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WASTE DIVISION

**Phase II Property Transfer  
Assessment  
Former A. B. Dick Building  
Bloomington, Minnesota**

Submitted to:  
The Chase Company

Submitted by:  
Bay West, Inc.

  
William Cole Storm, CHMM  
Project Manager

August 14, 1991



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## 1.0 Introduction

Bay West, Inc. was contracted by The Chase Company to conduct a Phase II investigation of the former A. B. Dick building located at 201 East 78th Street in Bloomington, Minnesota (Figure 1).

The purpose of this investigation was to remove and drum the residual material in the building's flammable liquid trap (Figure 2) and assess the integrity of the trap.

The evaluation consisted of the following:

- o Pumping the contents of the trap into drums and collecting and analyzing a representative sample to determine the proper disposal method.
- o Cleaning the trap and inspecting the "tank's" condition. Upon inspection, the "tank" was found to be in poor condition and that a release of material was highly probable.
- o Cutting through the bottom of the "tank", collecting and analyzing soil samples to determine the extent, if any, of subsurface contamination. Laboratory and field analyses showed that there was, in fact, some contamination of the underlying soils.
- o Completing four soil borings surrounding the "tank", and collecting and analyzing soil samples to determine the extent and lateral extent (i.e., horizontal migration), if any, of the contamination.

## 2.0 Residual Material Handling

A Bay West field crew arrived at the A. B. Dick building at 10:10 am on July 11, 1991; the flammable liquid trap was opened and the contents inspected. The "tank" contained approximately two feet of what appeared to be a petroleum-based sludge.

The sludge was pumped from the "tank" and placed into two 55-gallon drums. Representative samples were collected and submitted to the Bay West Analytical Laboratory and analyzed for disposal criteria (Appendix I).

Once the "tank" was emptied, it was pressure washed and inspected. The lower six inches of the "tank" walls were visibly corroded, with the corrosion penetrating completely through in some areas. Corrosion along the welded seams extended approximately two feet up from the bottom. The upper walls appeared to show signs of pitting, but were not corroded through.

Results from analysis of the sludge are contained in Appendix I. The sludge had a high value (22%) for extractable organic halogens (EOX), which may indicate the presence of chlorinated solvents. This EOX value may prohibit the disposal of the sludge through a fuel blending operation and consequently require disposal via incineration.



### 3.0 Subsurface Investigation

Since the integrity of the "tank" was poor, a scope of work was developed to investigate the underlying soils. One soil boring was completed through the bottom of the "tank" to a depth of ten feet. Soil samples were collected at two-foot intervals. The soil samples were analyzed in the field via the Jar Headspace Method utilizing an HNu photoionization detector. This method measures the concentration of volatile organic compounds (VOCs) liberated from a soil sample and aids in determining sample selection for confirmatory laboratory analysis.

Field measurements confirm that the underlying soils have been impacted. HNu readings of 1,000 ppm were detected down to six feet. Below this, the values decreased rapidly: 300 ppm @ eight feet and 25 ppm @ ten feet (Table 1). Samples collected at the zero-to-two foot and eight-to-ten foot intervals were submitted to the Bay West Analytical Laboratory for analysis of VOCs (via U.S. EPA Method 8010/8020) and total petroleum hydrocarbons (TPHC) (via U.S. EPA Method 5030/8020).

\* The zero-to-two foot sampling interval contained 15,000 ppm TPHC and 15 ppm of tetrachloroethene in the VOC fraction. Results of the eight-to-ten foot sampling interval were below the detection limits for both TPHC and VOCs (Table 2).

Ground water was not encountered.

Since limited contamination of the underlying soils was found, a scope of work was developed to determine if lateral migration of the contamination had occurred. Four soil borings were completed through the concrete floor surrounding the flammable liquid trap (Figure 3). The depth of the soil borings ranged from five feet six inches to eight feet, depending on subsurface conditions. Field measurements via the Jar Headspace Method were conducted (Table 3).

Results of the field measurements for borings B-1 and B-4 were non-detectable, while slightly elevated levels were detected in borings B-2 (9 ppm @ the three-to-five foot interval and 11 ppm @ the five-to-six foot interval) and B-3 (39 ppm @ the one-to-three foot interval).

Samples were collected from the end of boring depth for each boring and submitted to the Bay West Analytical Laboratory for TPHC and VOC analysis.

Results for TPHC analysis were below the detection limit in all borings with the exception of B-3 which had a concentration of 37 ppm. Boring B-4 had no detectable VOCs, while slightly elevated levels of VOCs were detected in the other three borings. Boring B-1 had .052 ppm of tetrachloroethene and .085 ppm of 1,1,1-trichloroethane. Boring B-2 had .046 ppm 1,1,1-trichloroethane. Boring B-3 had .091 ppm tetrachloroethene and .100 ppm 1,1,1-trichloroethane (Table 4).





#### 4.0 Discussion

The Minnesota Pollution Control Agency has not yet set guidelines for soil contaminate concentrations. The New Jersey Department of Environmental Protection's (DEP's) Bureau of Industrial Site Evaluation working through the Environmental Cleanup Responsibility Act (ECRA) of 1983 (N.J.A.C. 131K-6) has established guidelines or action levels for soil contamination associated with the transfer of industrial properties. These values (Figure 4) serve to alert the regulated community that further investigation may be necessary to assess the extent of contamination due to potential for adverse human health or environmental effects associated with these concentrations.

Except for immediately underlying the flammable liquid trap's "tank", the soil values associated with the subject site do not approach the concentrations established by the New Jersey DEP's BISE for TPHC or VOCs.

Ground water was not encountered in any of the soil borings. Information on regional ground water is contained in Appendix II.

The residual material lying beneath the flammable liquid trap is, for all practical purposes, "encapsulated" by the building; it is isolated from contact with precipitation infiltrating through the soil or other environmental factors which allow migration.

#### 5.0 Recommendations

Since the migration of residual material trapped underneath the building is unlikely, remediation (if possible) of the small amount of contaminated soil is unwarranted.

As a conservative measure, removal of the soil directly beneath the flammable liquid trap could be attempted. This would include approximately 2 to 3 cubic yards of the most contaminated soil. The actual quantity removed will depend on the stability of the underlying soils.

The flammable liquid trap and soil excavation cavity, if any, should be filled with a cement slurry back to grade with the original floor.

#### 6.0 Disclaimer

This evaluation has been conducted in a manner consistent with the level of skill and care typically exercised by members of the environmental consulting profession currently providing environmental evaluation services under similar time and budget constraints.

The evaluation has been limited to the areas and items specifically investigated and included in this report. It is possible that the property has pollution problems that were not



discovered due to the physical limitations of the investigation. It is also possible that the property may have future environmental liability in areas not yet recognized by today's standards. Bay West, Inc. expressly does not warrant that this property is free of pollutants nor that all pollutants have been identified.







Sample ID: 2279-1  
Project #: 2279

Laboratory Sample #: 13129  
Laboratory Project #: S-1399

Purgeable Halogenated and Non-Halogenated Compounds  
8010/8020 Target Compound List

<u>Compound Name</u>	<u>Reporting Limit</u> mg/Kg	<u>Reported Value</u> mg/Kg
Benzene	4.0	ND
Bromodichloromethane	4.0	ND
Bromoform	4.0	ND
Bromomethane	4.0	ND
Carbon Tetrachloride	4.0	ND
Chlorobenzene	4.0	ND
Chloroethane	4.0	ND
Chloroform	4.0	ND
Chloromethane	4.0	ND
Dibromochloromethane	4.0	ND
Dichlorobenzene, 1,2-	4.0	ND
Dichlorobenzene, 1,3-	4.0	ND
Dichlorobenzene, 1,4-	4.0	ND
Dichlorodifluoromethane	4.0	ND
Dichloroethane, 1,1-	4.0	ND
Dichloroethane, 1,2-	4.0	ND
Dichloroethene, 1,1-	4.0	ND
Dichloroethene, t-1,2-	4.0	ND
Dichloropropane, 1,2-	4.0	ND
Dichloropropene, c-1,3-	4.0	ND
Dichloropropene, t-1,3-	4.0	ND
Ethylbenzene	4.0	(a)
Methylene Chloride	4.0	ND
Tetrachloroethane, 1,1,2,2-	4.0	ND
Tetrachloroethene	4.0	15.
Trichloroethane, 1,1,1-	4.0	ND
Trichloroethane, 1,1,2-	4.0	ND
Trichloroethene	4.0	ND
Trichlorofluoromethane	4.0	ND
Toluene	4.0	ND
Vinyl Chloride	4.0	ND
Styrene	4.0	(a)
Xylenes	4.0	(a)

Analyzed: July 18, 1991

Method : EPA 5030/8010/8020 Modified

ND = Not Detected

\*TPH interference prevents the accurate determination of the compounds.

<u>Parameter</u>	<u>Target</u> <u>Reporting</u> <u>Limit</u> mg/Kg	<u>2279-1</u> <u>(13129)</u> mg/Kg
Total Petroleum Hydrocarbons (Fuel Oil)	0.050	15000.
Extraction Factor (Normalized)		4049.

Extracted: July 17, 1991  
Analyzed: July 17, 1991

Method : EPA 5030/8020 Modified

**TABLE 2**





Sample ID: 2279-2  
Project #: 2279

Laboratory Sample #: 13132  
Laboratory Project #: 5-1399

Purgeable Halogenated and Non-Halogenated Compounds  
8010/8020 Target Compound List

<u>Compound Name</u>	<u>Reporting Limit</u> mg/Kg	<u>Reported Value</u> mg/Kg
Benzene	0.045	ND
Bromodichloromethane	0.045	ND
Bromoform	0.045	ND
Bromomethane	0.045	ND
Carbon Tetrachloride	0.045	ND
Chlorobenzene	0.045	ND
Chloroethane	0.045	ND
Chloroform	0.045	ND
Chloromethane	0.045	ND
Dibromochloromethane	0.045	ND
Dichlorobenzene, 1,2-	0.045	ND
Dichlorobenzene, 1,3-	0.045	ND
Dichlorobenzene, 1,4-	0.045	ND
Dichlorodifluoromethane	0.045	ND
Dichloroethane, 1,1-	0.045	ND
Dichloroethane, 1,2-	0.045	ND
Dichloroethene, 1,1-	0.045	ND
Dichloroethene, t-1,2-	0.045	ND
Dichloropropane, 1,2-	0.045	ND
Dichloropropene, c-1,3-	0.045	ND
Dichloropropene, t-1,3-	0.045	ND
Ethylbenzene	0.045	ND
Methylene Chloride	0.045	ND
Tetrachloroethane, 1,1,2,2-	0.045	ND
Tetrachloroethene	0.045	ND
Trichloroethane, 1,1,1-	0.045	ND
Trichloroethane, 1,1,2-	0.045	ND
Trichloroethene	0.045	ND
Trichlorofluoromethane	0.045	ND
Toluene	0.045	ND
Vinyl Chloride	0.045	ND
Styrene	0.045	ND
Xylenes	0.045	ND

Analyzed: July 18, 1991  
Method : EPA 5030/8010/8020 Modified

ND = Not Detected

<u>Parameter</u>	<u>Target Reporting Limit</u> mg/Kg	<u>2279-2</u> <u>(13132)</u> mg/Kg
Total Petroleum Hydrocarbons (Fuel Oil)	0.050	<2.2
Extraction Factor (Normalized)		44.2

Extracted: July 17, 1991  
Analyzed : July 17, 1991

Method : EPA 5030/8020 Modified

**TABLE 2-CONT.**





















Sample ID: SB-1  
Project #: 2279

Laboratory Sample #: 13590  
Laboratory Project #: 5-1455

Purgeable Halogenated and Non-Halogenated Compounds  
8010/8020 Target Compound List

Compound Name	Reporting Limit mg/Kg	Reported Value mg/Kg
Benzene	0.042	ND
Bromodichloromethane	0.042	ND
Bromoform	0.042	ND
Bromomethane	0.042	ND
Carbon Tetrachloride	0.042	ND
Chlorobenzene	0.042	ND
Chloroethane	0.042	ND
Chloroform	0.042	ND
Chloromethane	0.042	ND
Dibromochloromethane	0.042	ND
Dichlorobenzene, 1,2-	0.042	ND
Dichlorobenzene, 1,3-	0.042	ND
Dichlorobenzene, 1,4-	0.042	ND
Dichlorodifluoromethane	0.042	ND
Dichloroethane, 1,1-	0.042	ND
Dichloroethane, 1,2-	0.042	ND
Dichloroethene, 1,1-	0.042	ND
Dichloroethene, t-1,2-	0.042	ND
Dichloropropane, 1,2-	0.042	ND
Dichloropropene, c-1,3-	0.042	ND
Dichloropropene, t-1,3-	0.042	ND
Ethylbenzene	0.042	ND
Methylene Chloride	0.042	ND
Tetrachloroethane, 1,1,2,2-	0.042	ND
Tetrachloroethene	0.042	0.052
Trichloroethane, 1,1,1-	0.042	0.085
Trichloroethane, 1,1,2-	0.042	ND
Trichloroethene	0.042	ND
Trichlorofluoromethane	0.042	ND
Toluene	0.042	ND
Vinyl Chloride	0.042	ND
Styrene	0.042	ND
Xylenes	0.042	ND

Target  
Reporting SB-1  
Limit (13590)  
mg/Kg

Parameter

Total Petroleum  
Hydrocarbons  
(Fuel Oil) 0.050 <2.1

Extraction  
Factor (Normalized) 41.7

TABLE 4



Sample ID: SB-2  
Project #: 2279

Laboratory Sample #: 13592  
Laboratory Project #: 5-1455

Purgeable Halogenated and Non-Halogenated Compounds  
8010/8020 Target Compound List

<u>Compound Name</u>	<u>Reporting Limit</u> mg/Kg	<u>Reported Value</u> mg/Kg
Benzene	0.041	ND
Bromodichloromethane	0.041	ND
Bromoform	0.041	ND
Bromomethane	0.041	ND
Carbon Tetrachloride	0.041	ND
Chlorobenzene	0.041	ND
Chloroethane	0.041	ND
Chloroform	0.041	ND
Chloromethane	0.041	ND
Dibromochloromethane	0.041	ND
Dichlorobenzene, 1,2-	0.041	ND
Dichlorobenzene, 1,3-	0.041	ND
Dichlorobenzene, 1,4-	0.041	ND
Dichlorodifluoromethane	0.041	ND
Dichloroethane, 1,1-	0.041	ND
Dichloroethane, 1,2-	0.041	ND
Dichloroethene, 1,1-	0.041	ND
Dichloroethene, t-1,2-	0.041	ND
Dichloropropane, 1,2-	0.041	ND
Dichloropropene, c-1,3-	0.041	ND
Dichloropropene, t-1,3-	0.041	ND
Ethylbenzene	0.041	ND
Methylene Chloride	0.041	ND
Tetrachloroethane, 1,1,2,2-	0.041	ND
Tetrachloroethene	0.041	ND
Trichloroethane, 1,1,1-	0.041	ND
Trichloroethane, 1,1,2-	0.041	0.046
Trichloroethene	0.041	ND
Trichlorofluoromethane	0.041	ND
Toluene	0.041	ND
Vinyl Chloride	0.041	ND
Styrene	0.041	ND
Xylenes	0.041	ND

<u>Parameter</u>	<u>Target</u> <u>Reporting</u> <u>Limit</u> mg/Kg	<u>SB-2</u> <u>(13592)</u> <u>mg/Kg</u>
Total Petroleum Hydrocarbons (Fuel Oil)	0.050	<2.1
Extraction Factor (Normalized)		40.9

**TABLE 4-CONT.**



Sample ID: SB-3  
Project #: 2279

Laboratory Sample #: 13594  
Laboratory Project #: 5-1455

Purgeable Halogenated and Non-Halogenated Compounds  
8010/8020 Target Compound List

Compound Name	Reporting Limit mg/Kg	Reported Value mg/Kg
Benzene	0.035	ND
Bromodichloromethane	0.035	ND
Bromoform	0.035	ND
Bromomethane	0.035	ND
Carbon Tetrachloride	0.035	ND
Chlorobenzene	0.035	ND
Chloroethane	0.035	ND
Chloroform	0.035	ND
Chloromethane	0.035	ND
Dibromochloromethane	0.035	ND
Dichlorobenzene, 1,2-	0.035	ND
Dichlorobenzene, 1,3-	0.035	ND
Dichlorobenzene, 1,4-	0.035	ND
Dichlorodifluoromethane	0.035	ND
Dichloroethane, 1,1-	0.035	ND
Dichloroethane, 1,2-	0.035	ND
Dichloroethene, 1,1-	0.035	ND
Dichloroethene, t-1,2-	0.035	ND
Dichloropropane, 1,2-	0.035	ND
Dichloropropene, c-1,3-	0.035	ND
Dichloropropene, t-1,3-	0.035	ND
Ethylbenzene	0.035	ND
Methylene Chloride	0.035	ND
Tetrachloroethane, 1,1,2,2-	0.035	ND
Tetrachloroethene	0.035	0.091
Trichloroethane, 1,1,1-	0.035	0.100
Trichloroethane, 1,1,2-	0.035	ND
Trichloroethene	0.035	ND
Trichlorofluoromethane	0.035	ND
Toluene	0.035	ND
Vinyl Chloride	0.035	ND
Styrene	0.035	ND
Xylenes	0.035	ND

Parameter	Target Reporting Limit mg/Kg	SB-3 (13594) mg/Kg
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Total Petroleum Hydrocarbons (Fuel Oil) 0.050 37.

Extraction Factor (Normalized) 35.1

TABLE 4-CONT.





Sample ID: SB-4  
Project #: 2279

Laboratory Sample #: 13596  
Laboratory Project #: 5-1455

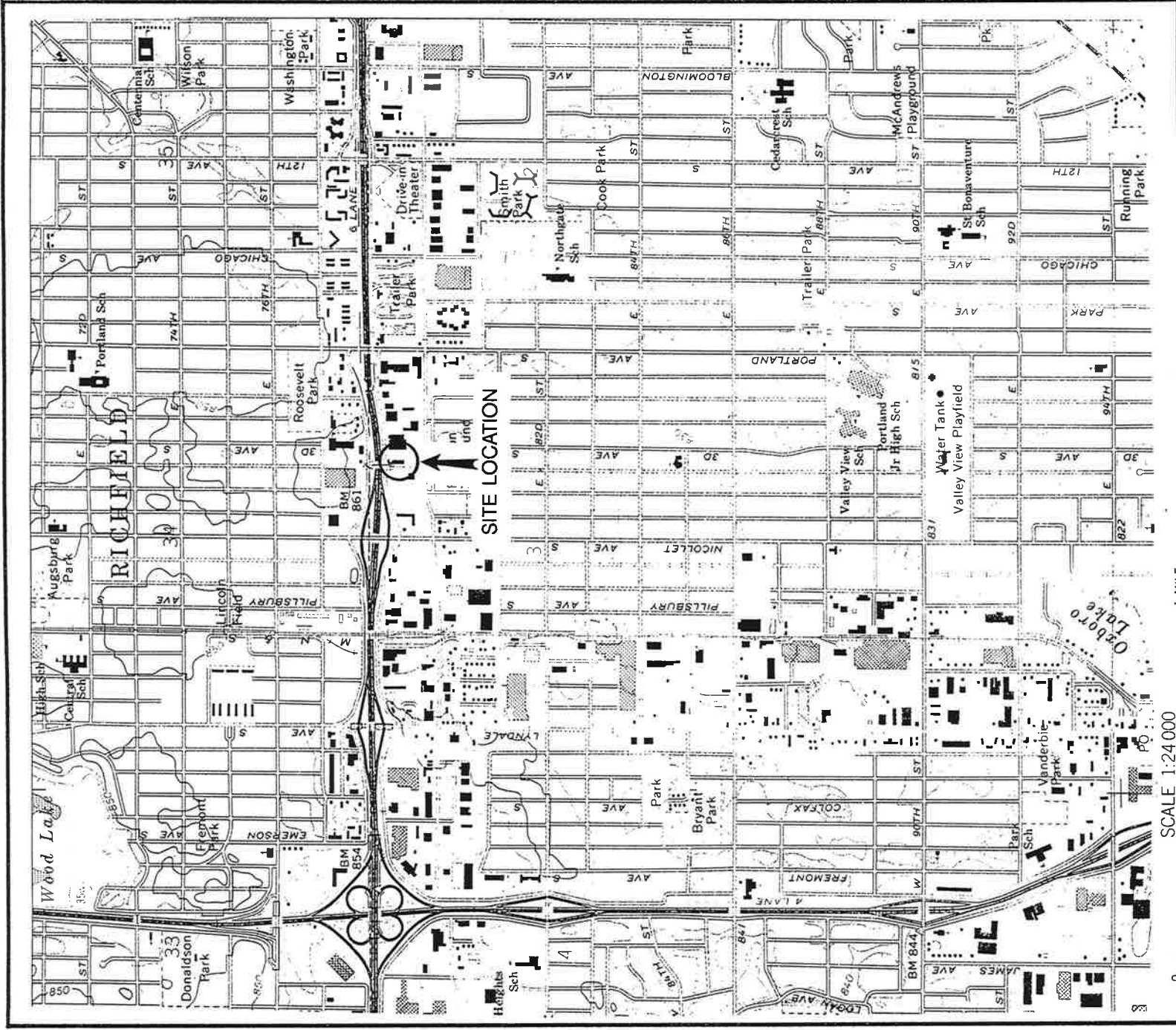
Purgeable Halogenated and Non-Halogenated Compounds  
8010/8020 Target Compound List

Compound Name	Reporting Limit mg/Kg	Reported Value mg/Kg
Benzene	0.042	ND
Bromodichloromethane	0.042	ND
Bromoform	0.042	ND
Bromomethane	0.042	ND
Carbon Tetrachloride	0.042	ND
Chlorobenzene	0.042	ND
Chloroethane	0.042	ND
Chloroform	0.042	ND
Chloromethane	0.042	ND
Dibromochloromethane	0.042	ND
Dichlorobenzene, 1,2-	0.042	ND
Dichlorobenzene, 1,3-	0.042	ND
Dichlorobenzene, 1,4-	0.042	ND
Dichlorodifluoromethane	0.042	ND
Dichloroethane, 1,1-	0.042	ND
Dichloroethane, 1,2-	0.042	ND
Dichloroethene, 1,1-	0.042	ND
Dichloroethene, t-1,2-	0.042	ND
Dichloropropane, 1,2-	0.042	ND
Dichloropropene, c-1,3-	0.042	ND
Dichloropropene, t-1,3-	0.042	ND
Ethylbenzene	0.042	ND
Methylene Chloride	0.042	ND
Tetrachloroethane, 1,1,2,2-	0.042	ND
Tetrachloroethene	0.042	ND
Trichloroethane, 1,1,1-	0.042	ND
Trichloroethane, 1,1,2-	0.042	ND
Trichloroethene	0.042	ND
Trichlorofluoromethane	0.042	ND
Toluene	0.042	ND
Vinyl Chloride	0.042	ND
Styrene	0.042	ND
Xylenes	0.042	ND

Parameter	Target Reporting Limit mg/Kg	SB-4 (13596) mg/Kg
Total Petroleum Hydrocarbons (Fuel Oil)	0.050	<2.1
Extraction Factor (Normalized)		41.7

TABLE 4-CONT.





SCALE 1:24 000  
 0 1 MILE  
 CONTOUR INTERVAL 10 FEET

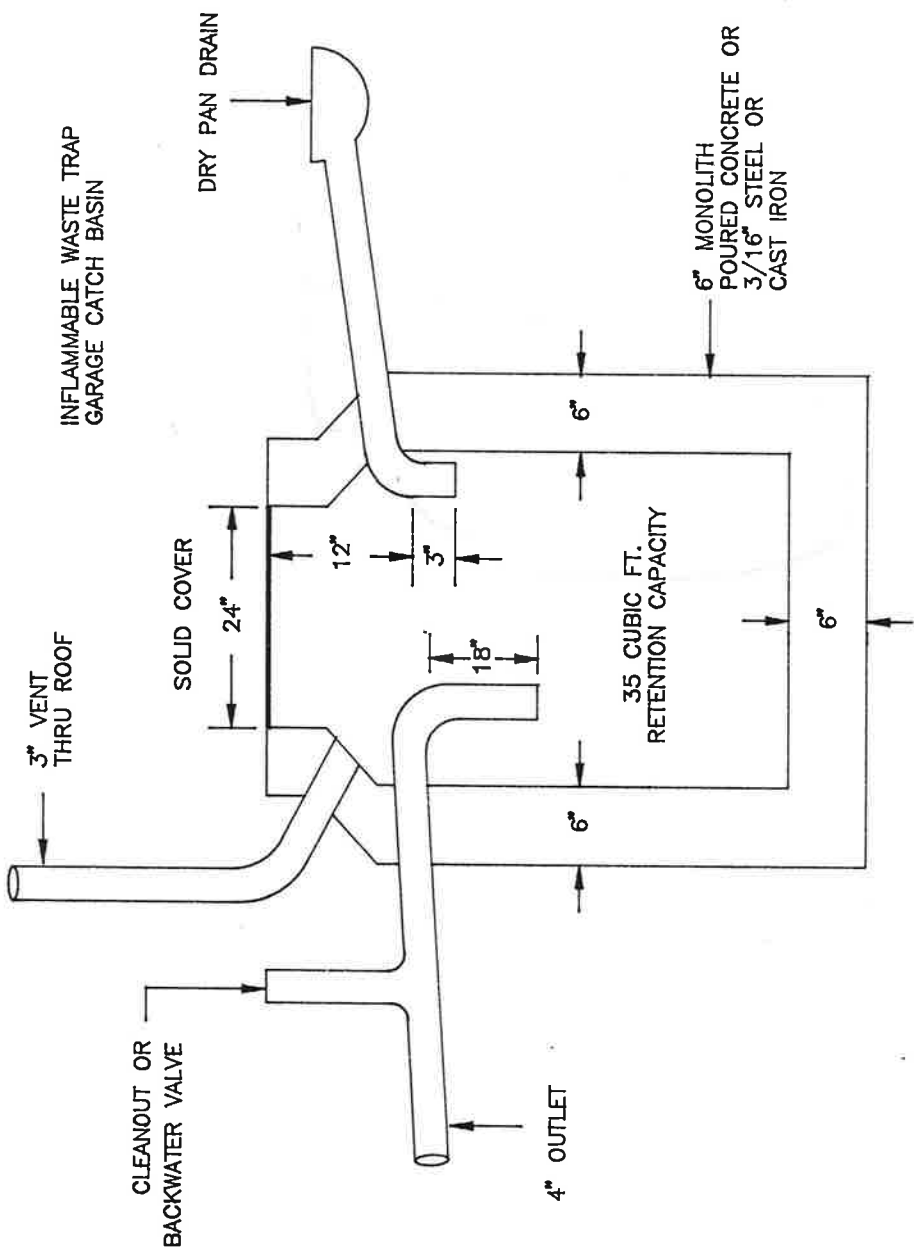


SOURCE:  
 USGS 7.5 MINUTE  
 TOPOGRAPHIC  
 BLOOMINGTON, MN.  
 QUADRANGLE

QUADRANGLE LOCATION

ENGR'G W.S.		DATE	 <b>BAY WEST Inc.</b> ENVIRONMENTAL SERVICES ST. PAUL, MN
DRAWN K.M.		8/13/91	
REV.			
PROJECT NAME		CHASE COMPANY - PTA	
TITLE		SITE LOCATION MAP	
DWG. NO.	2279-A-1	SCALE	FIGURE # 1





ENGR'G W.S.	DATE
DRAWN K.M.	8/13/91
REV.	

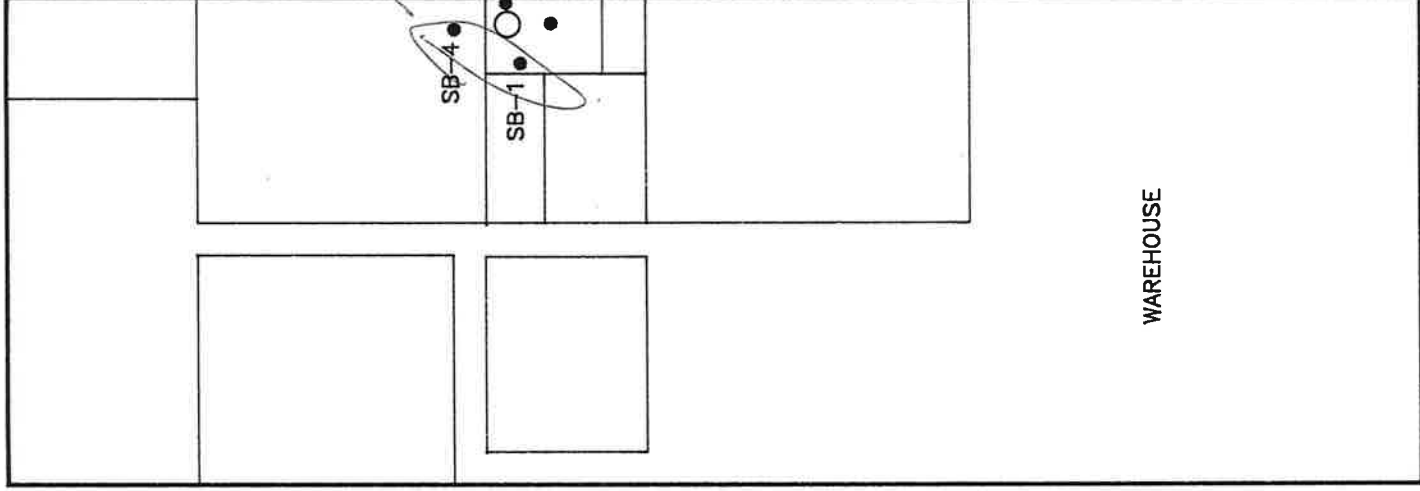


**BAY WEST Inc.**  
 ENVIRONMENTAL SERVICES  
 ST. PAUL, MN

PROJECT NAME CHASE COMPANY - PTA	
TITLE BELOW GRADE FLAMMABLE LIQUID HOLDING TANK	
DWG. NO. 2279-A2	SCALE NONE
FIGURE #2	



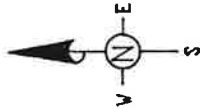
MAIN ENTRANCE



DELESARD  
TOOL CO.

WAREHOUSE

LOADING DOCKS



LEGEND:

- SOIL BORING LOCATION
- SUMP



SCALE IS APPROXIMATE

ENGR'G W.S. DATE

DRAWN K.M. 8/6/91

REV.

PROJECT NAME A.B. DICK

TITLE SITE MAP

DWG. NO. 2279-A1

SCALE 1"=30'

FIGURE # 3



**BAY WEST Inc.**  
 ENVIRONMENTAL SERVICES  
 ST. PAUL, MN.





**A. SOIL**

**CONCENTRATION**

ARSENIC	20 ppm
BARIUM	400 ppm
CADMIUM	3 ppm
CHROMIUM	100 ppm
COPPER	170 ppm
LEAD	100 ppm
MERCURY	100 ppm
NICKEL	1 ppm
PETROLEUM HYDROCARBONS	100 ppm
POLYCHLORINATED BIPHENYLS	5 ppm
POLYAROMATIC HYDROCARBONS - NON CARCINOGENIC - CARCINOGENIC	100 ppm 10 ppm
SILVER	5 ppm
SELENIUM	4 ppm
TOTAL CYANIDES	12 ppm
TOTAL VOLATILE ORGANICS	1 ppm
ZINC	350 ppm

**B. GROUND WATER**


**CONCENTRATION**

PETROLEUM HYDROCARBONS	1 ppm
TOTAL VOLATILE ORGANICS	10 ppb *
TOTAL BASE / NEUTRAL ORGANICS	50 ppb *
TOTAL ACID EXTRACTABLE ORGANICS	50 ppb *

OTHERS

SEE GROUND WATER QUALITY  
STANDARDS, N.J.A.C. 7:9-6.6

\* - LESSER CONCENTRATIONS FOR SPECIFIC CHEMICALS MAY BE  
UTILIZED BASED UPON 10\* CANCER RISK AND / OR TOXICOLOGIC FACTORS.

ENGR'S W.S.	DATE		<b>BAY WEST Inc.</b> INDUSTRIAL SERVICES 28 PLAZA, NY
DRAWN K.M.	6/5/90		
REV.			
PROJECT NAME		ACTION LEVELS USED BY THE NJ-DEP BUREAU OF INDUSTRIAL SITE EVALUATION	
TITLE		CHASE CO.	
DWG. NO.	1134-A5	SCALE	FIGURE # 4

