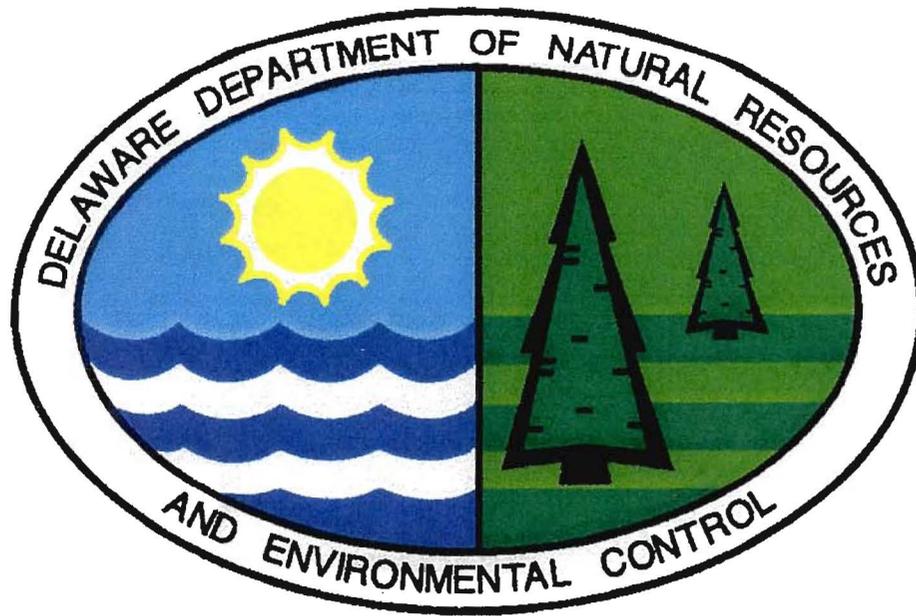


SECOND PROPOSED PLAN OF REMEDIAL ACTION

Jackson Pit
Lewes, Delaware

DE - 0149



March 2003

Delaware Department of Natural Resources & Environmental Control
Division of Air and Waste Management
Site Investigation and Restoration Branch

SCANNED
APR 09 2003

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1.0 INTRODUCTION

The Jackson Pit (site) is located southwest of the town of Lewes in Sussex County, Delaware (Figure 1). The site occupies 15.55 acres, and is accessible from Route 275, southwest of Lewes. The site is bordered by Route 276 to the northwest, and crop land and wooded area to the south. It includes a former borrow pit and various waste disposal areas. Originally, Mr. Mark Slaughter purchased only a 5.05-acre portion of the site. In February 2003, a final plan of remedial action (final plan) was issued for this parcel, operable unit 1 (OU 1). However, Mr. Slaughter purchased the remaining 10.50 acres of the property at a later date. Therefore, this second proposed plan will include the investigation findings on both OU 1 and the additional parcel OU 2. The site is now defined by DNREC as both parcels and DNREC will discuss risk and proposed remedial actions in terms of the site consisting of both OU 1 and OU 2.

The Department of Natural Resources and Environmental Control (DNREC or the Department) performed a facility evaluation (FE) on the site in November 1997. The purpose of the FE was to: 1) collect additional information from the site and review information from previous environmental investigations, 2) understand the nature and extent of any soil and/or groundwater contamination at the site, and 3) evaluate risks to public health, welfare and the environment associated with any identified contamination. Mr. Mark Slaughter contracted with the Environmental Solutions Group (ESG) in March 2002 to conduct additional groundwater testing. DNREC considers the FE and the additional groundwater testing on the site to be equivalent to a remedial investigation. Mr. Slaughter desires to obtain a Certification of Completion of Remedy (COCR) from DNREC upon completion of all required tasks.

This document is the Department's proposed plan or remedial action (proposed plan) for the site. It is based on the results of the previous investigations performed at the site. This proposed plan is issued under the provisions of the Hazardous Substance Cleanup Act (HSCA), 7 Del. C. Chapter 91 and the Regulations Governing Hazardous Substance Cleanup (Regulations). It presents the Department's assessment of the potential health and environmental risk posed by the site.

As described in Section 12 of the Regulations, DNREC will provide notice to the public and an opportunity for the public to comment on the proposed plan. At the comment period's conclusion, DNREC will review and consider all the comments received and issue a final plan. The final plan shall designate the selected remedy, if required, for the site. All prior investigations of the site, the proposed plan, and any comments received from the public, DNREC's responses to those comments, and the final plan will constitute the remedial decision record.

Section 2 presents a summary of the site description, site history and previous investigations of the site. Section 3 provides a description of the remedial investigation results. Section 4 presents a discussion of the remedial objectives. Section 5 presents the proposed plan of remedial action. Section 6 discusses public participation requirements.

2.0 SITE DESCRIPTION AND HISTORY

The site is located southwest of the Town of Lewes in Sussex County, Delaware and is accessible from Route 275 heading southeast from Five Points. The site occupies 15.55 acres of land and consists of two parcels, Sussex County tax parcel #3-34 6.00 504.07 and #3-34 6.00 504.03. It is bordered by Route 276 to the northwest and crop land and wooded area to the south (Figure 2). There is a borrow pit as well as waste disposal areas containing piles of wood debris, asphalt and concrete. The pit is approximately 30 feet deep and is described to have had a flat sand floor with 3 to 7 foot walls composed of wood, brush, bricks and cement debris.

The nearest water supply well is located approximately 400 feet to the southwest. Residential homes with domestic wells are located along Route 276, approximately 1,000 feet northwest of the landfill area. A public water supply well for a residential development is located approximately 1,500 feet southwest of the landfill area. The Town of Lewes operates five municipal wells located along Route 9, approximately one mile northeast of the site.

2.1 Site and Project History

Mr. Harland Jackson acquired a 21.54-acre lot during the early 1960s. He operated a garbage dump on the site for many years after it was used as a borrow pit. Dumping occurred from at least the 1970s until 1982. Specific areas of the site contain suspected buried municipal waste. Numerous debris fires occurred at the dumpsite during the late 1970s. DNREC's Solid and Hazardous Waste Branch granted Mr. Jackson approval to dispose of tree stumps, lumber and masonry materials on the site until 1993. During this operation, local residents witnessed sewage disposal trucks entering the landfill area. In recent years, the owners have maintained minimal security to restrict illegal dumpers. However, based on observations made during a recent site visit, only a limited amount of dumping has occurred.

In 2002, Mark Slaughter contacted DNREC, and hired Environmental Solutions Group, Inc. (ESG) to excavate test pits and to perform additional groundwater monitoring on the site. Subsequently, ESG submitted the results to DNREC. Mr. Slaughter intends to redevelop the property for townhouses.

3.0 INVESTIGATION RESULTS

DNREC conducted an extensive review of past investigations prepared for the property as discussed below.

3.1 Preliminary Assessment

In October 1986, a preliminary assessment (PA) was performed by the DNREC. No environmental samples were collected during the PA. Based on the results of the PA, no further action was recommended.

3.2 Site Investigation

In September 1988, NUS Corporation conducted a site inspection (SI) under contract from the U.S. Environmental Protection Agency (EPA). The SI report indicates that during the 1970s, only household garbage, wood, and brick debris was dumped at the site. Glass bottles, cans, plastics, and various household trash items were exposed in an area approximately 100 feet long by 25 feet wide. According to a DNREC representative, prior to the SI, approximately 15 to 18 feet of fill material was placed at the property. At the time, the property was leveled from sand and gravel disposal and grading that had occurred.

Only one soil sample (CK 249/MCJ 125) was taken on the site. The analytical results from the SI indicated that the results for the soil sample identified the presence of 1, 1-dichloroethane (0.006 milligrams per kilogram or mg/kg) and toluene (0.009 mg/kg), but at concentrations that are well below the current Uniform Risk Standards (URS) value for unrestricted use (i.e., residential use) of the property, of 780 mg/kg and 650 mg/kg, respectively.

3.3 Facility Evaluation

A facility evaluation (FE) was conducted by DNREC in November 1997. The FE work plan called for DNREC to perform the following tasks:

- Install shallow, groundwater monitoring wells and collect groundwater samples from the unconfined aquifer; and
- Excavate test pits of the waste disposal areas and collect soil/waste samples, including one background soil sample.

3.3.1 Soils

DNREC excavated fourteen test pits on both OU 1 and OU 2 and took soil samples for laboratory analysis (Figure 3). In test pit numbers 3, 7, and 11 (TP-3, TP-7, TP-11), iron (4,460 mg/kg, 6450 mg/kg, 2,660 mg/kg) exceeded the unrestricted URS value of 2,300 mg/kg, for subsurface soil in samples collected at depths of 3-10 feet below ground surface. Also in TP-7 and TP-11, there was an exceedence of the unrestricted URS value for benzo(a)pyrene (0.09 mg/kg) with results of 0.24 mg/kg and 0.37 mg/kg, respectively. There were no other exceedences found in the soil samples from the remaining test pits, including the seven test pits found on OU 2.

3.3.2 Groundwater

DNREC installed three monitoring wells on the site consisting of OU 1 and OU 2. DNREC collected one groundwater sample from each well as part of the FE. Aluminum (417 µg/L), and total chromium (14.3 µg/L), exceeded the URS value of 200 µg/L, and 11 µg/L, respectively, for groundwater in monitoring well number 1 (MW-1). Manganese exceeded the URS value of 50 µg/L for groundwater in both MW-1 and MW-3 with detected concentrations of 234 micrograms per liter or µg/L and 1060 µg/L, respectively. Trace levels of semi-volatile organic compounds were found to be present in MW-3 and trace levels of the pesticide, p,p – DDD were found to be

present in MW-2, but at concentrations well below their respective URS values for unrestricted use.

3.3.3 Summary

The results of the investigations indicated contaminants were detected on the site at levels exceeding the URS values for unrestricted land use. Specifically, in TP-3, TP-7 and TP-11, iron exceeded the values for subsurface soil in the soil samples collected at depths of 3-10 feet below ground surface. Also in TP-7 and TP-11, benzo(a)pyrene exceeded the URS value for subsurface soil in the soil samples collected at depths of 3-10 feet below ground surface. There were no other exceedences found the samples collected from the other test pits.

Total chromium and aluminum exceeded the URS value for groundwater in MW-1 and manganese exceeded the URS value for groundwater in both MW-1 and MW-3. Elevated concentrations of semi-volatile organic compounds and the pesticide, p, p – DDD were found, but in quantities that are well below their respective URS values for unrestricted use.

It is important to note that aluminum and manganese are naturally occurring elements in Delaware's groundwater and their URS values found in DNREC's remediation standards guidance documents are based on National Secondary Drinking Water Regulations (NSDWR). NSDWRs are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water, and do not pose a human health risk.

3.4 Additional Test Pit Evaluation

Four test pits were excavated in the vicinity of the former borrow pit, at depths ranging from 8 to 10 feet, and in approximately the same locations as TP-2, TP-3, TP-6, and TP-7 of the FE. As previously indicated, bricks, logs, concrete and pieces of trash were the types of debris encountered. No additional soil sampling was performed in this evaluation

3.5 Additional Groundwater Sampling

At the request of Mr. Slaughter, Environmental Solutions Group, Inc. (ESG) collected additional groundwater samples initially from MW-1 and MW-2 in March 2002. Prior to sampling, ESG consulted DNREC on the contaminants of concern in the groundwater found on this property. These included: chromium, pesticides and PCBs. Initial samples taken from MW-1 and MW-2 in March 2002, were analyzed by Lancaster Laboratories, Inc. of Lancaster, PA. The only contaminants detected in the groundwater samples were: total chromium and the pesticide, pip-DDD. An elevated level of total chromium was also detected in MW-1. Both groundwater wells were resampled to speciate the concentrations of trivalent and hexavalent chromium. The results from this round of sampling showed no evidence in either well of elevated levels of hexavalent or trivalent chromium. MW-2 was found to contain a detectable level of p,p-DDD. However, the concentration of the pesticide found was 0.036 µg/L, which is below the URS value for groundwater of 0.30 µg/L. PCBs were present in the samples at or below their detection limits. The results for chromium from the second round of sampling were used in DNREC's risk

analysis. A sample was collected from MW-3 on July 17, 2003. The sample was analyzed for metals. No metals were detected above the respective detection limits.

3.6 Risk Evaluation

Based on applying DNREC's Site Specific Risk Calculator, using the highest soil contaminant concentrations exceeding the corresponding URS value for unrestricted use, the soil on the site does not pose a risk to human health that would require a remedial action under the HSCA program. The calculated cancer risk was 4.23×10^{-6} , which is less than 1×10^{-5} , the accepted risk allowed by the Department's Regulations. The calculated non-cancer risk was 0.27, which is less than a Hazard Index of 1.0. Therefore, remedial action for soils is not necessary.

The Site Specific Risk Calculator was also used for an evaluation of the risk posed by the contaminants present in the groundwater in MW-1, MW-2, and MW-3. The results were based on the highest concentration of each contaminant found in either of the three wells and were shown to present a cancer risk of 5.40×10^{-5} , which is greater than the acceptable level of risk of 1×10^{-5} . The calculated non-carcinogenic risk posed was 0.22, which does not exceed the Hazard Index of 1.0. PCBs, which resulted in the exceedance of the 1×10^{-5} cancer risk, were not detected above their respective detection limits and were not considered a contaminant of concern in the risk evaluation.

DNREC has determined that marginal degradation of groundwater quality exists in the unconfined aquifer. This may be attributed to background or naturally occurring conditions but may also be associated with the breakdown of buried solid waste. Since solid waste is suspected to remain on-site until the site is redeveloped, there was detection of the pesticide, p, p -DDD in MW-1, and questions remain concerning the oxidation state of chromium in the groundwater, DNREC intends to restrict groundwater use in the area as a precautionary measure.

4.0 REMEDIAL ACTION OBJECTIVES

According to Section 8.4(1) of the Regulations, site-specific remedial action objectives (RAOs) must be established for all plans of remedial action. The Regulations provide that DNREC set objectives for land use, resource use, and cleanup levels that are protective of human health and the environment.

Qualitative objectives describe, in general terms, what the ultimate result of the remedial action, if necessary, should be. The following qualitative objective is determined to be appropriate for the site:

- Prevent human exposure to groundwater which may be contaminated due to the uncertainty associated with detections of chromium and p, p-DDD in monitoring wells.

This objective is consistent with the proposed use of the site for townhouses, Sussex County zoning policies, state regulations governing water supply, and worker health and safety.

Quantitative objectives define specific levels of remedial action to achieve protection of human health and the environment. Based on the above qualitative objectives, the quantitative objectives will be to ensure that future site users such as residents, construction workers, visitors, and trespassers do not come in contact with soils and groundwater that contain constituents which exceed a cumulative cancer risk of 1×10^{-5} .

5.0 PROPOSED PLAN OF REMEDIAL ACTION

Based on DNREC's evaluation of the site information and the above remedial action objectives, the recommended action for the site will include the following:

- The property owner shall place a deed restriction on the site, no longer than ninety days following DNREC's adoption of the final plan. The deed restriction will prohibit the installation of any water wells on, or groundwater usage at the site without prior written approval of DNREC, and will identify the site as located within a groundwater management zone (GMZ) which is an internal DNREC document that restricts groundwater withdrawals at the site; and
- DNREC recommends that the property owner remove any non-hazardous solid waste found on the property during regrading activities on the site. However, if any evidence of soil contamination and/or hazardous substances/wastes are identified by visual inspection, field screening, or environmental testing, during the site clearing and regrading, then the owner must notify DNREC pursuant to 7 Del. C. § 6028. If a release of a hazardous substance is found, further action pursuant to the regulations governing hazardous substance cleanup may be required.

6.0 PUBLIC PARTICIPATION

The Department actively solicits public comments or suggestions on the proposed plan of remedial action and welcomes opportunities to answer questions. Please direct written comments to:

Department of Natural Resources and Environmental Control
Site Investigation and Restoration Branch
391 Lukens Drive
New Castle, Delaware 19720
Attn: Lindsay J. Hall

The public comment period for this proposed plan begins on Monday, April 7, 2003 and ends at the close of business on Monday, April 28, 2003. If so requested, a public hearing will be held on the proposed plan. The meeting time and place will be announced if said hearing is requested.

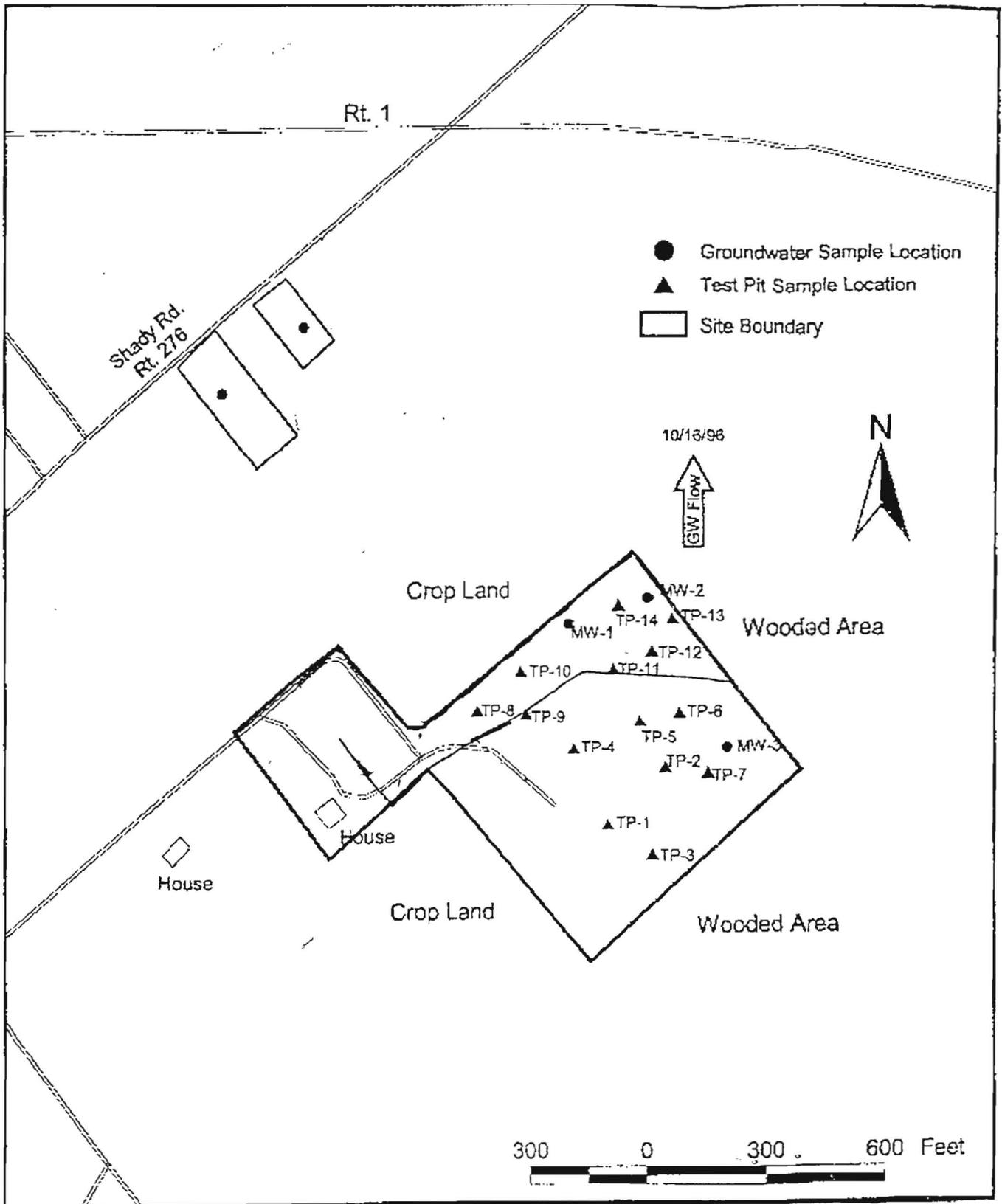


Figure 3 : Sample Location Map

Figure 1: SITE LOCATION

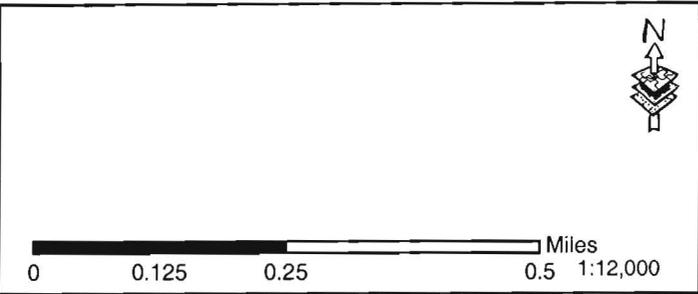
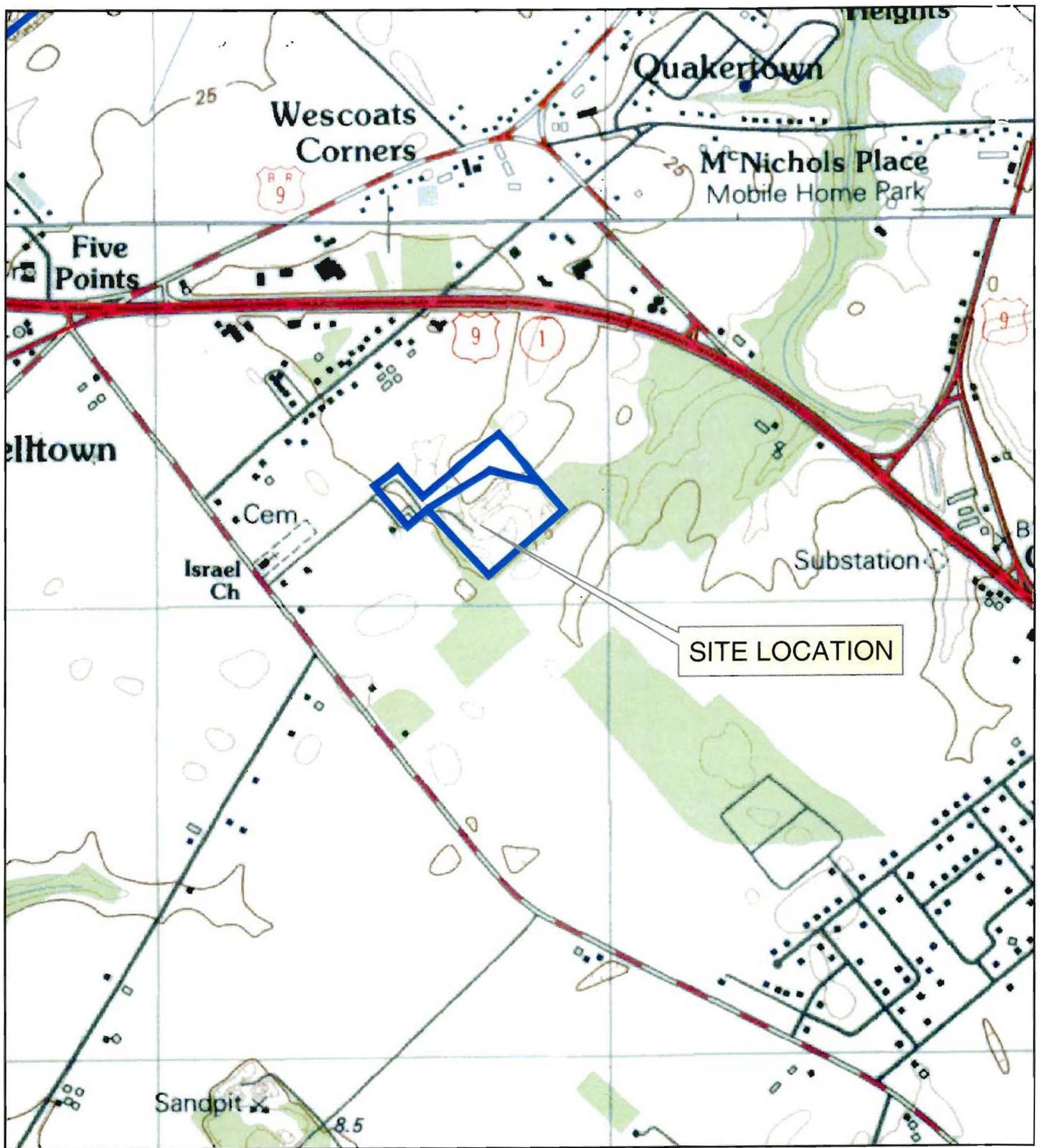


FIGURE 1
USGS 7.5 MINUTE TOPO
JACKSON PIT SITE

Figure 2: AERIAL PHOTOGRAPH

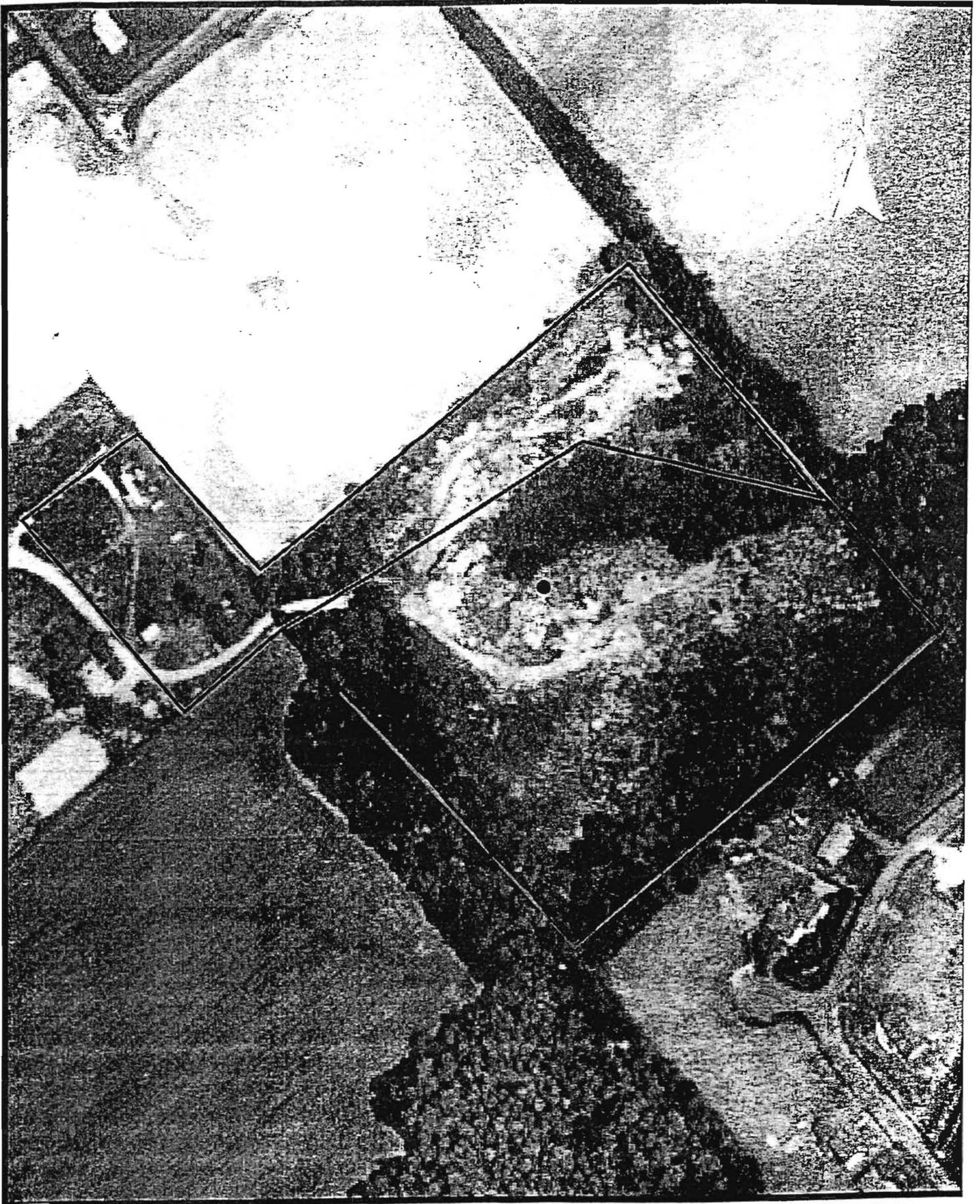


Figure 2 : JACKSON PIT

1 inch equals 187.50 feet



Figure 3: SAMPLE LOCATION MAP

John Blevins

John Blevins, Director
Division of Air and Waste Management

4/2/03

Date of Review of Proposed Plan

JACKSON PIT
Soil

(unrestricted use, subsurface soil, non-critical water resource area)

TABLE 1

Constituent	Sample Value (mg/kg)						URS Value (mg/kg)
	TP-3	TP-5	TP-7	TP-10	TP-11	TP-14	
Aluminum	5080	2360	3130	616	2750	1500	7800
Barium	ND	ND	53.3	ND	ND	ND	550
Calcium	ND	149000	2340	ND	4460	ND	
Chromium	5.8	4.2	3.9	ND	24.4	2.5	270
Copper	ND	16	6	ND	34	ND	310
Iron	6450	1940	4460	270	2660	2090	2300
Lead	4.2	15.4	38.1	ND	66.5	9	400
Manganese	108	68.2	ND	ND	65.1	20.1	160
Mercury	ND	0.13	ND	ND	0.1	ND	10
Potassium	2070	ND	ND	ND	ND	ND	
Zinc	9.6	55.1	68.4	ND	195	ND	2300

TABLE 2

Constituent	Sample Value (mg/kg)						URS Value (mg/kg)
	TP-3	TP-5	TP-7	TP-10	TP-11	TP-14	
Toluene	ND	0.28	ND	0.026	ND	ND	650

 denotes exceedence of URS value

JACKSON PIT
Soil

(unrestricted use, subsurface soil, non-critical water resource area)

TABLE 3-1

Constituent	Sample Value (mg/kg)						URS Value (mg/kg)
	TP-3	TP-5	TP-7	TP-10	TP-11	TP-14	
Diethylphthalate	ND	ND	0.085	0.1	0.17	ND	1000
4-Methylphenol	0.98	ND	ND	ND	ND	ND	39

TABLE 3-2

Constituent	Sample Value (mg/kg)						URS Value (mg/kg)
	TP-3	TP-5	TP-7	TP-10	TP-11	TP-14	
Phenanthrene	ND	ND	0.085	ND	0.58	0.14	1000
Carbazole	ND	ND	0.038	ND	ND	ND	
Fluoranthene	ND	ND	0.3	ND	0.18	ND	310
Pyrene	ND	ND	0.27	ND	0.24	ND	230
Benzo(a)anthracene	ND	ND	0.24	ND	0.21	ND	0.9
Chrysene	ND	ND	0.27	ND	0.34	ND	87
bis(2-Ethylhexyl)phthalate	ND	ND	0.036	ND	0.048	ND	46
Benzo(b)fluoranthene	ND	ND	0.27	ND	0.23	ND	0.9
Benzo(k)fluoranthene	ND	ND	0.23	ND	ND	ND	
Benzo(a)fluoranthene	ND	ND	ND	ND	0.12	ND	9
Benzo(a)pyrene	ND	ND	0.24	ND	0.37	ND	0.09
Indeno(1,2,3-cd)Pyrene	ND	ND	0.23	ND	0.18	ND	0.9
Dibenz(a,h)anthracene	ND	ND	0.084	ND	ND	ND	
Benzo(g,h,i)perylene	ND	ND	0.24	ND	0.63	ND	

 denotes exceedence of URS value

JACKSON PIT
Soil

(unrestricted use, subsurface soil, non-critical water resource area)

TABLE 3-3

Constituent	Sample Value (mg/kg)						URS Value (mg/kg)
	TP-3	TP-5	TP-7	TP-10	TP-11	TP-14	
Heptachlor	ND	ND	ND	ND	0.001	ND	0.1
Heptachlor epoxide	ND	ND	ND	ND	0.021	ND	0.07
Dieldrin	0.0017	0.0021	ND	ND	0.018	ND	0.04
4,4-DDE	0.0033	0.0042	0.03	ND	0.02	ND	2
4,4-DDD	0.0024	0.003	0.018	ND	0.013	ND	3
4,4-DDT	0.0089	0.01	0.081	ND	0.038	ND	2
alpha-Chlordane	0.0034	0.0043	0.0068	ND	0.045	ND	
gamma-Chlordane	ND	0.052	0.0066	ND	0.052	ND	

Groundwater

TABLE 5

Constituent	Sample Value (µg/L)						URS Value (µg/L)
	MW-1	MW-1 (Dissolved)	MW-2	MW-2 (Dissolved)	MW-3	MW-3 (Dissolved)	
Aluminum	417	304	ND	ND	ND	ND	200
Calcium	29000	30000	ND	ND	123000	115000	
Chromium	14.3	13.2	ND	ND	ND	ND	11
Iron	152		ND	ND	ND	ND	300
Magnesium	7300	7480	5990	6000	45000	41700	
Manganese	234	241	ND	ND	1060	968	50
Potassium	5600	5680	ND	ND	19800	17900	
Sodium	12000	12400	16600	17100	40100	37700	

denotes exceedence
of URS value

Command Buttons		DNREC SITE-SPECIFIC STANDARD CALCULATOR FOR MULTIPLE ANALYTES May, 1999 Version			Calculated Cancer Risk			Calculated Noncancer Risk		
Click to learn about this application		Site Concentrations Table			Totals By Category	0.00E+00	0.00E+00	Totals By Category	0.00	0.00
Click here to calculate risk					5.40E-05		0.22			
Click on this to filter results					Maximum In Each Category	0.00E+00	0.00E+00	Maximum In Each Category	0.00	0.00
Click to remove results filter			1.49E-05		0.21					
Contaminant Name	CAS Number	Ground Water Concentration ug/L	Soil Concentration (Restricted Use) mg/kg	Soil Concentration (Unrestricted Use) mg/kg	Ground Water Ingestion Cancer Risk	Soil-Related Cancer Risk (Restricted Use)	Soil-Related Cancer Risk (Unrestricted Use)	Ground Water Ingestion Noncancer Risk	Soil-Related Noncancer Risk (Restricted Use)	Soil-Related Noncancer Risk (Unrestricted Use)
METALS										
ALUMINUM	7429905	417						0.01		
ANTIMONY	7440360									
ANTIMONY TETROXIDE	1332816									
ARSENIC	7440382									
BARIUM	7440393									
BERYLLIUM	7440417									
CADMIUM-WATER	7440439									
**CHROMIUM III	16065831	0.015						0.00		
**CHROMIUM VI	18540299	0.005						0.00		
COBALT	7440484									
COPPER	7440508									
IRON	7439896									
LEAD					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
MANGANESE	7439965	1060						0.21		
MERCURY (INORGANIC)	7439976									
NICKEL	7440020									
SELENIUM	7782492									
SILVER	7440224									
THALLIUM	7440280									
TITANIUM	7440326									
TITANIUM DIOXIDE	13463677									
URANIUM (SOLUBLE SALTS)										
VANADIUM	7440622									
VANADIUM SULFATE	16785812									
ZINC	7440666									
CYANIDES										
CALCIUM CYANIDE	592018									
COPPER CYANIDE	544923									
CYANAZINE	21725462									
CYANIDE (FREE)	57125									

Contaminant Name	CAS Number	Ground Water Concentration ug/L	Soil Concentration (Restricted Use) mg/kg	Soil Concentration (Unrestricted Use) mg/kg	Ground Water Ingestion Cancer Risk	Soil-Related Cancer Risk (Restricted Use)	Soil-Related Cancer Risk (Unrestricted Use)	Ground Water Ingestion Noncancer Risk	Soil-Related Noncancer Risk (Restricted Use)	Soil-Related Noncancer Risk (Unrestricted Use)
CYANOGEN	460195									
CYANOGEN BROMIDE	506683									
CYANOGEN CHLORIDE	506774									
HYDROGEN CYANIDE	74908									
POTASSIUM CYANIDE	151508									
POTASSIUM SILVER CYANIDE	506616									
SILVER CYANIDE	506649									
SODIUM CYANIDE	143339									
ZINC CYANIDE	557211									
VOLATILE COMPOUNDS										
**1,3-DICHLOROENZENE	541731									
**ACETONE	67641									
**ACETONITRILE	75058									
**BROMOFORM	75252									
**CHLOROENZENE	108907									
**CHLOROMETHANE	74873									
**DIMETHYLAMINE	124403									
1,1,1-TRICHLOROETHANE	71556									
1,1,2,2-TETRACHLOROETHANE	79345									
1,1,2-TRICHLOROETHANE	79005									
1,1-DICHLOROETHANE	75343									
1,2-DIBROMO-3-CHLOROPROPANE	96128									
1,2-DIBROMOETHANE	106934									
1,2-DICHLOROENZENE	95501									
1,2-DICHLOROETHANE	107062									
1,2-DICHLOROPROPANE	78875									
1,3-DICHLOROPROPENE	542756									
1,4-DICHLOROENZENE	106467									
2-HEXANONE	591786									
4-CHLOROANILINE	106478									
BENZENE	71432									
BIS(2-CHLOROISOPROPYL)ETHER	108601									
BROMODICHLOROMETHANE	75274									
BROMOMETHANE	74839									
CARBON DISULFIDE	75150									
CARBON TETRACHLORIDE	56235									
CHLOROETHANE	75003									
CHLOROFORM	67663									
CIS-1,2-DICHLOROETHENE	156592									
ETHYLBENZENE	100414									
METHYLENE CHLORIDE	75092									
N-PROPYLBENZENE										
STYRENE	100425									
TERT-BUTYLBENZENE	98066									

Contaminant Name	CAS Number	Ground Water Concentration ug/L	Soil Concentration (Restricted Use) mg/kg	Soil Concentration (Unrestricted Use) mg/kg	Ground Water Ingestion Cancer Risk	Soil-Related Cancer Risk (Restricted Use)	Soil-Related Cancer Risk (Unrestricted Use)	Ground Water Ingestion Noncancer Risk	Soil-Related Noncancer Risk (Restricted Use)	Soil-Related Noncancer Risk (Unrestricted Use)
TETRACHLOROETHENE	127184									
TOLUENE	108883									
TRANS-1,2-DICHLOROETHENE	156605									
TRICHLOROETHENE	79016									
VINYL CHLORIDE	75014									
XYLENES	1330207									
M-XYLENE	108383									
O-XYLENE	95476									
P-XYLENE	106423									
POLYNUCLEAR AROMATIC HYDROCARBONS										
**ACENAPHTHENE	83329									
**ANTHRACENE	120127									
**FLUORENE	86737									
**NAPHTHALENE	91203									
Phenanthrene					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
**PYRENE	129000									
2-METHYLNAPHTHALENE	91576									
BENZ[A]ANTHRACENE	56553									
BENZO[A]PYRENE	50328									
BENZO[B]FLUORANTHENE	205992									
BENZO[K]FLUORANTHENE	207089									
CHRYSENE	218019									
DIBENZ[A,H]ANTHRACENE	53703									
FLUORANTHENE	206440									
INDENO[1,2,3-C,D]PYRENE	193395									
POLYCHLORINATED BIPHENYLS										
AROCLOR-1016	12674112	0.26			2.72E-07					
AROCLOR-1221	11104282	0.5			1.49E-05					
AROCLOR-1232	11141165	0.26			7.76E-06					
AROCLOR-1242	53469219	0.26			7.76E-06					
AROCLOR-1248	12672296	0.26			7.76E-06					
AROCLOR-1254	11097691	0.26			7.76E-06					
AROCLOR-1260	11096825	0.26			7.76E-06					
PESTICIDES										
na	na									
**HEPTACHLOR	76448									
**HEPTACHLOR EPOXIDE	1024573									
**TOXAPHENE	8001352									
ALDRIN	309002									
DDD	72548									
DDE	72559									
DDT	50293									
DIELDRIN	60571									
ENDOSULFAN	115297									
ENDRIN	72208									

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METHOXYCHLOR	72435									
SEMI-VOLATILE COMPOUNDS	na									
**1,2,4,5-TETRACHLOROBENZENE	95943									
**1,2,4-TRIBROMOBENZENE	615543									
**1,4-DIBROMOBENZENE	106376									
**2,4-D	94757									
**2-CHLOROPHENOL	95578									
**ACETALDEHYDE	75070									
**ACRYLONITRILE	107131									
**ANILINE	62533									
**BIS(2-CHLOROETHYL)ETHER	111444									
**BROMOPHOS	2104963									
**CHLORAL	75876									
**CROTONALDEHYDE	123739									
**DINOSEB	88857									
**DISULFOTON	298044									
**EPICHLOROHYDRIN	106898									
**ETHYLENE OXIDE	75218									
**HEXACHLOROBENZENE	118741									
**HEXACHLOROBUTADIENE	87683									
**HEXACHLOROCYCLOPENTADIENE	77474									
**HEXACHLOROETHANE	67721									
**METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108101									
**MIREX	2385855									
**MONOCHLORAMINE	10599903									
**N-NITROSO-DI-N-BUTYLAMINE	924163									
**P,A,A,A-TETRACHLOROTOLUENE	5216251									
**PENTACHLOROBENZENE	608935									
**PENTACHLORONITROBENZENE	82688									
**RONNEL	299843									
**TETRAETHYLLEAD	78002									
**TETRAHYDROFURAN	109999									
1,1,1,2-TETRACHLOROETHANE	630206									
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76131									
1,1,2-TRICHLOROPROPANE	598776									
1,1-DICHLOROETHENE	75354									
1,1-DIMETHYLHYDRAZINE	57147									
1,2,3-TRICHLOROPROPANE	96184									
1,2,3-TRICHLOROPROPENE	96195									
1,2,4-TRICHLOROBENZENE	120821									
1,2,4-TRIMETHYLBENZENE	95636									
1,2-DIMETHYLHYDRAZINE	540738									
1,2-DINITROBENZENE	528290									

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1,2-DIPHENYLHYDRAZINE	122667									
1,3,5-TRIMETHYLBENZENE	108678									
1,3,5-TRINITROBENZENE	99354									
1,3-DINITROBENZENE	99650									
1,4-DINITROBENZENE	100254									
1,4-DIOXANE	123911									
1,4-DITHIANE	505293									
1-BUTANOL	71363									
1-CHLOROBUTANE	109693									
2-(2,4,5-TRICHLOROPHENOXY)PROPIONIC ACID	93721									
2-(2-METHYL-4-CHLOROPHENOXY)PROPIONIC ACID	93652									
2,3,4,6-TETRACHLOROPHENOL	58902									
2,3,7,8-TETRACHLORODIBENZODIOXIN	1746016									
2,3-DICHLOROPROPANOL	616239									
2,4,5-T	93765									
2,4,5-TRICHLOROPHENOL	95954									
2,4,6-TRICHLOROANILINE	634935									
2,4,6-TRICHLOROPHENOL	88062									
2,4,6-TRINITROTOLUENE	118967									
2,4-DICHLOROPHENOL	120832									
2,4-DIMETHYLANILINE	95681									
2,4-DIMETHYLANILINE HYDROCHLORIDE	21436964									
2,4-DIMETHYLPHENOL	105679									
2,4-DINITROPHENOL	51285									
2,4-DINITROTOLUENE	121142									
2,6-DIMETHYLPHENOL	576261									
2,6-DINITROTOLUENE	606202									
2-CHLORO-1,3-BUTADIENE	126998									
2-ETHOXYETHANOL	110805									
2-METHYL-4-CHLOROPHENOXYACETIC ACID (MCP)	94746									
2-METHYL-5-NITROANILINE	99558									
2-METHYLANILINE	95534									
2-METHYLPHENOL	95487									
2-NITROANILINE	88744									
2-PHENYLPHENOL	90437									
3,3'-DICHLOROBENZIDINE	91941									
3,3'-DIMETHOXYBENZIDINE	119904									
3,3'-DIMETHYLBENZIDINE	119937									
3,4-DIMETHYLPHENOL	95658									
3-METHYLPHENOL	108394									
4-(2,4-DICHLOROPHENOXY)BUTYRIC ACID	94826									
4-(2-METHYL-4-CHLOROPHENOXY) BUTYRIC ACID	94815									
4,4'-METHYLENE BIS(2-CHLOROANILINE)	101144									
4,4'-METHYLENE BIS(N,N'-DIMETHYLANILINE)	101611									

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4,6-DINITRO-2-METHYLPHENOL	534521									
4,6-DINITRO-O-CYCLOHEXYL PHENOL	131895									
4-AMINOPYRIDINE	504245									
4-CHLORO-2-METHYLANILINE	95692									
4-METHYLPHENOL	106445									
4-NITROPHENOL	100027									
ACETOCHLOR	34256821									
ACETOPHENONE	98862									
ACROLEIN	107028									
ACRYLAMIDE	79061									
ALACHLOR	15972608									
ALAR	1596845									
ALDICARB	116063									
ALDICARB SULFONE	1646884									
ALPHA-HCH	319846									
ALPHA-METHYLSTYRENE	98839									
AMINODINITROTOLUENES										
ANTIMONY PENTOXIDE	1314609									
ANTIMONY TRIOXIDE	1309644									
ASSURE	76578148									
ATRAZINE	1912249									
AZOBENZENE	103333									
BAYGON	114261									
BA YTHROID	68359375									
BENTAZON	25057890									
BENZALDEHYDE	100527									
BENZENETHIOL	108985									
BENZIDINE	92875									
BENZOIC ACID	65850									
BENZYL ALCOHOL	100516									
BENZYL CHLORIDE	100447									
BETA-CHLORONAPHTHALENE	91587									
BETA-HCH	319857									
BIPHENYL	92524									
BIS(2-ETHYLHEXYL)PHTHALATE	117817									
BIS(CHLOROMETHYL)ETHER	542881									
BORON	7440428									
BUTYLATE	2008415									
BUTYLBENZYLPHTHALATE	85687									
CAPROLACTAM	105602									
CARBARYL	63252									
CARBAZOLE	86748									
CARBOSULFAN	55285148									
CHLORANIL	118752									

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FLUORINE	7782414									
FOMESAFEN	72178020									
FONOFOS	944229									
FORMALDEHYDE	50000									
FORMIC ACID	64186									
FURAN	110009									
FURAZOLIDONE	67458									
FURFURAL	98011									
GAMMA-HCH (LINDANE)	58899									
GLYCIDALDEHYDE	765344									
GLYPHOSATE	1071836									
HEXABROMOBENZENE	87821									
HEXACHLORODIBENZODIOXIN MIX	19408743									
HEXACHLOROPHENE	70304									
HEXANE	110543									
HEXAZINONE	51235042									
HMX	2691410									
HYDRAZINE	302012									
HYDROGEN SULFIDE	7783064									
HYDROQUINONE	123319									
ISOBUTANOL	78831									
ISOPHORONE	78591									
ISOPROPALIN	33820530									
ISOPROPYL METHYL PHOSPHONIC ACID	1832548									
LITHIUM	7439932									
MALATHION	121755									
MALEIC ANHYDRIDE	108316									
MEPHOSPOLAN	950107									
MEPIQUAT CHLORIDE	24307264									
MERCURIC CHLORIDE	7487947									
METHACRYLONITRILE	126987									
METHANOL	67561									
METHIDATHION	950378									
METHYL ACETATE	79209									
METHYL ACRYLATE	96333									
METHYL ETHYL KETONE (2-BUTANONE)	78933									
METHYL HYDRAZINE	60344									
METHYL METHACRYLATE	80626									
METHYL PARATHION	298000									
METHYL TERT-BUTYL ETHER	1634044									
METHYLENE BROMIDE	74953									
METHYLMERCURY	22967926									
METHYLSTYRENE MIX	25013154									
METOLACHLOR (DUAL)	51218452									

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M-NITROTOLUENE	99081									
MOLYBDENUM	7439987									
M-PHENYLENEDIAMINE	108452									
N,N-DIMETHYLANILINE	121697									
NALED	300765									
N-BUTYLBENZENE	104518									
NITRATE	14797558									
NITRIC OXIDE	10102439									
NITRITE	14797650									
NITROBENZENE	98953									
NITROFURANTOIN	67209									
NITROFUZZONE	59870									
NITROGEN DIOXIDE	10102440									
NITROGLYCERIN	55630									
N-NITROSODIETHANOLAMINE	1116547									
N-NITROSODIETHYLAMINE	55185									
N-NITROSODIMETHYLAMINE	62759									
N-NITROSODIPHENYLAMINE	86306									
N-NITROSODIPROPYLAMINE	621647									
N-NITroso-N-ETHYLUREA	759739									
N-NITroso-N-METHYLETHYLAMINE	10595956									
N-NITROSOPYRROLIDINE	930552									
NUSTAR	85509199									
O-CHLORONITROBENZENE	88733									
O-CHLOROTOLUENE	95498									
O-NITROTOLUENE	88722									
O-PHENYLENEDIAMINE	95545									
ORYZALIN	19044883									
OXADIAZON	19666309									
OXAMYL	23135220									
OXYFLUORFEN	42874033									
PARAQUAT DICHLORIDE	1910425									
PARATHION	56382									
P-CHLOROBENZOIC ACID	74113									
P-CHLORONITROBENZENE	100005									
PENTACHLOROPHENOL	87865									
PERMETHRIN	52645531									
PHENOL	108952									
PHOSPHINE	7803512									
PHOSPHORUS (WHITE)	7723140									
PHTHALIC ANHYDRIDE	85449									
P-NITROTOLUENE	99990									
POLYBROMINATED BIPHENYLS										
POLYCHLORINATED BIPHENYLS	1336363									

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POLYCHLORINATED TERPHENYLS	61788338									
POLYNUCLEAR AROMATIC HYDROCARBONS:										
P-PHENYLENEDIAMINE	106503									
P-PHTHALIC ACID	100210									
Picloram	1918021				No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
PROMETON	1610180									
PROMETRYN	7287196									
PROPACHLOR	1918167									
PROPANIL	709988									
PROPARGITE	2312358									
PROPYLENE GLYCOL	57556									
PROPYLENE GLYCOL, MONOETHYL ETHER	52125538									
PROPYLENE GLYCOL, MONOMETHYL ETHER	107982									
P-TOLUIDINE	106490									
PURSUIT	81335775									
PYRIDINE	110861									
QUINOLINE	91225									
RDX	121824									
RESMETHRIN	10453868									
ROTENONE	83794									
SEC-BUTYLBENZENE	135988									
SELENIOS ACID	7783008									
SIMAZINE	122349									
SODIUM AZIDE	26628228									
SODIUM DIETHYLDITHIOCARBAMATE	148185									
STRONTIUM, STABLE	7440246									
STRYCHNINE	57249									
TECHNICAL HCH	608731									
TETRYL	479458									
THALLIC OXIDE	1314325									
THALLIUM ACETATE	563688									
THALLIUM CARBONATE	6533739									
THALLIUM CHLORIDE	7791120									
THALLIUM NITRATE	10102451									
THALLIUM SULFATE (2:1)	7446186									
THIOBENCARB	28249776									
THIOCYANATE										
TIN	7440315									
TOLUENE-2,4-DIAMINE	95807									
TOLUENE-2,5-DIAMINE	95705									
TOLUENE-2,6-DIAMINE	823405									
TOTAL 1,2-DICHLOROETHENE	540590									
TRIBUTYL TIN OXIDE	56359									
TRICHLOROFLUOROMETHANE	75694									

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TRIMETHYL PHOSPHATE	512561									
VANADIUM PENTOXIDE	1314621									
VINCLOZOLIN	50471448									
VINYL ACETATE	108054									
WARFARIN	81812									
ZINC PHOSPHIDE	1314847									
ZINEB	12122677									
Petroleum Hydrocarbons										
C5 through C8 Aliphatic Hydrocarbons					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
C9 through C12 Aliphatic Hydrocarbons					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
C9 through C18 Aliphatic Hydrocarbons					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
C19 through C36 Aliphatic Hydrocarbons					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
C9 through C10 Aromatic Hydrocarbons					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
C11 through C22 Aromatic Hydrocarbons					No Risk Calculated for this Analyte			No Risk Calculated for this Analyte		
** = denotes a change since the original February 1998 version										