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Site Name: Genii Research  
CERCLIS ID No.: N/A  
Street Address: 680 Albany Road  
City/State/Zip: N.Amityville , NY 11701

Investigator: TAMS/GZA  
Agency/Organization: Consultants  
Street Address: 364 Nagel Drive  
City/State: Buffalo, NY

Date: 5/25/00

WASTE CHARACTERISTICS

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Waste Characteristics (WC) Calculations:

1	Metals	Contaminated soil	Ref: 1,4	WQ value	maximum
	Volume	3.20E+03 cu ft		4.74E-02	4.74E-02

There are metal plating and machining operations on Site. Surficial soil contamination was determined to include chromium, copper, iron, lead, magnesium, and zinc. Outdoor work area including scrap metal, solvents, sinks and drums were identified for plating operation. The sink was observed to drain into a 5 gallon pail. The outside work area is about 1600 square feet. Depth of Contamination appears to reside within upper 24 inches of soil. Actual waste quantity is unknown.  
Ref: 1,2,9

Area	1.60E+03 sq ft	4.71E-02
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Ground Water Pathway Criteria List  
Suspected Release

Are sources poorly contained? (y/n/u)	Y
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	N
Is precipitation heavy? (y/n/u)	N
Is the infiltration rate high? (y/n/u)	N
Is the site located in an area of karst terrain? (y/n)	N
Is the subsurface highly permeable or conductive? (y/n/u)	Y
Is drinking water drawn from a shallow aquifer? (y/n/u)	Y
Are suspected contaminants highly mobile in ground water? (y/n/u)	Y
Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)	Y
Other criteria? (y/n)	Y

SUSPECTED RELEASE? (y/n) Y

Summarize the rationale for Suspected Release:

Documentation of poor material handling and suspected sink drain discharge directly into soils is a potential source of contamination. Water table is documented as being at 19 ft. Subsurface soil conditions are highly permeable. Past violations on the site documented exceedances of phenols, and chloroform in wastewater discharge. Odors suspected to be solvents were detected on the site. These potential contaminants would be mobile in ground water. Metals found in soil would be less likely to migrate. SCDH results from 1994 showed lead and chromium in excess of NYS drinking water standards. SCDH documentation reports a tumbler discharging to a drywell on the northside of the building and then pumped to a storm drain in the south-east front parking lot.

Ref: 1,2,10,11

Ground Water Pathway Criteria List  
Primary Targets

Is any drinking water well nearby? (y/n/u)	Y
Has any nearby drinking water well been closed? (y/n/u)	N
Has any nearby drinking water well user reported foul-testing or foul-smelling water? (y/n/u)	N
Does any nearby well have a large drawdown/high production rate? (y/n/u)	Y
Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? (y/n/u)	U
Does analytical or circumstantial evidence suggest contamination at a drinking water well? (y/n/u)	N
Does any drinking water well warrant sampling? (y/n/u)	Y
Other criteria? (y/n)	N

PRIMARY TARGET(S) IDENTIFIED? (y/n) Y

Summarize the rationale for Primary Targets:

Groundwater is the source of drinking water in Nassau and Suffolk Counties. The groundwater is contained in the Long Island Aquifer system. Water is drawn from three portions of this aquifer the Glacial, Magothy, and Lloyd formations.

The Suffolk County Water Authority (SCWA) has 149 wells in the Glacial Aquifer, most private wells also draw from this aquifer.

The Glacial Aquifer is the shallowest. The Magothy Aquifer is the largest of the three and contains the most amount of water. There are 251 SCWA wells drawing from this portion of the Aquifer.

The Lloyd formation is largely untapped. The total thickness of the aquifer is about 600 feet along the North Shore and is about 2000 feet along the South Shore. Customers in the SCWA district receive water from a blended system.

The results of groundwater sampling by SCHED in 1994 showed lead (170 mg/l), and chromium (140 mg/l), in excess of NYS groundwater standards.

Ref: 1,3

GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics

Pathway Characteristics			Ref.
Do you suspect a release? (y/n)	Yes		
Is the site located in karst terrain? (y/n)	No		
Depth to aquifer (feet):	19		1
Distance to the nearest drinking water well (feet):	0		
<b>LIKELIHOOD OF RELEASE</b>	<b>Suspected Release</b>	<b>No Suspected Release</b>	<b>References</b>
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =	550	0	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) Y	0	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA Underlies Site	20	0	
7. RESOURCES	5	0	
T =	25	0	

WASTE CHARACTERISTICS

WC =	18	0
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GROUND WATER PATHWAY SCORE:

	3
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Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist. (miles)	Population Served	Reference	Value
None				
*** Note : Maximum of 5 Wells Are Printed ***			Total	

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0		0
Greater than 1/4 to 1/2 mile	0		0
Greater than 1/2 to 1 mile	0		0
Greater than 1 to 2 miles	0		0
Greater than 2 to 3 miles	0		0
Greater than 3 to 4 miles	0		0
		Total	0

Apportionment Documentation for a Blended System

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There are approximately 400 wells that draw potable groundwater from the Long Island Aquifer. Water is drawn from various portions of the aquifer depending on water levels and availability.

Ref: 3

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Surface Water Pathway Criteria List  
Suspected Release

Is surface water nearby? (y/n/u)	N
Is waste quantity particularly large? (y/n/u)	U
Is the drainage area large? (y/n/u)	N
Is rainfall heavy? (y/n/u)	N
Is the infiltration rate low? (y/n/u)	Y
Are sources poorly contained or prone to runoff or flooding? (y/n/u)	Y
Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u)	N
Is vegetation stressed along the probable runoff path? (y/n/u)	N
Are sediments or water unnaturally discolored? (y/n/u)	N
Is wildlife unnaturally absent? (y/n/u)	N
Has deposition of waste into surface water been observed? (y/n/u)	N
Is ground water discharge to surface water likely? (y/n/u)	N
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	N
Other criteria? (y/n)	N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

Nearest surface water is the Amityville Creek approximately 2.0 miles south southwest. Storm water infiltration on site or is diverted to recharge basins. It is unlikely for this site to impact natural surface water bodies. Actual waste quantity is unknown. Historically, violations had been documented by the SCHED and the NYSDEC for chemical spills, improper chemical storage, and on-site soil contamination.

Rainfall is considered average based on 1998 NOAA Climatological Data.

Site is predominantly covered by asphalt and concrete, thereby reducing infiltration and increasing surface runoff. Storm water and surface runoff are kept onsite for most industrial and commercial properties and infiltrates into soils.

Ref: 1,2,4,7



Surface Water Pathway Criteria List  
Primary Targets

Is any target nearby? (y/n/u)                      If yes:                      N  
    N Drinking water intake  
    N Fishery  
    N Sensitive environment

Has any intake, fishery, or recreational area been closed? (y/n/u)                      N

Does analytical or circumstantial evidence suggest surface water  
    contamination at or downstream of a target? (y/n/u)                      N

Does any target warrant sampling? (y/n/u)                      If yes:                      N  
    N Drinking water intake  
    N Fishery  
    N Sensitive environment

PRIMARY INTAKE(S) IDENTIFIED? (y/n)                      N

Summarize the rationale for Primary Intakes:

No surface water intakes in the area. Nassau and Suffolk counties receive drinking water from groundwater wells.

Ref: 1  
continued -----

continued -----

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Fisheries:

Shellfish harvesting in coastal areas is prohibited for much of Suffolk County. This is due to elevated levels of coliform and metals found in shellfish.

Ref: 9

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Sensitive Environments:

Ref:

SURFACE WATER PATHWAY SCORESHEETS

Pathway Characteristics

		Ref.
Do you suspect a release? (y/n)	No	
Distance to surface water (feet):	10560	6
Flood frequency (years):	1-10	
What is the downstream distance (miles) to:		
a. the nearest drinking water intake?	N.A.	
b. the nearest fishery?	4.0	
c. the nearest sensitive environment?	2.0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION 0 person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	0	5	
T =	0	5	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body Type/Flow	Population Served	Ref.	Value
None					
Total Primary Target Population Value					0
Total Secondary Target Population Value					0

\*\*\* Note : Maximum of 6 Intakes Are Printed \*\*\*

Apportionment Documentation for a Blended System



Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	0	12	
T =	0	12	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Great South Bay	N	Coastal,ocean,Gr.Lake	6	12
None				
Total Primary Fisheries Value				0
Total Secondary Fisheries Value				0

\*\*\* Note : Maximum of 6 Fisheries Are Printed \*\*\*

Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	10	
T =	0	10	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Massapequa Preserve	N	>100-1000 cfs	6	0
Total Primary Sensitive Environments Value				0
Total Secondary Sensitive Environments Value				0
*** Note: Maximum of 6 Sensitive Environments Are Printed ***				

Surface Water Pathway Threat Scores

Threat	Likelihood of Release (LR) Score	Targets (T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	500	5	18	1
Human Food Chain	500	12	18	1
Environmental	500	10	18	1
SURFACE WATER PATHWAY SCORE:				3



Soil Exposure Pathway Criteria List  
Resident Population

Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u)	Y
Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u)	N
Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u)	Y
Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u)	U
Does any neighboring property warrant sampling? (y/n/u)	Y
Other criteria? (y/n)	Y

RESIDENT POPULATION IDENTIFIED? (y/n) Y

Summarize the rationale for Resident Population:

According to a February 16, 1994 letter from the SCHD, one soil sample was collected from a boring at the western area of the Site. Specifically, 1 foot west of a concrete slab and 3 feet north of the loading dock. This soil sample indicated elevated levels of chromium, copper, iron, lead, magnesium, and zinc. July and October 1990 observations by a Town of Babylon Sanitation Inspector reported large accumulation of debris near the rear of the building and a green liquid staining the pad underlying the outside trailer. A FOIL Response has not yet been received by the New York State Department of Health.

SOIL EXPOSURE PATHWAY SCORESHEETS

Pathway Characteristics

		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	Yes	2,4
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	Yes	4
Is the facility active? (y/n):	Yes	4

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION LE =	550	

Targets

2. RESIDENT POPULATION 0 resident(s) 0 school/daycare student(s)	0	
3. RESIDENT INDIVIDUAL	0	
4. WORKERS None	0	
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	0	
T =	0	

WASTE CHARACTERISTICS

WC =	18
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RESIDENT POPULATION THREAT SCORE:	1
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NEARBY POPULATION THREAT SCORE:	1
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Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE:	2
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Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
None		
Total Terrestrial Sensitive Environments Value		

\*\*\* Note : Maximum of 7 Sensitive Environments Are Printed \*\*\*

Air Pathway Criteria List  
Suspected Release

Are odors currently reported? (y/n/u)	Y
Has release of a hazardous substance to the air been directly observed? (y/n/u)	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	U
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	Y
Other criteria? (y/n)                      Y	
SUSPECTED RELEASE? (y/n)	
Y	

Summarize the rationale for Suspected Release:

During a 1999 site reconnaissance odors (characteristic of solvents and thinners) were documented at the site. 55 gallon drums of rubber solvents, "Sulf-Kut", scrap metal and empty drums were also observed.

Ref: 4

AIR PATHWAY SCORESHEETS

Pathway Characteristics

Pathway Characteristics			Ref.
Do you suspect a release? (y/n)	Yes		
Distance to the nearest individual (feet):	0		
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =	550	0	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 500 person(s)	5000		
4. SECONDARY TARGET POPULATION	12	0	
5. NEAREST INDIVIDUAL	50	0	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	0	
8. RESOURCES	5	0	
T =	5067	0	

WASTE CHARACTERISTICS

WC = | 32 | 0 |

AIR PATHWAY SCORE:

100

Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	N.A.		0
Greater than 0 to 1/4 mile	N.A.		0
Greater than 1/4 to 1/2 mile	380	5	3
Greater than 1/2 to 1 mile	1500	5	3
Greater than 1 to 2 miles	5975	5	3
Greater than 2 to 3 miles	9976	5	1
Greater than 3 to 4 miles	13964	5	2
Total Secondary Population Value			12

Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
None		

Total Primary Sensitive Environments Value

\*\*\* Note : Maximum of 7 Sensitive Environments Are Printed\*\*\*

Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
None			

Total Secondary Sensitive Environments Value

SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	3
SURFACE WATER PATHWAY SCORE:	3
SOIL EXPOSURE PATHWAY SCORE:	2
AIR PATHWAY SCORE:	100
SITE SCORE:	50



SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? Yes

If yes, identify the well(s).

Nassau and Suffolk counties are both supplied with groundwater for drinking purposes. Potential on Site groundwater contamination identified.

If yes, how many people are served by the threatened well(s)? 10000

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?
- |  |    |
|--|----|
| A. Drinking water intake                                     | No |
| B. Fishery   | No |
| C. Sensitive environment (wetland, critical habitat, others) | No |

If yes, identify the target(s).

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? Yes

If yes, identify the properties and estimate the associated population(s)  
Residential properties (30-50) people are located to the west of the property.

4. Are there public health concerns at this site that are not addressed by PA scoring considerations? Yes

If yes, explain:

Illegal storage of hazardous/toxic materials and other violations were documented in the past.

REFERENCE LIST

1. Suffolk County Health Department (SCHD) February 1994  
Soil and Groundwater Sampling
2. Final Field Activities Plan Preliminary Site Assessment January 2000  
TAMS\GZA Consultants
3. Suffolk County Water Authority
4. Field observations by Michele Wittman of GZA on June 23, 1999  
and June 24, 1999.
5. 1994 Aerial photographs 1" = 660'
6. 1969 Amityville 7.5 Minute USGS Topographical Map
7. Town of Babylon Engineering Department
8. Department of Interior Fish and Wildlife Service
9. NYSDEC Division of Fish, Wildlife, and Marine Resources, Telefax  
information from Carol Hoffman
10. SCDH October, 1995 sampling results
11. NYS Drinking Water Regulations June 1998
12. SCDH - Industrial Waste Process - Discharge Description Sheet
13. Inter-Office Communication, Town of Babylon October 10, 1990