinerator
KEYES
Cem
Deerfield-Schuyler Cem
Union Sta
PO
OLD RAILROAD
Sewage Disposal
BROAD
Chancellor Square
BLEECKER
UTICA
(BM 423)
STREET
CONRAIL
ONEIDA CO
HERKIMER CO
MOHAWK
MARY
RUTGER
SOUTH
OLD STATE
Junk Yard
DWYER AVE
ROUTE
Utica East Quad Map
Conkling Sch
OLD RAILROAD GRADE
Park
Sub Sta
Sub Sta
West Frankfort
Ballou
Agnes Cemetery
St Marys Cem
JEFFERSON
PARK
Masonic Home
KOSSUTH
HILLVIEW
CULVER
Water
ARGYLE
ROAD
Proctor High Sch
PROCTOR
Creek
ARMORY
DRIVE
TILDEN
Armory
Swimming Pool
Mohawk Valley Community College
SHERMAN
DRIVE
WELSHBUSH
FERGUSON
W. Frankfort Elementary Sch
Starch Factory
PARK
LANE
TELEPHONE
ROAD
Cem
Reservoir

Appendix 1.St-2

1 of 1

New York State Department of Environmental Conservation
Wildlife Resources Center
Delmar, NY 12054

Henry G. Williams
Commissioner

RECEIVED APR 1 6 1986

April 10, 1986

Mr. Thomas Porter
EA Science and Technology
RD2 Box 91
Goshen Turnpike
Middletown, NY 10940

Dear Tom:

We have reviewed the hazardous waste sites enclosed with your letter of 21 March 1986 for potential affects on "Federally listed endangered species" and "critical habitats". There were not any Federally listed species identified in the vicinity of the sites; however, several sites are in close proximity to significant habitats, including State listed endangered and threatened species. We have drawn the approximate locations of these habitats on the enclosed maps and described them on the back of each map.

In addition, these sites were reviewed by the New York Natural Heritage Program for proximity to rare plants. Information from their files is also included on the back of each map. Please treat the rare plant information as "confidential" and review the enclosed disclaimer statement. If you have any questions concerning the rare plants please contact Dr. Steve Clemants, Botanist, New York Natural Heritage Program, at this address or (518) 439-7488.

If we can be of further assistance please do not hesitate to contact us.

Sincerely,

John W. Ozard

John W. Ozard
Senior Wildlife Biologist
Significant Habitat Unit

Enclosures

cc: NYNHP - S. Clemants

JWO:sjs

Appendix 1.5.1-3
1 of 1

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) ________________, ( ) ________________
( ) ________________, ( ) ________________
( ) Author

Person Contacted: Marshal Zinicola Date: 20 April 87

Phone Number: (315) 724-5153 Title: Fire Marshal

Affiliation: City of Utica Type of Contact: Phone

Address: Utica, New York
13501
Person Making Contact: E Metzger

Communications Summary: Mr Zinicola informed me that he does not consider the Old City of Utica Dump a fire or explosive threat. He said that long ago before the entrance was guarded, they had problems with people starting fires. They no longer have that problem.

(see over for additional space)

Signature: Ellen B. Metzger

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: ______ SITE CODE: 633015

NAME OF SITE: City of Utica Dump REGION: 6

STREET ADDRESS: Incinerator Road

TOWN/CITY: Utica COUNTY: Oneida

NAME OF CURRENT OWNER OF SITE: City of Utica

ADDRESS OF CURRENT OWNER OF SITE: 1 Kennedy Drive, City Hall, Utica, New York

TYPE OF SITE: OPEN DUMP ☒ STRUCTURE ☐ LAGOON ☐ LANDFILL ☐ TREATMENT POND ☐

ESTIMATED SIZE: 55 ACRES

SITE DESCRIPTION:

The site is an inactive dump located within the City of Utica boundary in a remote low lying area. The dump is bordered by the Barge Canal to the north, the Mohawk River east and south, and the City of Utica Hardfill Landfill to the west.

HAZARDOUS WASTE DISPOSED: CONFIRMED ☐ SUSPECTED ☐

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Several volatile and semi-volatile organic priority pollutants	1 drum sample
Heavy metals	

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

Early, 19 30's TO ______, 19 70

OWNER(S) DURING PERIOD OF USE: City of Utica

SITE OPERATOR DURING PERIOD OF USE: City of Utica

ADDRESS OF SITE OPERATOR: 1 Kennedy Drive, City Hall, Utica, New York

ANALYTICAL DATA AVAILABLE: AIR ☐ SURFACE WATER ☐ GROUNDWATER ☒
SOIL ☐ SEDIMENT ☐ NONE ☐ X Leachate Seep
X Drum Sample

CONTRAVENTION OF STANDARDS: GROUNDWATER ☐ DRINKING WATER ☐
SURFACE WATER ☐ AIR ☐

SOIL TYPE: Silt and clay

DEPTH TO GROUNDWATER TABLE: 4 to 10 ft

LEGAL ACTION: TYPE: ______ STATE ☐ FEDERAL ☐
STATUS: IN PROGRESS ☐ COMPLETED ☐

REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐
IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: ______

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Release of several metals to surface water and ground water were documented, however, neither is used as a drinking water source within a 3-mi radius.

ASSESSMENT OF HEALTH PROBLEMS:

Major concern is through direct contact.

PERSON(S) COMPLETING THIS FORM:

FOR NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	NEW YORK STATE DEPARTMENT OF HEALTH
NAME	NAME
TITLE	TITLE
NAME	NAME
TITLE	TITLE
DATE:	DATE:

This Report Contained <u>FULL SIZE</u> <u>DRAWINGS</u> That Could Not Be Scanned <u>DER/2007</u>