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SECTION I

EXECUTIVE SUMMARY

SECTION I

EXECUTIVE SUMMARY

Olin Corporation - Deepwell

OBJECTIVE

The purpose of this two phase program is to conduct engineering investigations and evaluations at inactive hazardous waste disposal sites in New York State in order to calculate a Hazard Ranking System (HRS) score for each site and estimate the cost of any recommended remedial action. During the initial portion of this investigation (Phase I) all available data and records combined with information collected from a site inspection were reviewed and evaluated to determine the adequacy of existing information for calculating an HRS score. On the basis of this evaluation, a Phase II Work Plan was prepared for collecting additional HRS data (if necessary), evaluating remedial alternatives and preparing a cost estimate for recommended remedial action. The results of the Phase I study for this site are summarized below and detailed in the body of the report.

SITE BACKGROUND

The Olin Corporation - Deepwell site is located in Niagara Falls, Niagara County, New York. The NYS site code is 932037. The site is located within the Olin Complex on Buffalo Avenue and is owned by the Olin Corporation. The well is not actually a deepwell but a industrial water supply well (approximately 125 feet deep) used to dispose of process liquor containing sulfuric acid and sodium chlorite. This practice was discontinued in 1977 at which time the well was capped and covered with fill. Concern centers over the possible contamination of groundwater and migration to Gill Creek and the Niagara River. There are no known health or environmental problems.

ASSESSMENT

Insufficient data was available to complete a final HRS scoring. The preliminary HRS scoring was:

$S_M = 10.02$ SA = 0.00
$S_{GW} = 17.34$ $S_{FE} = 0.00$
$S_{SW} = 0.00$ $S_{DC} = 0.00$

The injection of chemicals into the groundwater was assumed to be an observed release. The HRS was not intended to rank deep wells; therefore, the other routes are not applicable and were assigned a value of zero. The collection of air and surface water data is not applicable to this site since the well is capped and the surrounding area is used for the production of ammonia. Although monitoring wells have been installed nearby (at Gill Creek to monitor another site within the plant), groundwater monitoring is not recommended due to the nature of the waste. The waste consisted primarily of sulfuric acid which can be expected to be neutralized by the limestone in the vicinity of the well.

RECOMMENDATIONS

Although monitoring studies are not recommended the cost of a Phase II report, including a review of Phase I and site assessment has been estimated. The estimated manhours needed to complete Phase II are 120, while the estimated cost is $5778.

SECTION II

SITE DESCRIPTION

SECTION II

SITE DESCRIPTION

Olin Corporation - Deepwell

The Olin Corporation - Deepwell site is located on Buffalo Avenue, Niagara Falls, Niagara County, New York. The site is located within the Olin Complex at the southeastern corner near Gill Creek.

The well is not actually a deepwell but an industrial water supply well that was used to dispose of spent process liquor by injection. This practice was discontinued in 1977 at which time the well was capped and covered. Concern centers over the possible contamination of groundwater and migration to Gill Creek and the Niagara River.

SITE LOCATION MAP
OLIN CORP.

REFERENCE: BASE TAKEN FROM U.S.G.S. 7.5 MIN. TOPOGRAPHIC MAP, NIAGARA FALLS, NY-ONT (1980) QUADRANGLE

FIGURE 1

SECTION III

HRS SCORING

HRS COVER SHEET

Facility name: Olin Corporation - Deepwell

Location: Niagara Falls, NY

EPA Region: II

Person(s) in charge of the facility: Al Kaptina

Environmental Manager

Olin Corporation

Name of Reviewer: John Kubarewicz/Eileen Gilligan **Date:** August 27, 1983

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.)

A well was used to dispose of end liquor containing sulfuric acid and sodium chlorite. Well has been capped and sealed. No known environmental or health problems.

Scores: $S_M = 10.02(S_{gw} = 17.34\ S_{sw} = 0.00 S_a = 0.00)$

$S_{FE} = 0.00$

$S_{DC} = 0.00$

GROUND WATER ROUTE WORK SHEET

Ground Water Route Work Sheet

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1	Observed Release	0 (45)	1		45	3.1
	If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2	Route Characteristics					3.2
	Depth to Aquifer of Concern	0 1 2 3	2		6	
	Net Precipitation	0 1 2 3	1		3	
	Permeability of the Unsaturated Zone	0 1 2 3	1		3	
	Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score				15	
3	Containment	0 1 2 3	1		3	3.3
4	Waste Characteristics					3.4
	Toxicity / Persistence	0 3 6 (9) 12 15 18	1	9	18	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score			17	26	
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	[10]	40	
	Total Targets Score			13	49	
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			9945	57,330	
7	Divide line 6 by 57,330 and multiply by 100			S_{gw} = 17.34		

SURFACE WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Sectic
1	Observed Release	(0) 45	1	0	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	0	3	
	1-yr. 24-hr. Rainfall	(0) 1 2 3	1	0	3	
	Distance to Nearest Surface Water	(0) 1 2 3	2	0	6	
	Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score			3	15	
3	Containment	(0) 1 2 3	1	0	3	4.3
4	Waste Characteristics					4.4
	Toxicity/Persistence	0 3 6 (9) 12 15 18	1	9	18	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score			17	26	
5	Targets					4.5
	Surface Water Use	(0) 1 2 3	3	0	9	
	Distance to a Sensitive Environment	(0) 1 2 3	2	0	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			0	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			0	64,350	
7	Divide line 6 by 64,350 and multiply by 100			S_{sw} = 0		

AIR ROUTE WORK SHEET

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0)	45	1	0	45	5.1
Date and Location:						
Sampling Protocol:						
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.						
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	
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	
4 Multiply 1 x 2 x 3					35,100	
5 Divide line 4 by 35,100 and multiply by 100				S_a = 0		

DIRECT CONTACT WORK SHEET

Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0)	45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2						
2 Accessibility	(0) 1 2 3		1.	0	3	8.2
3 Containment	(0)	15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)		5	15	15	8.4
5 Targets						8.5
Population Within a 1-Mile Radius	(0) 1 2 3 4 5		4	0	20	
Distance to a Critical Habitat	(0) 1 2 3		4	0	12	
Total Targets Score				0	32	
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				0	21,600	
7 Divide line 6 by 21,600 and multiply by 100				S_{DC} = 0		

Fire and Explosion Work Sheet

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section
1	Containment	1 3	1		3	7.1
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	
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	
4	Multiply 1 x 2 x 3				1,440	
5	Divide line 4 by 1,440 and multiply by 100			SFE = ( )		

WORKSHEET FOR COMPUTING S_M

	S	S^2
Groundwater Route Score (S_{gw})	17.34	300.91
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		300.91
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		17.34
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		10.02

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. 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 that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Olin Corporation - Deepwell

LOCATION: Niagara Falls

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None detected, however, Olin admits injection of contaminants to groundwater.
(Cummings, 1979)

Rationale for attributing the contaminants to the facility:

Injection well.

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Bedrock aquifer.

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

Approx. 400 to 100 ft. (assume)

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

135 - 400 ft.
depending on which reference

Net Precipitation

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

32 inches.
(USDOC Climatic Atlas of US, 1979)

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

24 inches.
(USDOC Climatic Atlas of US, 1979)

Net precipitation (subtract the above figures):

8 inches.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Not applicable.

Permeability associated with soil type:

Not applicable.

Physical State

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

Liquid.
(NYS Registry Sheet)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Disposal well.

Method with highest score:

Method not scored but insecure = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

H_2SO_4

(Cummings, 1979)

Compound with highest score:

H_2SO_4 (3,0) = 9

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):

130,000 tons

Basis of estimating and/or computing waste quantity:

(Cummings, 1979)

* * *

5 TARGETS

Ground Water Use

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

Industrial water supply wells 1000 ft
(Cummings, 1979)

Distance to Nearest Well

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

Onsite.
(ES/D&M site visit)

Distance to above well or building:

Approx. 1000 ft 0.2 mi.
(ES/D&M site visit)

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:

Industrial well used on-site only.
Assume less than 100 would contact water.
(ES/D&M site visit)

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):

Not applicable. No land irrigated by aquifer of concern.
(ES/D&M site visit)

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

1 - 100 value = 1

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

Not applicable. No surface water samples collected for chemical analysis.

Rationale for attributing the contaminants to the facility:

Not applicable.

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Not applicable.

Name/description of nearest downslope surface water:

Not applicable.

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

Not applicable.

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

No.
(ES/D&M site visit)

Is the facility completely surrounded by areas of higher elevation?

Not applicable.

1-Year 24-Hour Rainfall in Inches

Not applicable.

Distance to Nearest Downslope Surface Water

Not applicable.

Physical State of Waste

Liquid.
(NYS Registry Sheet)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Disposal well.

Method with highest score:

Disposal well - 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

H_2SO_4

(Cummings, 1979)

Compound with highest score:

H_2SO_4

3, 0 - 9

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):

39,000 tons
(130,000 tons x .3)
(NYS Registry Sheets)

Basis of estimating and/or computing waste quantity:

(NYS Registry Sheets)

* * *

5 TARGETS

Surface Water Use

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

Recreation
Transportation
Commercial water supply
(ES/D&M site visit)

Is there tidal influence?

No.
(USGS Topographic Map: Niagara Falls, NY-ONT Quadrangle)

Distance to a Sensitive Environment

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

Not applicable. None with 2 miles.
(USGS Topographic Map: Niagara Falls, NY-ONT Quadrangle)

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

Not applicable. None within 2 miles.
(NYS Wetland Map)

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

Not applicable. None within 1 mile.
(NYSDEC Region 9 Dept. of Fish & Wildlife files)

Population Served by Surface Water

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

Not applicable. None within specified distances.
(ES/D&M site visit)

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

Not applicable.

Total population served:

Not applicable.

Name/description of nearest of above water bodies:

Not applicable.

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

Not applicable.

1 OBSERVED RELEASE

Contaminants detected:

Not applicable. Air quality not monitored for contamination.

Date and location of detection of contaminants

Not applicable.

Methods used to detect the contaminants:

Not applicable.

Rationale for attributing the contaminants to the site:

Not applicable.

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

H_2SO_4 reacts violently with water.

Most incompatible pair of compounds:

H_2SO_4, H_2O

Toxicity

Most toxic compound:

H_2SO_4 - SAX 3 - 3

Hazardous Waste Quantity

Total quantity of hazardous waste:

130,000 TN

Basis of estimating and/or computing waste quantity:

Cummings, 1979

* * *

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

3040 people.

Distance to a Sensitive Environment

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

Not applicable. None within 2 miles.
(USGS Topographic Map: Niagara Falls, NY-ONT Quadrangle)

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

Not applicable. None within 1 mile.
(NYS Wetlands Map)

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

Not applicable. None within 1 mile.
(NYSDEC Region 9 Dept. of Fish & Wildlife files)

Land Use

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

0.01 mile (onsite) - 3
(ES/D&M site visit)

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

Not applicable. None within 2 miles.
(ES/D&M site visit)

Distance to residential area, if 2 miles or less:

Not applicable. None within 2 miles.
(ES/D&M site visit)

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

Not applicable. None within 1 mile.
(ES/D&M site visit)

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

Not applicable. None within 2 miles.
(ES/D&M site visit)

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

No.
(ES/D&M site visit)

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

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	[illegible]

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
OLIN CORP., DEEPWELL	BUFFALO AVE.				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
NIAGARA FALLS	NY	14304	NIAGARA	063	36

09 COORDINATES: LATITUDE 43° 05' 08.9" | LONGITUDE 79° 01' 34.0"

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	02 SITE STATUS	03 YEARS OF OPERATION
7 / 28 / 83 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1963 (BEGINNING YEAR) / 1977 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR Engineering Science (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR Dames and Moore (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
JOHN KUBAREWICZ	ENGINEER	ES	(703)591-7575
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
EILEEN GILLIGAN	GEOLOGIST	D+M	(315)638-2572
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
AL KAPTENA	Environmental manager	Niagara Falls	(?.?)
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	15:30	Cloudy, hazy

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
JOHN KUBAREWICZ	ENGINEERING-SCIENCE	(703)591-7575

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
KATHRYN GLADDEN	ES		703/541 7515	8 / 4 / 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	[illegible]

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 130,000
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			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
(IOC)	INORGANIC CHEMICALS	130,000	TN	C-2 liq. for water, sulfuric acid and sodium chlorite.
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Sulfuric Acid	7664-93-9	deepwell		
IOC	Sodium Chlorite	999	deepwell		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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)

Cummings, David (1979)

EPA

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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

NOT APPARENT

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

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

UNKNOWN

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

UNKNOWN

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

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

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

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)

Site Inspection

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

II. HAZARDOUS CONDITIONS AND INCIDENTS

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

UNKNOWN

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

UNKNOWN, NIAGARA RIVER ADJACENT TO SITE

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

NO APPARENT ODOR

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

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

UNLIKELY, WELL CAPPED + COVERED

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

UNKNOWN

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

UNKNOWN

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

UNKNOWN

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
[illegible]	[illegible]

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 NONE				
☐ 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		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☒ I. OTHER DEEP WELL (Specify)	130,000	tons

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

< 1 (Acres)

07 COMMENTS

A well drilling to supply industrial water was used to dispose of process liquor.

IV. CONTAINMENT UNKNOWN

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.

NONE VISIBLE

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS SITE is covered with a concrete pad and fenced Access to site is restricted by gaurds.

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

Site Inspection

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	[illegible]

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)	SURFACE	WELL	02 STATUS: ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	A. ☒	B. ☐	A. ☐	B. ☐	C. ☒	A. .2 (mi)
NON-COMMUNITY	C. ☐	D. ☐	D. ☐	E. ☐	F. ☐	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	03 DISTANCE TO NEAREST DRINKING WATER WELL
0	_____ (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
LT 10' (ft)	South	460 (ft)	HIGH (gpd)	☐ YES ☑ NO

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

Site is well @ ~125' deep

Disposed waste is process liquor

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS	☐ YES ☒ NO	COMMENTS

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
Niagara River	☐	0.2 (mi)
Gill Creek	☐	0.02 (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	02 DISTANCE TO NEAREST POPULATION
A. 3040 NO. OF PERSONS	B. 5,700 NO. OF PERSONS	C. 9,500 NO. OF PERSONS	0.28 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
3000	0.1 (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)

All land within 0.2 Miles of Site is used for Industrial purposes; beyound it is occupied by densely populated single family homes

EPA FORM 2070-13 (7-81)

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

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER

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)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
10'-12' (ft)	UNKNOWN (ft)	UNKNOWN

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
13 (in)	2.1 (in)	0 %	NA	0 %

09 FLOOD POTENTIAL
SITE IS IN 100-500 YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. _____ (mi)	B. >3 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
Golden Eagle
Bald Eagle
Peregrine Falcon >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	AG LAND
A. 0 (mi)	B. _____ (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Well is located approximately 100' from Gill Creek
Area is industrialized

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

Site Inspection
USGS Topo Sheet
NYS Water Atlas, 1992

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____
(Name of organization or individual)

03 MAPS
☐ YES
☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED *(Provide narrative description)*

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

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

II. CURRENT OWNER(S) / PARENT COMPANY *(if applicable)*

II. CURRENT OWNER(S)			PARENT COMPANY *(if applicable)*		
01 NAME: OLIN CORP		02 D+B NUMBER:	08 NAME:		09 D+B NUMBER:
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*: P.O. BOX 480		04 SIC CODE:	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*:		11 SIC CODE:
05 CITY: Niagara Falls	06 STATE: NY	07 ZIP CODE: 14302	12 CITY:	13 STATE:	14 ZIP CODE:
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) *(List most recent first)* / IV. REALTY OWNER(S) *(If applicable; list most recent first)*

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

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

Site Inspection
NYS Tax Records

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
NYT	

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

01 NAME	02 D+B NUMBER
Olin Corp	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
P.O. Box 480	

05 CITY	06 STATE	07 ZIP CODE
Niagara Falls	NY	

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	16 ZIP CODE

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

01 NAME	02 D+B NUMBER
Same	

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

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

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 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

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

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)*

Tax Records

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Clin Corp	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
P.O. Box 480	
05 CITY	06 STATE / 07 ZIP CODE
Niagara Falls	NY

III. OFF-SITE GENERATOR(S)

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

IV. TRANSPORTER(S)

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

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

Tax Records

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. PAST RESPONSE ACTIVITIES

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 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☑ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE ~1977 — 03 AGENCY _____
04 DESCRIPTION

well closed and capped

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

Site Inspection

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

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 analysis, reports)*

EPA FORM 2070-13 (7-81)

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

EPA

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER
NYD [illegible]

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
OLIN CORP., DEEPWELL	BUFFALO AVE.				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
NIAGARA FALLS	NY	14304	NIAGARA	063	36
09 COORDINATES LATITUDE	LONGITUDE				
43° 05' 08.9"	79° 01' 34.0"				

10 DIRECTIONS TO SITE (Starting from nearest public road)
Olin complex on Buffalo Avenue, within fenced area

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Olin Corp.	P.O. Box 408		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Niagara Falls	NY	14302	( )
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 7 28 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): Engineering-Science

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

03 YEARS OF OPERATION
1963 (BEGINNING YEAR) | 1977 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
130,000 [illegible] end liquor (60% water, 30% sulfuric acid, 5-10% sodium chlorite) was disposed of in shallow water well.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
UNKNOWN

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
JOHN KUBAREWICZ	ENGINEERING-SCIENCE		(703) 591-7575
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
KATHRYN GLADDEN		ES	(703) 591-7575	8 4 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
[illegible]	[illegible]

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 130,000

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			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
(IOC)	INORGANIC CHEMICALS	130 000	TN	C-2 liquor
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Sulfuric Acid	7664-939	deepwell		
IOC	Sodium chlorite	999	deepwell		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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)

Cummings (1979

EPA FORM 2070-12 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

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

UnKnown

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

UnKnown, Niagara River adjacent

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

No odor

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

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

UnLikely, well capped

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

UnKnown

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

UnKnown

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

UnKnown

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

EPA FORM 2070-12 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

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

Not apparent

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

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

UnKnown

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/runoff/standing liquids/leaking drums)* — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

UnKnown

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

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

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

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)*

Site inspection

EPA FORM 2070-12 (7-81)

SECTION IV

SITE HISTORY

SECTION IV

SITE HISTORY

Olin Corporation - Deepwell

The site consists of a well used for waste disposal by the Olin Corporation between 1963 and 1977. The well was drilled prior to 1945 to supply process water for the plant. The well, approximately 125 feet deep, was used to dispose of an estimated 130,000 tons of process waste liquor. After 1977, the well was capped and covered with fill (Cummings, 1979). To date there have been no environmental studies at this site.

SECTION V

SUMMARY OF AVAILABLE DATA

SECTION V

SUMMARY OF AVAILABLE DATA

Olin Deep Well

REGIONAL GEOLOGY AND HYDROLOGY

The site is located in the Erie-Ontario lowlands physiographic province. The bedrock of this region is predominantly limestone, dolostone, and shale. Most of the rocks are deep aquifers with regional flow to the south.

In the recent past, most of New York State, including the site, has been repeatedly covered by a series of continental ice sheets. The activity of the glacier widened preexisting valleys, and deposited widespread accumulations of till. The melting of ice, ending approximately 12,000 years ago, produced large volumes of meltwater; this water subsequently shaped channels and deposited thick accumulations of stratified, granular sediments.

As glacial ice retreated from the region, meltwater formed lakes in front ofhe ice margin. This region is covered by lake sediments, the most recent being from Lake Iroquois (a larger predecessor to Lake Ontario) and from Lake Tonawanda (an elongate lake which occupied an east-west valley and drained north into Lake Iroquois). The sediments consist of blanket sands and beach ridges which are occasionally underlain by lacustrine silts and clays (indicating quiet or deeper water deposition).

Granular deposits in this region frequently act as shallow aquifers, whereas lacustrine clays, as well as tills, often inhibit groundwater movement. However, fine-grained, water-lain sediments, such as silts and clays, frequently contain horizontal laminations and sand seams. These internal features facilitate lateral groundwater movement through otherwise low permeability materials.

SITE GEOLOGY

No boring logs are available from the site, although 10 monitoring wells were installed in 1981. The following site geology was made based on USGS topographic map, NYS Museum and Science Service Bedrock Geology Map, NYS Geological Association (1982 & 1966) and nearby off-site borings.

Bedrock consists of Lockport Dolomite and is found at depths below approximately 12 feet. The bedrock surface is overlain by a clayey silt till. Above the till, layered silt/clay lacustrine deposit is occassionally preserved, which is then overlain by a blanket of sandy silt.

Because the depth of the well is uncertain, the formations which may have received the waste fluid range vertically from lower Lockport dolomite downward to upper Queenston shale (see stratigraphic cross section in Appendix).

SITE HYDROLOGY

This discussion of site hydrology is based on interpretations made by Niagara County DOH, and NYSGA (1982).

Although the site soils are apparently low permeability materials, they may comprise a shallow groundwater aquifer. A bedrock aquifer exists in the dolomite; water table levels were given as 17 to 34 feet. Due to the horizontally layer nature of the various bedrock lithologies, multiple aquifers may exist at depth. The uppermost dolomite aquifer may not contain the waste fluid that was deposited down the well. Instead a seperate aquifer may exist in the contaminated rock zone. The flow characteristics of this aquifer can not be evaluated at the present time.

SAMPLING AND ANALYSIS

No samples are available for the Olin Deepwell site. Although groundwater monitoring wells have been installed in the immediate vicinity (along Gill Creek), their samples have not been analyzed for parameters associated with the deepwell.

SECTION VI

ASSESSMENT OF ADEQUACY OF DATA

SECTION VI

ASSESSMENT OF ADEQUACY OF DATA

Olin Corporation-Deepwell

HRS Data Requirement	Comments on Data
Observed Release	
Ground Water	Data available, adequate for HRS evaluation not recommended.
Surface Water	Not applicable.
Air	Not applicable.
Route Characteristics	
Ground Water	Data available, adequate for HRS evaluation.
Surface Water	Data available, adequate for HRS evaluation.
Air	Data available, adequate for HRS evaluation.
Containment	Information available, adequate for HRS evaluation.
Waste Characteristics	Information available, adequate for HRS evaluation.
Targets	Information available, adequate for HRS evaluation.
Observed Incident	Information available revealed no report of incident. No further investigation recommended.
Accessibility	Adequate information available.

SECTION VII

PHASE II WORK PLAN

SECTION VII

PHASE II WORK PLAN

Olin Corporation-Deepwell

OBJECTIVES

The objectives of the Phase II activities are:

- To collect additional field data necessary to complete the HRS scoring.
- To perform a conceptual evaluation of remedial alternatives and estimate budgetary costs for the most likely alternative.
- To prepare a site investigation report.

No additional field data are required to complete the HRS.

TASK DESCRIPTION

The proposed Phase II tasks are described in Table VII-1.

COST ESTIMATE

The estimated manhours required for the Phase II project are presented in Table VII-2 and the estimated project costs by tasks are presented in Table VII-3.

HEALTH AND SAFETY PLAN

The Health and Safety Plan will be submitted as a separate document.

QUALITY ASSURANCE PLAN

The Quality Assurance Plan will be submitted as a separate document.

TABLE VII-1
PHASE II WORK PLAN - TASK DESCRIPTION
Olin Corporation-Deepwell

Tasks	Description of Task
TASK	
II-A Update Work Plan	Review the information in the Phase I report, conduct a site visit, and revise the Phase II work plan.
II-B Conduct Geophysical studies	No further studies necessary.
II-C Conduct Boring/Install Monitoring Wells	No well installation necessary.
II-D Construct Test Pits/ Auger Holes	No further construction of test pits/auger holes necessary.
II-E Perform Sampling and Analysis	
Soil samples from borings	No further sampling necessary.
Soil samples from surface soils	No further sampling necessary.
Soil samples from test pits and auger holes	No further sampling necessary.
Sediment samples from surface water	No further sampling necessary.
Ground-water samples	No ground water sampling necessary.
Surface water samples	No surface water sampling necessary.
Air samples	No air sampling necessary.
Waste samples	No further sampling necessary.
II-F Calculate Final HRS	Based on the field data collected in Tasks IIB-IIE, complete the HRS form.
II-G Conduct Site Assessment	Prepare final report containing Phase I report, additional field data, final HRS and HRS documentation records, and site assessments. The site assessment will consist of a conceptual evaluation of alternatives and a preliminary cost estimate of the most probable alternative.
II-H Project Management	Project coordination, administration and reporting.

TABLE VII-2
PERSONNEL RESOURCES BY TASK
PHASE II HRS SITE INVESTIGATION (SITE: OLIN CORP. - DEEPWELL)

TASK DESCRIPTION	TEAM MEMBERS, MANHOURS												TOTAL HOURS	TOTAL $
	PIC	TRB	FM	DFM	FCM	DAM	HSM	FTL	FT	RAAL	RAAT	SS		
II-A UPDATE WORK PLAN	1		4	1			1	2		6		8	23	376.8
II-B CONDUCT GEOPHYSICAL STUDIES													0	0
II-C CONDUCT BORING/INSTALL MONITORING WELLS													0	0
II-D CONSTRUCT TEST PITS/AUGER HOLES													0	0
II-E PERFORM SAMPLING AND ANALYSIS														
SOIL SAMPLES FROM BORINGS													0	0
SOIL SAMPLES FROM SURFACE SOILS													0	0
SOIL SAMPLES FROM TEST PITS AND AUGER HOLES													0	0
SEDIMENT SAMPLES FROM SURFCE WATER													0	0
GROUND-WATER SAMPLES													0	0
SURFACE WATER SAMPLES													0	0
AIR SAMPLES													0	0
WASTE SAMPLES													0	0
II-F CALCULATE FINAL HRS													0	0
II-G CONDUCT SITE ASSESSMENT	1	2	4	2				4	8	6	24	32	83	1029.44
II-H PROJECT MANAGEMENT	2		6	2			2					8	20	369.16
TOTALS	4	2	14	5	0	0	3	6	8	12	24	48	126	1775.4

TABLE VII-3
COST ESTIMATE BREAKDOWN BY TASK
PHASE II HRS SITE INVESTIGATION-SITE: OLIN CORP. - DEEPWELL)

TASK DESCRIPTION	DIRECT LABOR HOURS	DIRECT LABOR COST	OTHER DIRECT COSTS (ODC), $ LAB ANALYSIS	TRAVEL AND SUBSISTANCE	SUPPLIES	EQUIP. CHARGES	SUBCON-TRACTORS	MISC.	SUBTOTAL ODC	TOTAL ($)
II-A UPDATE WORK PLAN	23	376.8		100	50	50		25	225	601.8
II-B CONDUCT GEOPHYSICAL STUDIES									0	0
II-C CONDUCT BORING/INSTALL MONITORING WELLS									0	0
II-D CONSTRUCT TEST PITS/AUGER HOLES									0	0
II-E PERFORM SAMPLING AND ANALYSIS										
SOIL SAMPLES FROM BORINGS									0	0
SOIL SAMPLES FROM SURFACE SOILS									0	0
SOIL SAMPLES FROM TEST PITS AND AUGER HOLES									0	0
SEDIMENT SAMPLES FROM SURFACE WATER									0	0
GROUND-WATER SAMPLES									0	0
SURFACE WATER SAMPLES									0	0
AIR SAMPLES									0	0
WASTE SAMPLES									0	0
II-F CALCULATE FINAL HRS									0	0
II-G CONDUCT SITE ASSESSMENT	83	1029.44			100	200		75	375	1404.44
II-H PROJECT MANAGEMENT	20	369.16		150	150	50		50	400	769.16
TOTALS	126	1775.4	0	250	300	300	0	150	1000	2775.4

OVERHEAD=	2574.33
SUBTOTAL=	5349.73
FEE=	427.97
TOTAL PROJECT COST=	5777.70

APPENDIX A

BIBLIOGRAPHY

APPENDIX A

BIBLIOGRAPHY

Olin Corp. - Deepwell

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CHEMICALS GROUP
P O BOX [illegible] CHARLESTON, TENNESSEE 37310 (615) 336 2351

November 27, 1979

Mr. John McMahon, P.E.
Regional Engineer
New York State Department of
Environmental Conservation
Region 9
584 Delaware Avenue
Buffalo, New York 14202

Re: "C-2" Well

Dear Mr. McMahon:

As stated during our meeting of September 13, 1979, the C-2 well was reported to the Interagency Task Force on Hazardous Waste in a letter dated June 29, 1979. The letter was addressed to Mr. Peter Millock (ITF in Albany) and was from Mr. Allyn M. Carnam (Olin-Stamford, Conn.). The information was not in the ITF Draft Report but is expected to be included in their Final Report. The information was also reported to the Eckhardt Subcommittee on Oversights and Investigations in their Waste Disposal Site Survey.

In addition, the well was noted as "underground disposal" in the Application for Permit to Discharge or Work in Navigable Waters and Their Tributaries which was filed with the U.S. Army Corps of Engineers on June 28, 1971. Further, copies of the C of E application were submitted to the NYS Department of Environmental Conservation in Albany on June 28, 1971 and September 28, 1971.

Per your request in the September 13th meeting, and confirmed in your letter of October 18. 1979; we have investigated further detail on well construction and usage.

The well was used to dispose of C-2 end liquor. End liquor was approximately 60-65% water, 30% sulfuric acid, and 5-10% sodium chlorite. We had no records or reference to any disposal of organics in the well, and further specific inquires and interviews since our September meeting have produced no evidence to the contrary. We have found an old drawing which locates the well (enclosed).

The best information we have, at present, which is entirely "word of mouth", is that the well was drilled as a water well but never produced at a level sufficient for that use. It was on the order of 125 feet deep and was a 6 inch dia. pipe (it was only a test boring). It was drilled prior to 1945,

by Sprague & Henwood, Inc. Sprague and Henwood has not been able to supply any useable information on the boring. Closure was apparently as follows:

1) A small excavation was made at the top around the casing.
2) The casing was cut off several feet below grade.
3) A load of concrete was dumped in the hole.
4) The area was covered over with fill.

An estimated 130,000 tons (wet basis) were disposed of in the well from 1963-1977.

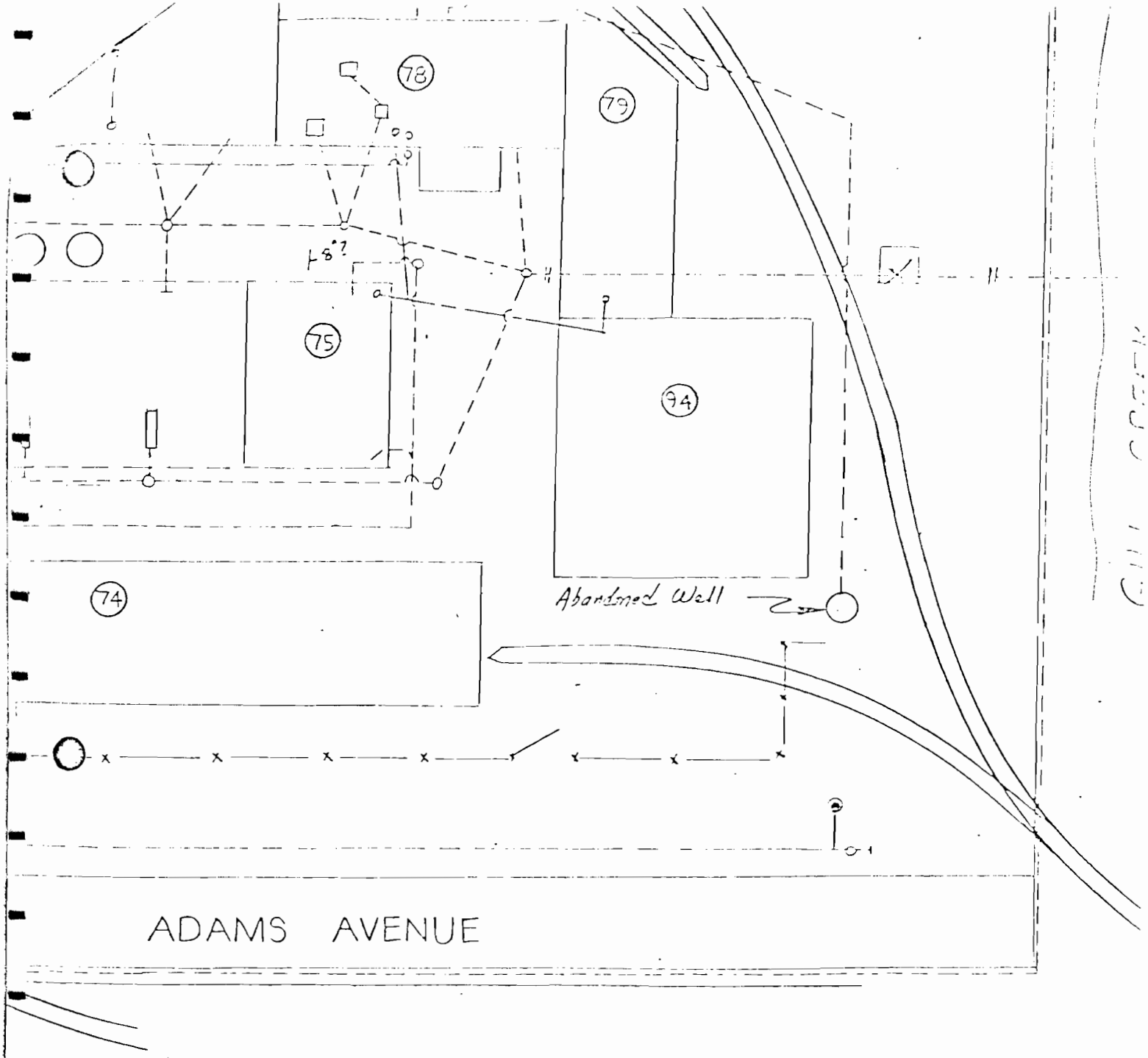
We trust this information is sufficient for your purposes, however, if you do have further questions, please advise us and we will attempt to provide the required information.

Very truly yours,

OLIN CHEMICALS

D. L. Cummings, Specialist
Environmental Affairs Department

DLC/mea
enclosure



Redrawn from original 1959; last Revision - 1973

Ollium
NIAGARA

MAP
PIPING (ALL UNDERGROUND)
-No. 2 PLANT

PROJECT NO.	SCALE	DRAWING NUMBER	REV.
	1" = 40'	8067-A	1

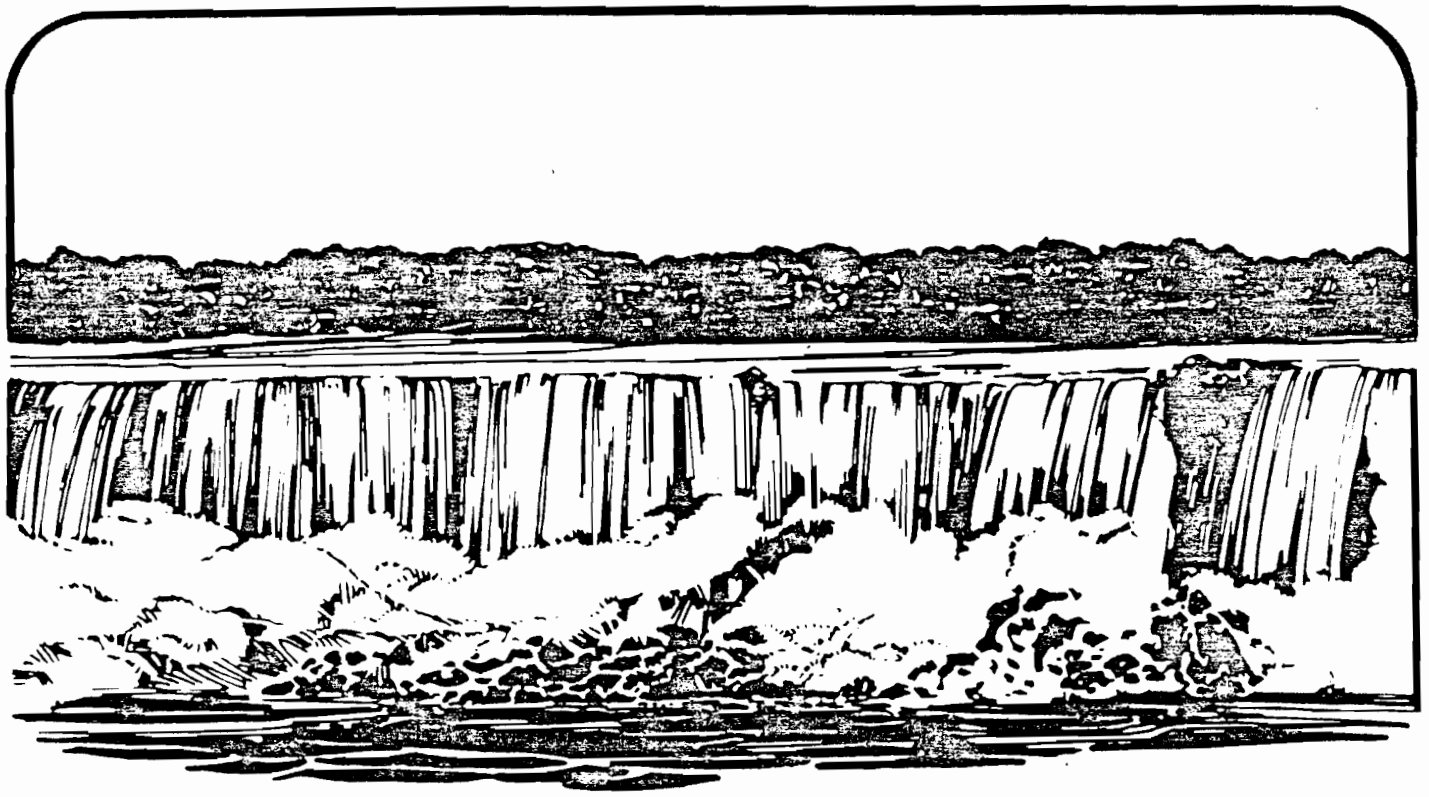
247. [illegible] 1977

Location and General Information

The well is located off Buffalo Avenue in Niagara Falls and is shown on plate 2. 25

The well, 400 feet deep, was used to dispose of approximately 130,000 tons of end liquor (60-65% water, 30% sulfuric acid, 5-10% sodium chlorate). It became an inactive disposal site in 1977. No geologic, hydrologic or chemical information is available for the site.

GEOLOGY OF THE NORTHERN APPALACHIAN BASIN WESTERN NEW YORK



Field Trips Guidebook for New York State Geological Association 54th Annual Meeting

October 8 — 10, 1982
Amherst, New York

Department of Geological Sciences
State University of New York
at Buffalo
Edward J. Buehler and Parker E. Calkin
Editors

In Conjunction With
11th Annual Meetings Eastern Section
American Association of
Petroleum Geologists

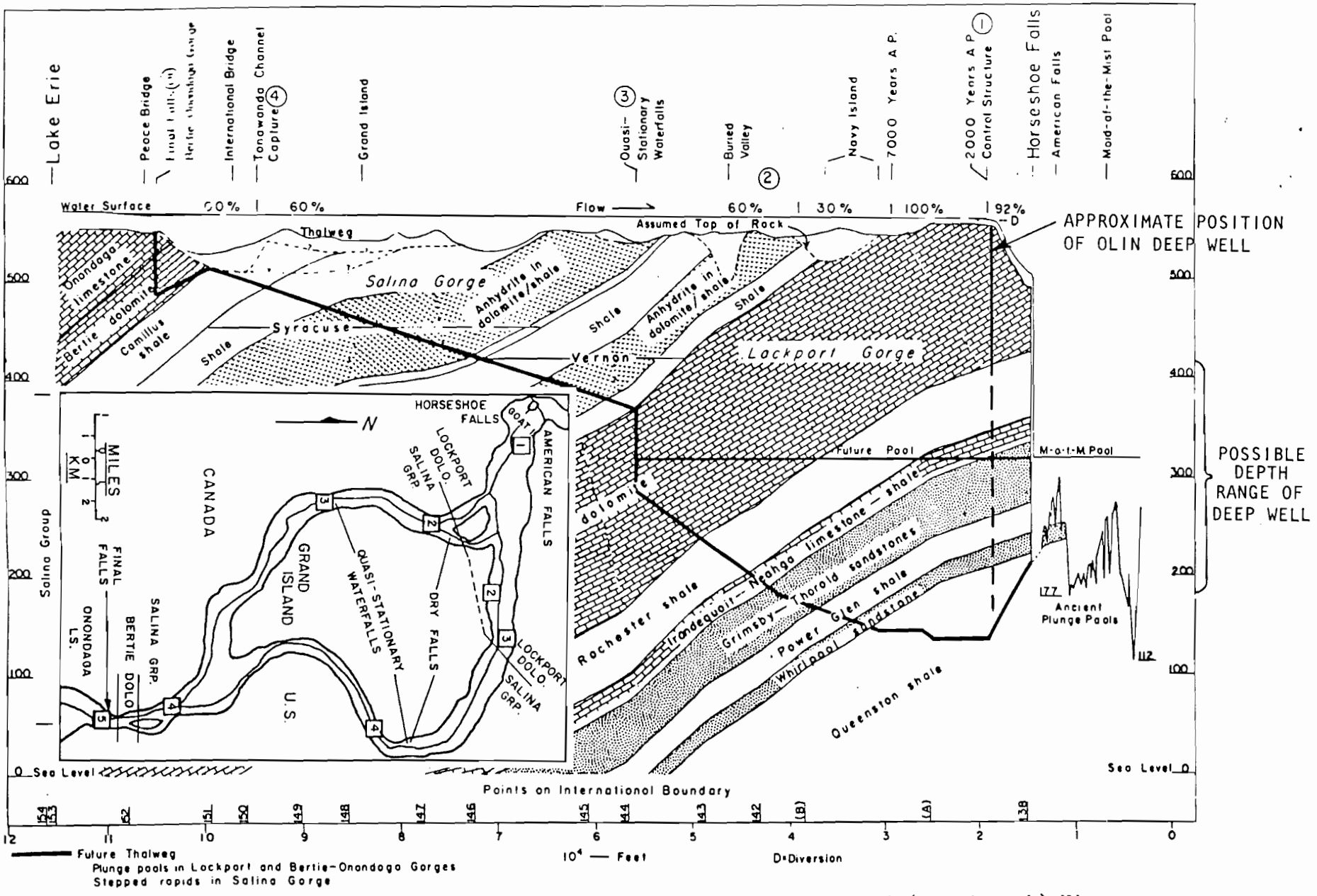


Figure 10. Geologic cross section along the thalweg of the Chippewa Channel (west branch) Niagara River, Lake Erie to Horseshoe Falls. Numbers on top of profile correspond to those on inset map (with equivalent numbers having equivalent dates on both channels) and events in text. Percentages refer to the share of undiverted flow carried during recession of the Falls through the Chippewa Channel. Modified from Philbrick (1974).

TABLE 2. GENERALIZED SECTION OF PALEOZOIC SEDIMENTARY ROCKS IN THE AMERICAN FALLS VICINITY. FROM AMERICAN FALLS INTERNATIONAL BOARD (1974, TABLE C2)

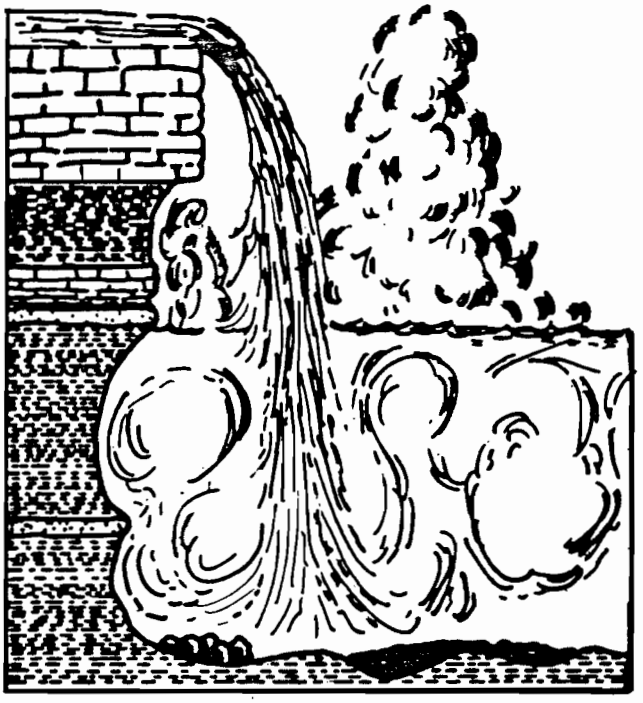
System	Series	Group, formation, member or zone			Thickness (ft)	Lithology
Silurian	Niagaran	Lockport Group	Lockport Formation	Oak Orchard member	70±	Dolomite, medium-gray to medium dark-gray; thin- to thick-bedded, numerous irregular shale and stylolitic shale partings, slightly argillaceous; chert nodules and white dolomite crystals are common. The member is finely crystalline and sugary textured. Vugs commonly are filled with calcite, gypsum and sphalerite. Stromatolite domes are present. The rock is moderately hard.
				Eramosa member	14	Dolomite, medium-gray to grayish-brown; thin- to medium-bedded with numerous bituminous and carbonaceous stylolitic shale partings and stylolites. White porous chert and coarsely crystalline dolomite masses are common; gypsum, anhydrite, fluorite and sphalerite occur in lesser amounts. The member is very finely crystalline and sugary textured. The rock is moderately hard. Occasional vugs are filled with calcite and gypsum.
				Goat Island member	26	Dolomite, medium-gray in upper, dark-gray in middle and light-gray to light tannish-gray in the lower part, occasionally mottled; massive in upper and lower part and thin- to medium-bedded in the middle, slightly to very argillaceous with abundant shale and stylolitic shale partings in the middle. The member is finely to medium crystalline and sugary textured. The lower part is coarsely crystalline, pitted and vuggy; the vugs are occasionally filled with secondary dolomite crystals. The rock is moderately hard.
				Gasport member	18	Dolomite to dolomite-limestone, light- to medium-gray; massive with abundant stylolites and discontinuous shale partings throughout; slightly argillaceous in the upper and conglomeratic with pebbles of DeCew lithology in the base. The member is finely to coarsely crystalline and sugary textured. The rock is moderately hard. Vugs and pits are filled occasionally with gypsum.
				DeCew member	10	Dolomite, medium- to dark-gray; thin- to medium-bedded with an occasional thick bed; argillaceous with wavy irregular shale partings that contain well developed slickensides; stylolites and stylolitic shale partings are common; occasionally masses and nodules of gypsum occur. The member is finely crystalline to crystalline with a well-cemented mosaic texture. The rock is moderately hard. Outcrops contain a "flow" or "enterolithic" structure.
		Clinton Group	Rochester Formation	zone 1	1-2	Shale, medium dark-gray; laminated to platy, slightly dolomitic, dense and moderately hard. This zone is a transition from the Rochester below to the DeCew above.
				zone 2	13±	Shale, medium dark-gray to dark-gray; laminated to blocky and contains discontinuous partings and bands of light-gray dolomitic limestone. Clay minerals are illite, chlorite, kaolinite and traces of montmorillinite; the zone also contains scattered pyrite and gypsum masses near the base. Microcrystalline dolomite is interspersed with finely crystalline illitic clay and quartz. The rock is moderately hard.
				zone 3	6±	Dolomitic shale and shaly dolomite, medium dark-gray to dark-gray; thin-bedded in upper and basal, massive in the middle; shale partings occur in the upper and lower parts illitic clay, traces of chlorite, kaolinite and silt size quartz grains are dispersed throughout the zone. The rock is dense, contains very few pores, and is moderately hard.
				zone 4	25-29	Shale, medium- to dark-gray; laminated to blocky and contains numerous discontinuous partings and bands of light-gray dolomitic limestone; gypsum partings are abundant. Nodules of calcite and gypsum occur occasionally. The clay minerals are illite, chlorite, kaolinite and mixed layered clay. The zone has a dense, microcrystalline texture. Portions of the zone are fairly well cemented with dolomite; other parts are more shaly and rapidly fracture upon drying. The rock is moderately hard.
				zone 5	6-10	Shale, medium- to dark-gray; laminated, dolomitic and contains occasional gypsum partings, white calcite nodules, numerous discontinuous partings and bands of limestone and thick beds of shaly dolomite. Silt size quartz grains are scattered throughout. Clay minerals are illite, chlorite, kaolinite and mixed layered clay. The texture of the zone is microcrystalline. The rock is moderately hard.
				zone 6	4-5	Shale, medium- to dark-gray; laminated to blocky; contains light-gray laminae and bands of calcite and dolomite. The blocky shale contains gypsum partings. Quartz grains are common; pyrite and marcasite occur with carbonaceous matter as a replacement of organic matter. The clay minerals are illite, chlorite and kaolinite. The rock is moderately hard.
			Irondequoit Formation	Unnamed member	6-9	Limestone, light-gray with pinkish tint, medium-bedded to massive with frequent wavy irregular green or black shale partings near the top. The member is coarsely crystalline. The rock is moderately hard. A few vugs and small pores are present.
				Rockway member	10-11	Dolomite, varies from light- to medium-gray in the upper part to brown in the middle and brownish-gray at the base; thin- to thick-bedded in the upper, massive in the middle and thin-bedded at the base; argillaceous to very argillaceous at the base. Dark-gray shale partings and a few gypsum nodules occur throughout the member. The member varies from dense to finely crystalline and has a sugary texture. The rock is moderately hard.
						——Unconformity——
			Reynales Formation	Hickory Corners member	2-3	Limestone, light- to medium-gray; argillaceous, calcitic and highly siliceous; numerous wavy, dark-gray shale partings and bands produce a pseudonodular appearance. The texture of the member is very finely crystalline to dense. The rock is moderately hard.
			Neahga Formation		6	Shale, dark greenish-gray; platy to fissile with a waxy appearance; shaly sandstone at base. Masses of pyrite and gypsum partings occur along the bedding planes; calcite and dolomite occur in small amounts and quartz is the most abundant non-clay mineral. Illite is the dominant clay mineral with lesser amounts of chlorite, kaolinite and mixed layered clay. The rock is soft and flakes readily during wet-dry cycles. Slickensides are present.
		Medina Group	Thorold Formation		9	Sandstone, light-gray to greenish-gray; medium-bedded to massive; irregular green shale partings occur throughout. The sandstone is orthoquartzitic. The texture of the formation is very fine grained. Silt size to fine grained quartz particles are cemented with secondary silica. The rock is hard.
			Grimsby Formation	zone b	8	Sandstone, pink to reddish-brown; thin- to thick-bedded, hematitic, calcareous. The texture varies from fine to medium grain. The rock is moderately hard to hard. A weathered zone frequently occurs at the top of the formation.
				zone a	43	Siltstone and sandstone with interbeds of shale, variegated from red to pale green; pink, white or mottled siltstone or sandstone with red shale and red sandstone interbeds. Gypsum partings occur in shale beds. The sandstone is fine- to medium-grained and well-cemented. The siltstone and shale vary from soft to moderately hard.
			Power Glen Formation		34	Shale with siltstone beds and stringers of silty limestone and dolomite; dark-gray to grayish green shale and siltstone, and light-gray limestone and dolomite; laminated to banded. Quartz is the most abundant non-clay mineral. Clay minerals consist of illite, chlorite and small amounts of montmorillonite and mixed layered clay. The rock is slightly soft to moderately hard.
			Whirlpool Formation		18	Sandstone, light-gray to white; medium-bedded and cross-bedded; fine- to medium grained. The quartz grains are frosted and well rounded, and are well cemented by secondary silica. Feldspar grains altered to kaolinite are abundant. Occasional green shale inclusions and chloritic shale partings occur throughout. The rock is slightly soft to moderately hard.
						——Unconformity——
Ordovician	Cincinnatian	Richmond Group	Queenston Formation		100±	Shale (technically classified as a claystone) reddish-brown (ferric) shale with interbeds and nodules of green (ferrous) shale; massive to blocky. The shale is silty and is cemented by dolomite and calcite. Scattered gypsum nodules occur throughout; quartz is a common constituent. Clay minerals are illite, chlorite, kaolinite, montmorillonite and mixed layered clay. The shale is highly compacted and moderately hard. Numerous small, high angle slickenzides are stained with iron oxide.
			Total		429±	

Note:

The stratigraphy is compiled from Zenger (1965 and 1966), Fisher (1966) and Kilgour (1966), from stratigraphic studies by U.S. Army Engineer District, Buffalo New York and from petrographic descriptions by U.S. Army Engineer Division, Missouri River. The Rochester Formation zonation was developed for this study by the Buffalo District.

GEOLOGY OF WESTERN NEW YORK

GUIDE BOOK



NEW YORK STATE GEOLOGICAL ASSN.

38th ANNUAL MEETING

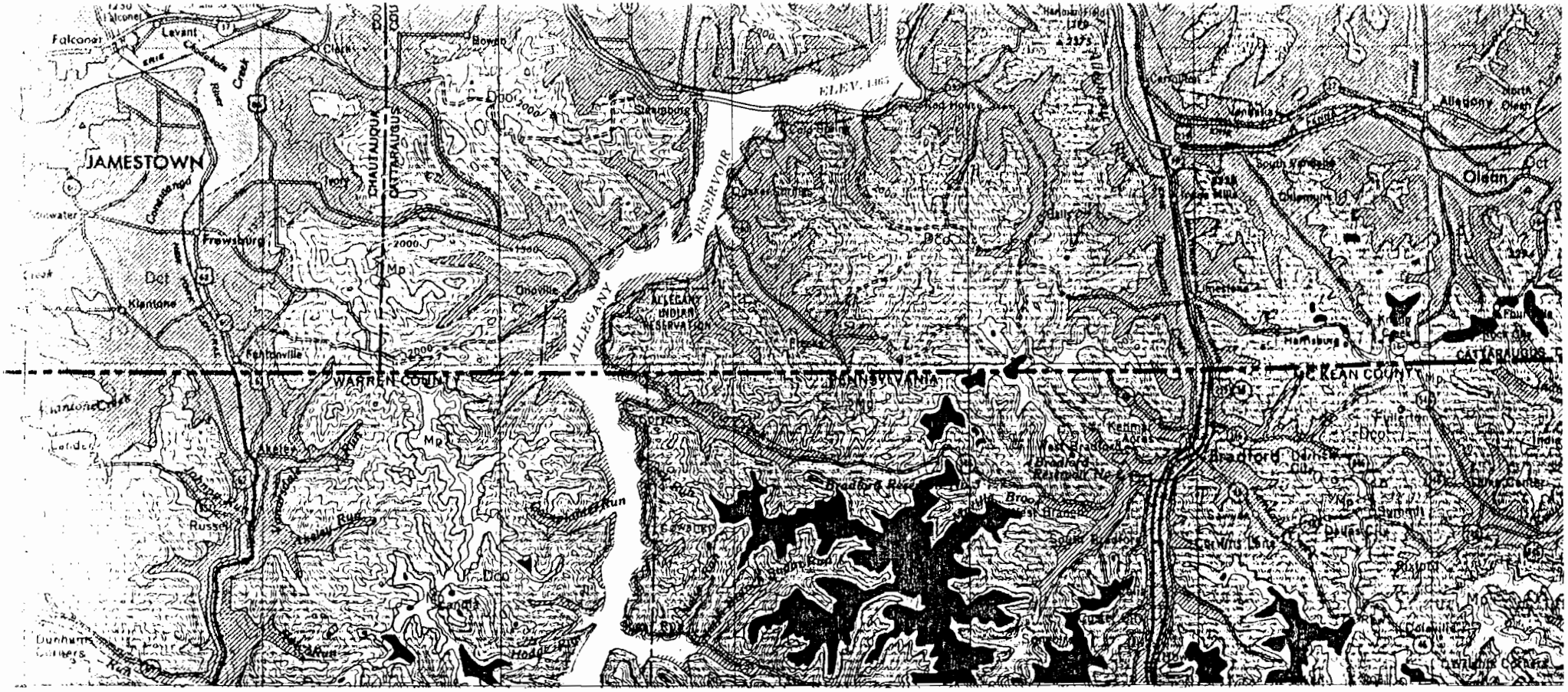
1966

DEPARTMENT OF GEOLOGICAL SCIENCES

STATE UNIVERSITY OF NEW YORK AT BUFFALO

BUFFALO, N. Y.

E. J. Buehler, Editor



GEOLOGIC MAP OF NEW YORK

1970

Niagara Sheet

Scale 1:250,000

5 0 5 10 15 Statute Miles 20

5 0 5 10 15 20 25 Kilometers 30

CONTOUR INTERVAL 100 FEET

APPENDIX B

NYS REGISTRY FORM

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Code: _____

Site Code: 932037

Name of Site: Olin Corporation - Deepwell Region: 9

County: Niagara Town/City Niagara Falls

Street Address Buffalo Avenue

Status of Site Narrative:

A well was used to dispose of approximately 130,000 tons of end liquor (60-65% water, 30% sulfuric acid, 5-10% sodium chlorite. Well has been capped and covered.

Type of Site: Open Dump ☐ Treatment Pond(s) ☐ Number of Ponds ___
Landfill ☐ Lagoon(s) ☐ Number of Lagoons ___
Structure ☐ Deep Well [x]

Estimated Size 1 Acres

Hazardous Wastes Disposed? Confirmed [x] Suspected ☐

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
End liquor (60-65% water, 30% sulfuric acid, 5-10% sodium chlorate)	130,000 tons

* Use additional sheets if more space is needed.

47-15-11(2/80)

Name of Current Owner of Site: Olin Corp.

Address of Current Owner of Site: Niagara Falls

Time Period Site Was Used for Hazardous Waste Disposal:

_____, 1963 To _____, 1977

Is site Active ☐ Inactive ☒
(Site is inactive if hazardous wastes were disposed of at this site and site was closed prior to August 25, 1979)

Types of Samples: Air ☐ Groundwater ☐ None ☐
Surface Water ☐ Soil ☐

Remedial Action: Proposed ☐ Under Design ☐
In Progress ☐ Completed ☐
Nature of Action:

Status of Legal Action: _____ State ☐ Federal ☐

Permits Issued: Federal ☐ Local Government ☐ SPDES ☐
Solid Waste ☐ Mined Land ☐ Wetlands ☐ Other ☐

Assessment of Environmental Problems:

None observable.

Assessment of Health Problems:

Unknown.

Persons Completing this Form:

John Kubarewicz

New York State Department of Environmental Conservation

Date August 24, 1983

New York State Department of Health

Date _____

6/3/81