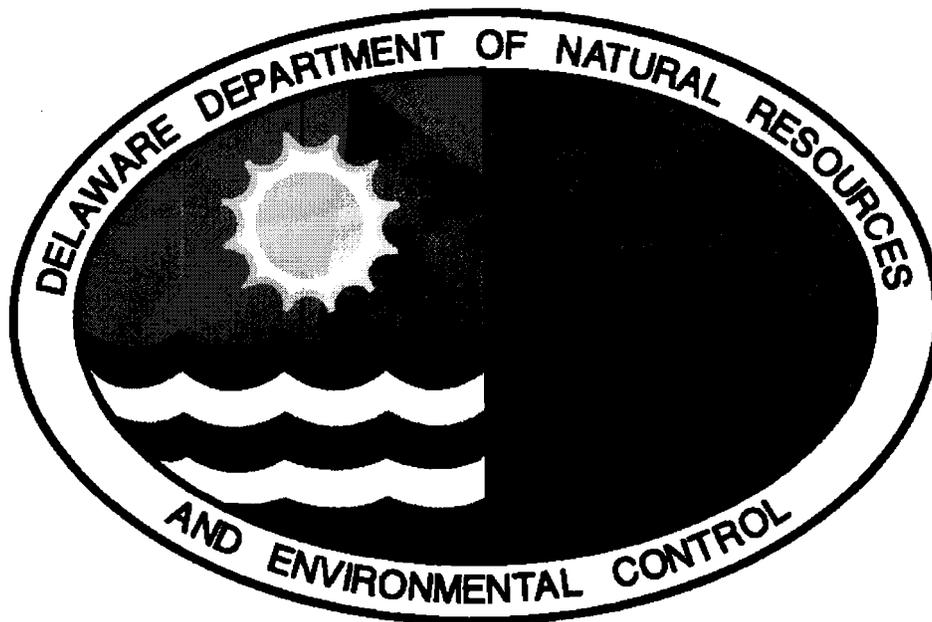


**FINAL PLAN OF REMEDIAL ACTION
FOR THE
GLASGOW FARMS SITE
GLASGOW, DELAWARE**



February, 1999

DNREC Project DE-1122

**Prepared by:
Delaware Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Site Investigation and Restoration Branch**

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I INTRODUCTION

The Glasgow Farms Site (the Site) is located on an area bordered by Route 896, Route 40 and Route 72 in Glasgow, Delaware. The Site is approximately 354± acres, and consists of several land parcels that are scheduled for light industrial and parkland development. The majority of the Site is undeveloped, consisting of wooded, and open, agricultural land.

In 1989 a finding of volatile organic compounds (VOCs) in an on-site water supply well, at the DuPont Glasgow facility, triggered an on-going United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) Corrective Action Order at the Site. Since 1989, the E.I. duPont De Nemours Corporation (DuPont) has been remediating the groundwater in the near vicinity of DuPont Well #4 by means of an air stripping tower under the directive of the USEPA.

In 1994, DuPont “sold” the 354± acres to Glasgow Farms L.L.C. According to the terms of the “sale agreement” DuPont irrevocably appointed Glasgow Farms as its true and lawful attorney-in-fact to grant, sell, convey, or contract for sale and conveyance the DuPont property. The Glasgow Farms L.L.C. now is considering selling the 354± acres to the State of Delaware, Division of Parks & Recreation and the W.L. Gore Company.

As a function of the property transfer, Glasgow Farms L.L.C., the State of Delaware, Division of Parks & Recreation and the W.L. Gore Company decided to enter into the DNREC Voluntary Cleanup Program (“VCP”). Through the VCP agreement, parties agreed to further characterize the potential risks posed to public health and the environment. The State’s consultant, Tetra-Tech, Inc. was contracted to conduct the required tasks (performance of a Site Sampling Investigation (“SSI”).

The purposes of the SSI were: 1) to understand the nature and extent of contamination to the soil, groundwater, sediment, or surface water contamination at the site, 2) to evaluate any risks that may be posed to the public and environment associated with any identified contamination, and 3) to provide recommendations to the Department for any remedial action, if required by DNREC. The owner and potential purchasers of the site desire to obtain a Certificate of Completion of Remedy from DNREC upon completion of all required tasks.

This document is the Department’s Final Plan of Remedial Action for the Site. It is based on the results of the previous investigations performed at the Site, and presents to the public the Department’s final selection of any remedial activities to occur at the Glasgow Farms site, Glasgow, Delaware . This Final Plan is issued under the provisions of the Delaware Hazardous Substance Cleanup Act (“HSCA”), 7 Del. C., Chapter 91 and the Regulations Governing Hazardous Substance Cleanup (“Regulations”).

The Department provided public notice and opportunity to comment on the Proposed Plan in accordance with HSCA and Section 12 of the Regulations. At the conclusion of the comment period, the Department issues this Final Plan of Remedial Action (“Final Plan”) which designates the selected procedures and stipulations concerning current and future activities. The Proposed Plan, the comments received from the public, the Department’s responses to the

comments, the Final Plan, and all of the documents which form the basis for the Proposed and Final Plans will constitute the remedial decision record required for issuing the Final Plan.

Section II provides a site description for the Glasgow Farms Site. Section III provides a description of the investigation results. Section IV presents the proposed plan of remedial action. Section V discusses public participation requirements and Section VI presents the Director's declaration.

II SITE DESCRIPTION AND HISTORY

The Glasgow Farms Site covers approximately 354± acres and is located in Pencader Hundred, Glasgow, Delaware. A total of six (6) parcels comprise the Glasgow Farms Site (see Figure 1). Parcel E encompasses approximately half of Sunset Lake. It is understood that parcels A, C, and E are planned to be sold to the State of Delaware for parklands, while Parcels B, D, and F will be used for future industrial uses by the W.L. Gore Company. Surrounding land uses include: lands owned by the E.I. DuPont de Nemours & Co. to the west, private and corporately owned wooded/open land and portions of Sunset Lake to the north, east, and south. At the present time the Site is comprised of primarily wooded land and agricultural land.

III INVESTIGATION RESULTS

In 1989, DuPont detected VOCs in an on-site water supply well number 4 (DuPont Glasgow Well 4). An investigation determined that a low concentration VOC plume existed within the Columbia Formation in the area proximate to a former Borrow Pit. In 1990, DuPont designed and installed a groundwater recovery and treatment system to capture and remove VOCs from DuPont Glasgow Well 4 water, to contain TCE-affected groundwater, and to prevent the migration of contaminants toward Newark Well 17. In 1991, DuPont initiated the groundwater monitoring program consisting of collection and analysis of groundwater samples and water-level measurements from wells located within the Borrow Pit area.

Ten years of analytical data have indicated that the total VOC concentrations in the Columbia aquifer have decreased significantly. The most recent analytical data (December 1998 / January 1999) and groundwater flow patterns indicate that VOCs are below detection limits at all wells and that groundwater continues to migrate toward Glasgow Well 4. Additionally, contaminant levels in Glasgow Well 4 have stabilized at or below the EPA Maximum Contaminant Levels (MCLs) since 1994, and are currently below detection limits.

DuPont has previously "sold" certain parcels of land at the Glasgow Site, lying between Route 896, Route 40, and Route 72, including the area known as the Borrow Pit which overlies the remediated groundwater plume. DuPont has acknowledged to the "Buyer" (Glasgow Farms L.L.C.) that DuPont has sole responsibility for compliance with the RCRA Corrective Action at the site, and following compliance will properly close and abandon all monitoring wells on the subject property.

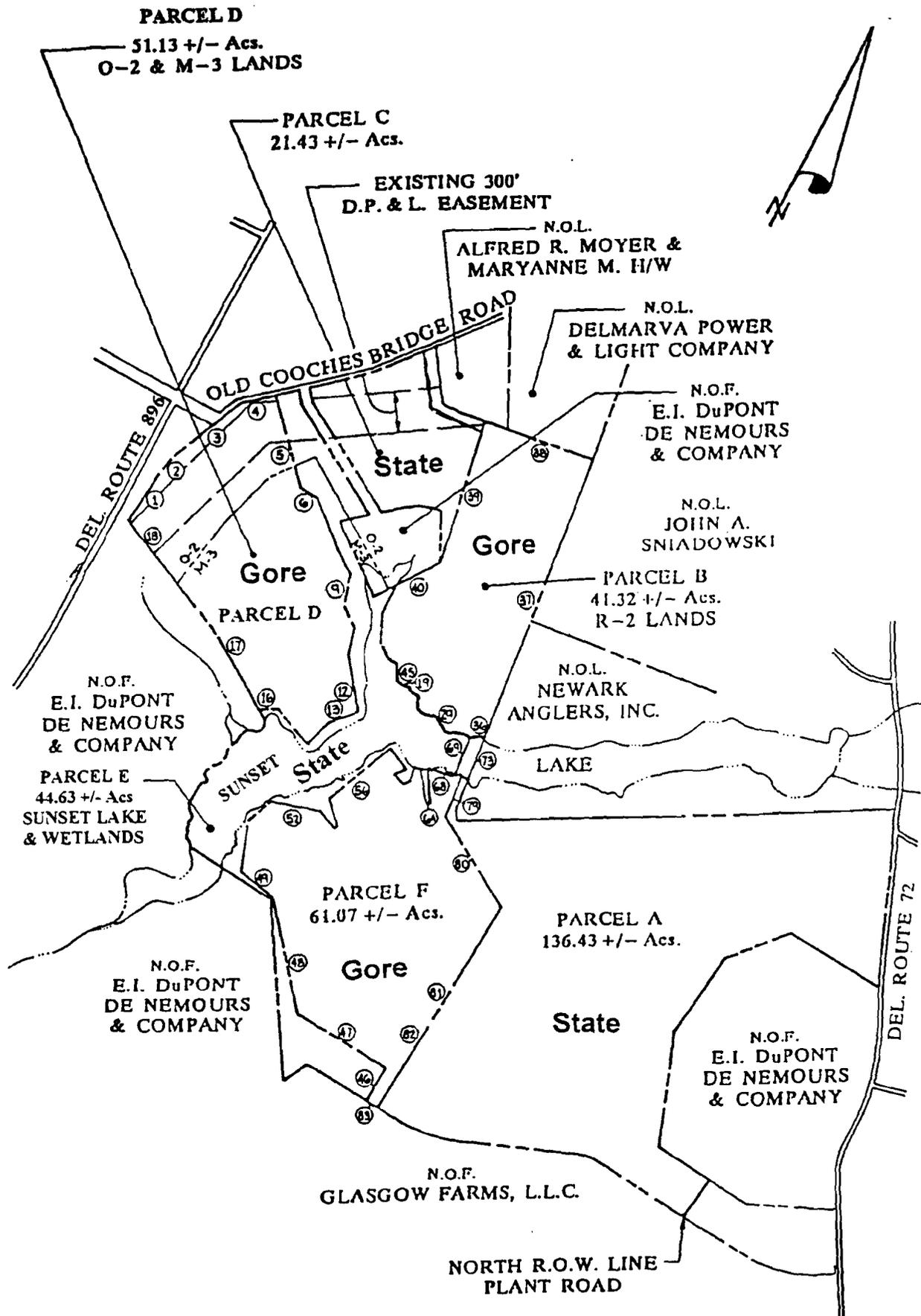


Figure 1

In June 1998, Glasgow Farms L.L.C., W.L. Gore, and the State Division of Parks & Recreation entered into a Voluntary Cleanup Program (“VCP”) agreement for a Sampling Site Investigation (“SSI”) on a portion of property owned by Glasgow Farms L.L.C. in Pencader Hundred, Newark, Delaware. The SSI was completed in December 1998 by the state’s consultant, Tetra-Tech, Inc., and was conducted in accordance with the SSI workplan previously approved by DNREC-SIRB. The objective of the SSI was to characterize the quality of the surface soils, the sub-surface soils, shallow groundwater, as well as the surface water and sediment in drainage’s to and shallow depositional areas of Sunset Lake.

A total of 144 soil samples (direct push and test pits), 35 direct push groundwater samples, 8 surface water samples, and 10 sediment samples were collected along with Quality Assurance/Quality Control (QA/QC) duplicates and blanks during the December 1998 field sampling activity (see Figures 2, 3 and 4).

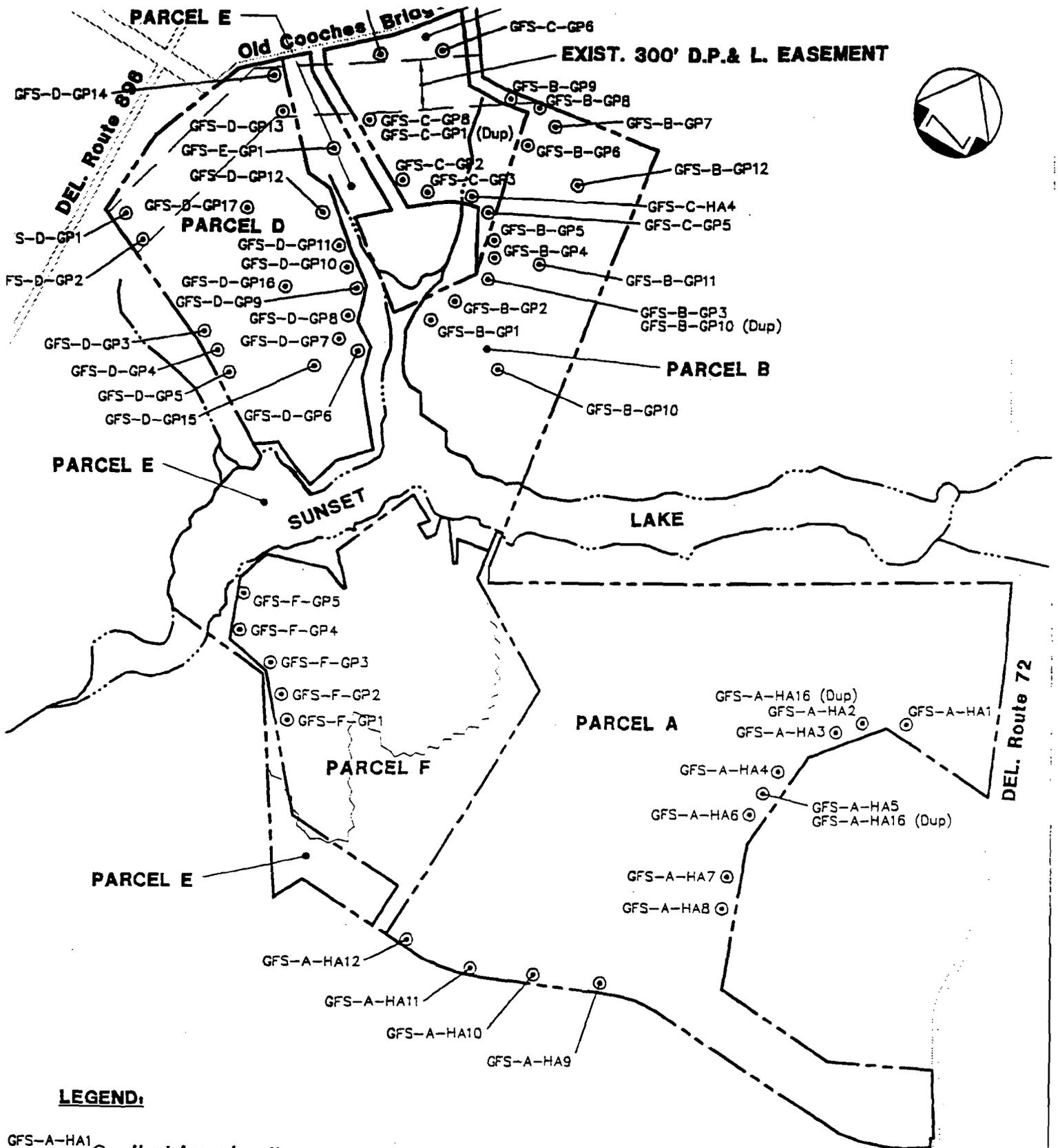
The scope-of-work for the SSI also included approximately 50 direct push soil and groundwater locations. Three samples were collected from each direct push boring: (1) a surface sample (0-6” depth), (2) a sub-surface soil sample (at the encountered water table interface), and (3) a sample of shallow (unconfined) groundwater (see Tables 1 and 2). In addition, a total of 12 backhoe-excavated test pits were conducted on parcels B and F, and two shallow monitoring wells were installed on parcels A and F (see Figure 5). Sampling of the 2 new wells and 8 existing wells was also conducted during the SSI.

The DNREC Mobile Laboratory screened solid matrix samples for metals, VOCs, semivolatile polynuclear aromatic compounds (SVOCs), pesticides/herbicides, and polychlorinated biphenyls (PCBs). Aqueous matrixes were screened for VOCs. Selected samples (approximately 20%) were analyzed either by Envirotech Research, Inc., a Delaware certified Hazardous Substance Cleanup Act (HSCA) laboratory, or the DNREC Division of Water Resources Laboratory, using Standard Operating Procedures for Chemical Analytical Programs (SOPCAP) (DNREC, 1997) procedures and methods.

The screening results were compared to the Uniform Risk Standard (URS) for Human Health (HH) and Protection of the Environment (PE) which are part of the DNREC Remediation Standards Guidance Documents. The criteria used for the URS were the Critical Water Use Area and Unrestricted Use.

The SSI concluded that no contaminants or discrete sources of contaminants were detected in the rigorous sampling of the groundwater and soil at the Glasgow Farms site. The evaluation of sediment and water quality at Sunset Lake did not demonstrate the presence of “source-related” organic contamination, although the west-southwest border of the Sunset Lake did have metal concentrations above the URS. These metals have a limited distribution. Consequently no overall impact upon sediment of surface water quality was indicated in the sampling data.

The following is a description of the results of the SSI:

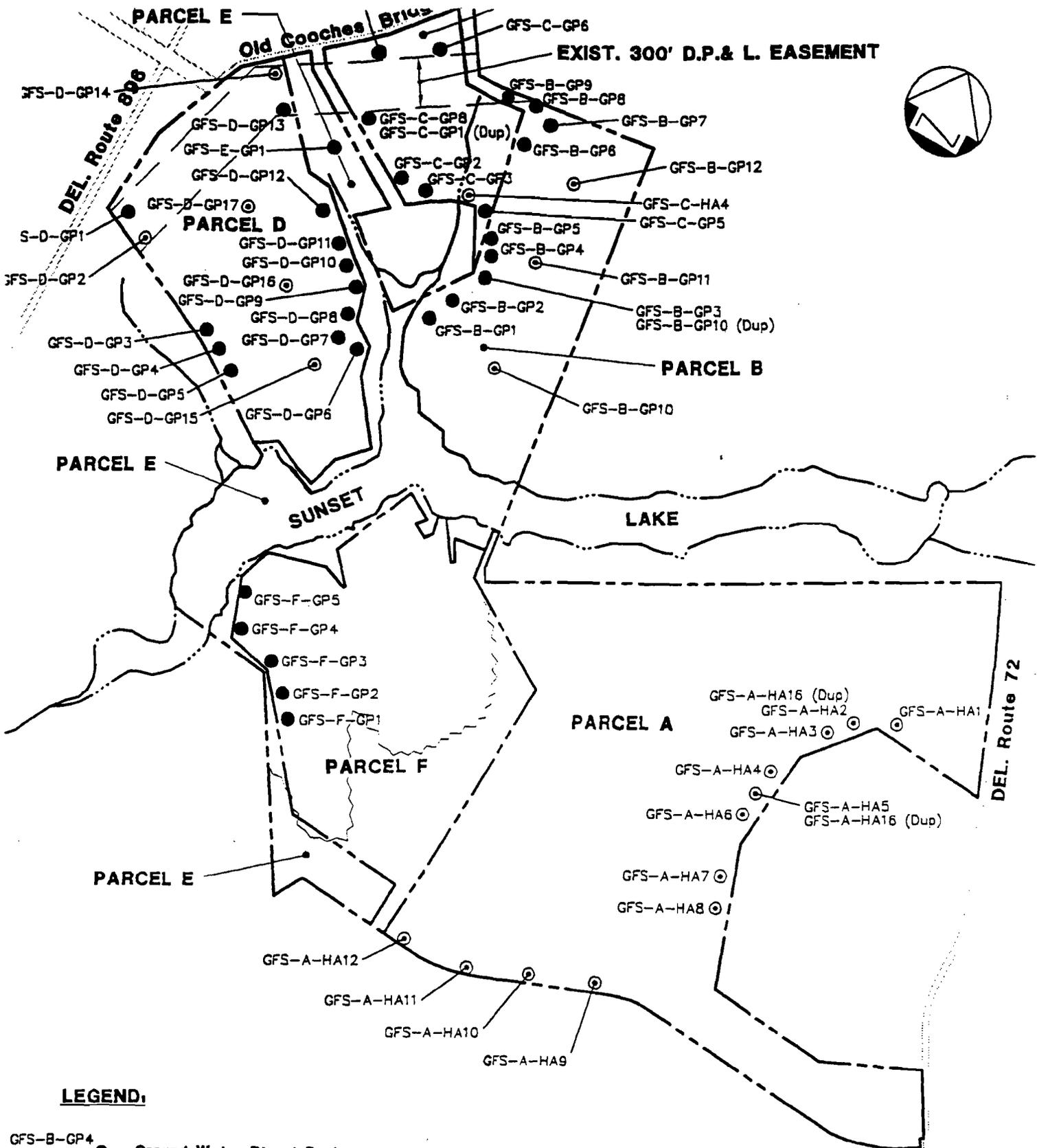


LEGEND:

- GFS-A-HA1 ⊙ Hand Auger Location
- GFS-B-GP1 ⊙ Direct Push Location



FIGURE 2
 Direct Push / Hand Auger
 Sampling Locations
 Glasgow Farms Site
 Newark, Delaware



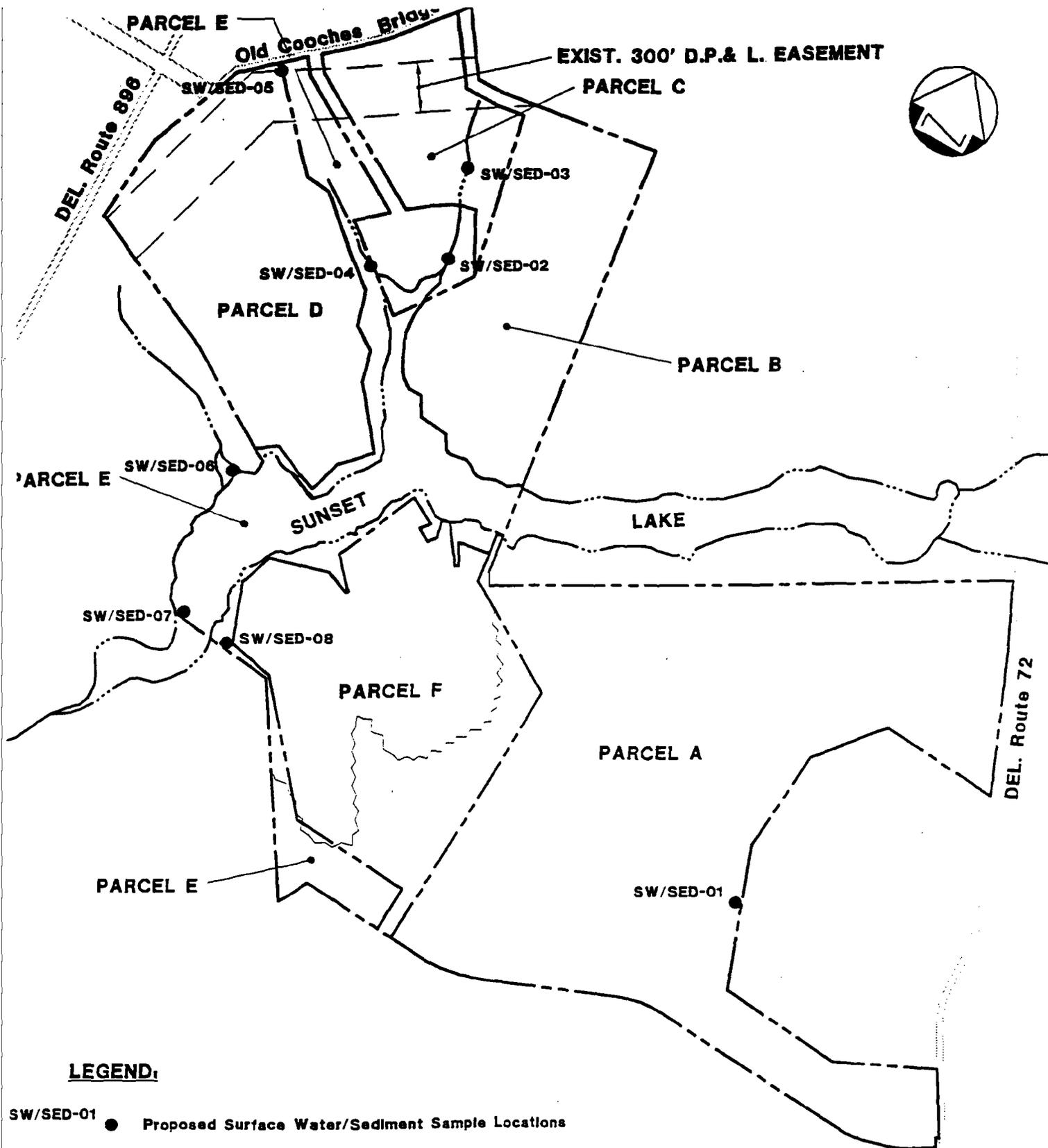
LEGEND:

GFS-B-GP4 ● Ground Water Direct Push
 ○ Ground Water 1331 Sampling Location



TETRA TECH, INC.

FIGURE 3
 Direct Push Ground Water
 Sampling Locations
 Glasgow Farms Site
 Newark, Delaware



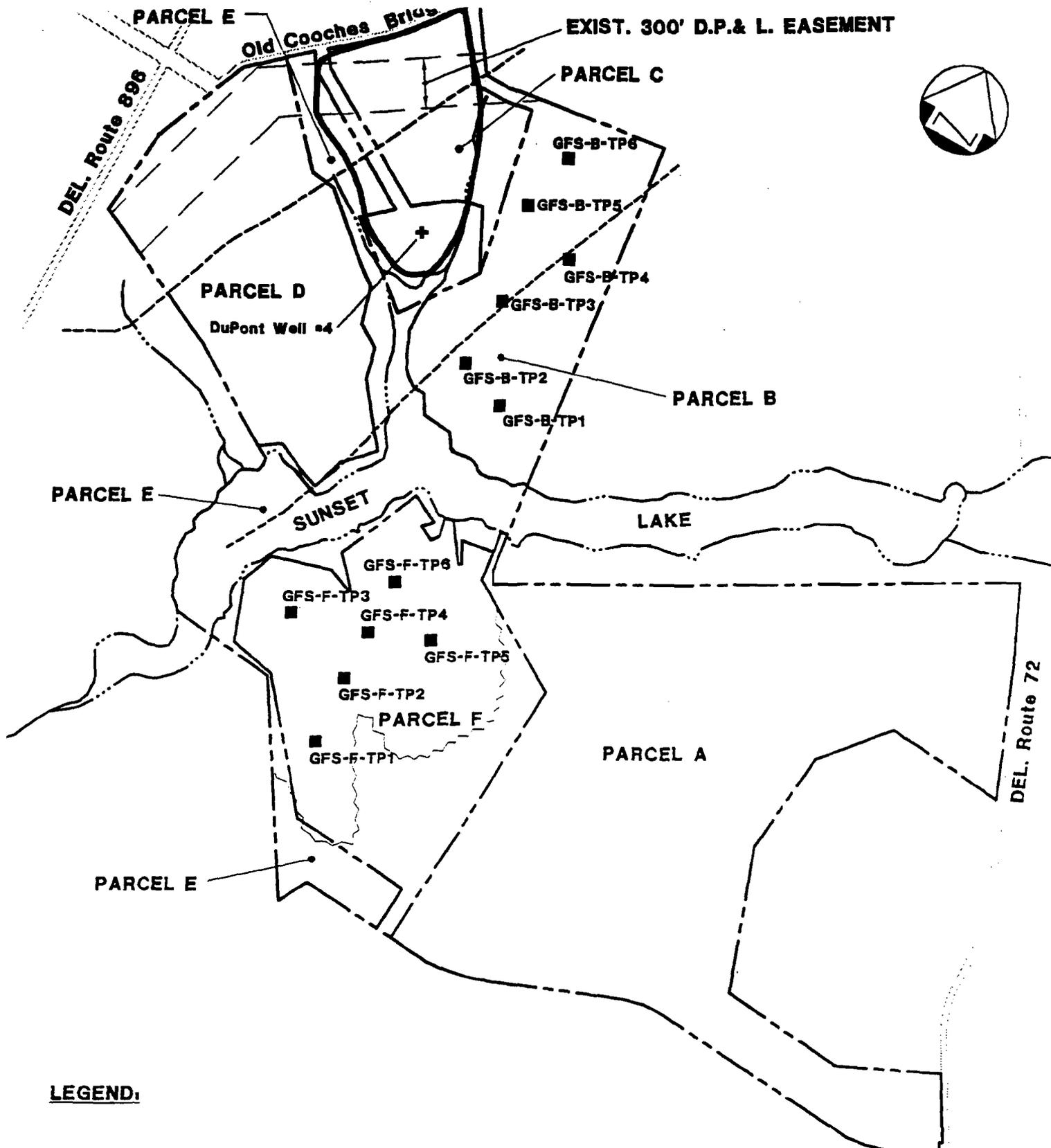
LEGEND:

SW/SED-01 ● Proposed Surface Water/Sediment Sample Locations



TETRA TECH, INC.

FIGURE 4
 Surface Water and Sediment
 Sample Location Map
 Glasgow Farms Site
 Newark, Delaware



LEGEND:

- FS-F-TP1 ■ Test Pits (12)
- - - - - Approx. Limit of Confined Sand & Gravel Aquifer
- Approx. Borrow Pit Boundary



TETRA TECH, INC.

FIGURE 5

**Test Pit Locations
Glasgow Farms Site
Newark, Delaware**

TABLE 1
FIELD SAMPLING SCHEDULE
GLASGOW FARMS SITE

Date		Number of Samples Collected				
		Soil		Ground Water	Laboratory QA/QC	
		Surface	Subsurface		Soil	Water
11/19/98	Phase I Site Walkthrough/Recon and Ecological Survey					
11/20/98	Phase I Site Walkthrough/Recon and Ecological Survey					
11/30/98	Collection of Surface Soil samples in Parcel A	8	0	0	D, M	
12/1/98	Collection of Geoprobe samples in Parcel D	9	9	8		
12/2/98	Collection of Geoprobe samples in Parcels C and D	9	9	8	D	D, M
12/3/98	Collection of Geoprobe samples in Parcels B, C and E	8	8	8	D	D
12/4/98	Collection of Geoprobe samples in Parcel F, Collection of SW/SED samples	14	5	14	D	D
12/7/98	Collection of Geoprobe samples in Parcels B and D	10	10	4	D	
12/14/98	Collection of hand auger samples in Parcel A	3	6	1		
1/5/99	Test pits in Parcel F, Collection of surface soil samples around PAH detections >5mg/Kg	21	6	0	D	
1/6/99	Test pits in Parcel B	7	7	5		M

Notes

- D- duplicate sample collected
- R- rinsate sample collected
- M- MS/MSD sample collected

TABLE 2
SAMPLING SUMMARY
GLASGOW FARMS SITE

MATRIX	ANALYTICAL PARAMETERS						
	Volatile Organic Compounds	Semivolatile Polynuclear Aromatic Hydrocarbons	Pesticides/ Herbicides	PCBs	Total Metals	Water Quality Parameters	Dissolved Metals
PHASE 1							
SOIL (Direct Push Borings)							
Screening by DNREC	105	105	0	105	105	0	0
Laboratory Analyses	10 (subsurface only)	18	9	9	18	0	0
GROUND WATER							
Direct Push Screening	35	0	0	0	0	0	0
SURFACE WATER							
Laboratory Analyses	9	3	3	0	9	3	0
SEDIMENT							
Screening by DNREC	9	9	0	9	9	0	0
Laboratory Analyses	3	9	3	3	9	0	0
PHASE 2							
SOIL (Test Pit Samples)							
Screening by DNREC	24	24	0	24	24	0	0
SOIL (Hand Auger Samples)							
Screening by DNREC	0	45	0	0	0	0	0
GROUND WATER (Monitor Wells)							
Screening by DNREC	10	0	0	0	0	0	0
Laboratory Analyses	10	0	2	2	10	10	10

Soils: No VOCs were detected. No metals were detected above URS values except for iron. This metal is considered native to the soil. There were scattered detection's of PAHs and 2 detection's for PCBs, but neither the PAH nor the PCB detection's exceeded the URS benchmark.

Groundwater: No trichloroethylene (TCE) or related VOCs were detected. Only Carbon Disulfide was detected in 2 samples, both below 10 ug/L. The URS standard for Carbon Disulfide is 100 ug/L.

Sediment: No VOCs were detected. No atypical metals were detected above background concentrations. PAH detection's were detected in 6 samples, however, not above URS benchmarks. No detection of PCBs was encountered.

Surface Water: No VOCs were detected. No other contamination was detected above the URS benchmarks.

Based upon the information obtained from the previous environmental assessments and the SSI performed at the Glasgow Farms site, no potential risk to the public, future workers, or the environment are associated with the Glasgow Farms site.

IV PROPOSED AND FINAL PLAN OF REMEDIAL ACTION

The Department has decided adopt the SSI, based upon the equivalency of sampling rationale, data quality and report completeness, to that of a Remedial Investigation ("RI"). Based upon the information and results of the SSI performed at the Glasgow Farms site, in Glasgow, Delaware, the Department recommended during the Proposed Plan of Remedial Action that no further action or investigation be required.

V PUBLIC PARTICIPATION

The Department actively solicited public comments or suggestions on the Proposed Plan of Remedial Action and welcomed opportunities to answer questions (see Figure 6). The public comment period for the Proposed Plan of Remedial Action began February 2, 1999 and closed February 22, 1999. No comments were received on the Proposed Plan of Remedial Action. Therefore, the Department recommends that no further action or investigation be required at the Glasgow Farms site.

**PUBLIC NOTICE
PROPOSED PLAN OF
REMEDIAL ACTION
FOR THE GLASGOW
FARMS SITE**

The Department of Natural Resources and Environmental Control ("DNREC" or "Department") announces the Proposed Plan of Remedial Action for the Glasgow Farms Site, located in New Castle County, Delaware, under the authority of the Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91 (HSCA).

In June 1998, Glasgow Farms, L.L.C., the W.L. Gore Company, the State Division of Parks & Recreation entered into a Voluntary Cleanup Program (VCP) agreement for a Sampling Site Investigation (SSI) on a portion (i.e., 354 acres ±) of the Former Dupont Glasgow property located in Pencader Hundred, Glasgow, Delaware. The objective of the SSI was to characterize the quality of the surface soils, the sub-surface soils, shallow groundwater, as well as the surface water and sediment in drainage to, and shallow depositional areas of Sunset Lake.

The SSI concluded, based on the laboratory analytical data, along with the past site history, that no contaminants or discrete sources of contaminants were detected in the rigorous sampling of the soil and groundwater at the Glasgow Farms site. The evaluation of the sediment and water contamination, did not demonstrate the presence of "source related" organic contamination, although the west/southwest border of the Sunset Lake did have metal concentrations above DNREC standards. These metals have a limited aerial distribution and are believed to be derived from natural sources. Consequently no overall impact upon sediment or surface water quality is indicated in the sampling data.

Therefore, based upon the information obtained from the previous environmental assessments and the SSI performed at the Glasgow Farms site, the Department recommends that no further action, or investigation be required.

A copy of the Proposed Plan of Remedial Action for the Glasgow Farms Site is available at the following location:

DNREC - SIRB
391 Lukens Drive
New Castle, DE 19720
(302) 395-2600

DNREC invites written comments on this Plan. Members of the public may also request a public hearing on the Proposed Plan of Remedial Action pursuant to 7 Del. C. § 9112. The comment period begins on Tuesday, February 2, 1999 and ends at 4:30 p.m. on Monday, February 22, 1999.

Comments and/or requests for a public hearing may be submitted in writing to Paul Will by the close of business (4:30 p.m.) on Monday, February 22, 1999 at the above address. For additional information contact Paul Will at (302) 395-2600.

272-NJ O/369106

Figure 6

VI DECLARATION

This Final Plan of Remedial Action for the Glasgow Farms Site is protective of human health, welfare, and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act (HSCA).



Nicholas A. DiPasquale, Director

2/23/99

Date

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