N00129.AR.001242
NSB NEW LONDON
5090.3a

MONTHLY OPERATIONS SUMMARY FOR THE NAVAL EXCHANGE (NEX) AND DOLPHIN MART AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEMS

NEW LONDON NAVAL SUBMARINE BASE
GROTON, CONNECTICUT

Month: February 1999

Prepared by:

IT Corporation
Prepared by:

Barry A. Kline, P.E.
Project Engineer

Foster Wheeler Environmental Corp.
Reviewed by:

Susan R. Leach, P.E.
Environmental Site Technical Manager

grsubbas\wp\gr345.doc

OPERATIONAL SUMMARY

DOLPHIN MART AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since June 29, 1996. As of February 10, 1999, eight (8) horizontal vapor extraction trenches (VET-1, VET-2, VET-3, VET-4, VET-5, VET-6, VET-7 and VET-8) were operating. The soil vapor extraction (SVE) system is currently operating at a flow rate of approximately 346 standard cubic feet per minute (scfm). The air sparge system has been deactivated since January 30, 1999.

A site map has been included as **Figure 1**. The site monitoring forms for operation and maintenance (O&M) conducted during the month of February 1999 are included in **Attachment 1**. A weekly break-down of the month's field activities has been included as **Attachment 2**.

Mass Removal - The total hydrocarbon mass removal rate, based on the SVE system influent sample collected on February 10, 1999, was 0.055 lbs/hour. Based on the average mass removal rate from January 12, 1999 to February 10, 1999, approximately 16.4 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of February 10, 1999, was approximately 2,153 lbs. The system database has been included in **Attachment 3**. Mass removal graphs have been included as **Figures 3A, 3B and 4**. Based on the hydrocarbon mass removal rate, no exceedance of Connecticut Department of Environmental Protection (CTDEP) air quality guidelines was observed.

Carbon Usage - No carbon change-out occurred during the month of February, 1999. The last vapor phase carbon change-out at the site occurred August 27, 1997. No liquid phase carbon change-out has occurred to date.

Discharge Monitoring Sampling - Air discharge sampling for the system was conducted on February 10, 1999. Water discharge sampling was conducted at the site on February 19, 1999.

Monitoring Well Gauging - A round of site monitoring well gauging was conducted on February 19, 1999 during the quarterly groundwater sampling event. Depth to groundwater at the site ranged from 0.50 feet in OBG-9A to 8.49 feet in WE-3. Historical well gauging data has been included in **Attachment 4**.

Monitoring Well Sampling - A round of site monitoring well sampling was conducted on February 19, 1999. The February Quarterly Groundwater Sampling Report will be issued under separate cover. The historical groundwater sampling results have been summarized in **Attachment 5**.

Additional Activities – None.

NEX AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since July 31, 1997. As of February 18, 1999, 17 vapor extraction points (VEA-12 through VEA-16, VEA-18 through VEA-20, VEB-4, and VEB-8 through VEB-15) and 19 air sparge points (SPA-30 through SPA-37, SPB-14, SPB-16, and SPB-19 through SPB-27) were operating. As of February 19, 1999, the soil vapor extraction (SVE) system was operating at a flow rate of approximately 294 standard cubic feet per minute (scfm). During the month of February 1999, the air sparge system injected air at a flow rate of approximately 70 scfm. Approximately 220,082 gallons of water had been extracted, treated, and discharged by the NEX system as of February 10, 1999.

A site map has been included as **Figure 2**. The site monitoring forms for operation and maintenance (O&M) conducted during the month of February 1999 are included in **Attachment 1**. A weekly break-down of the month's field activities has been included as **Attachment 2**.

Mass Removal - The total hydrocarbon mass removal rate, based on the SVE system influent sample collected on February 10, 1999, was 0.21 lbs/hour. Based on the average mass removal rate from January 12, 1999 to February 10, 1999, approximately 32 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of February 10, 1999, was approximately 3,752 lbs. The system database has been included in **Attachment 3**. Mass removal graphs have been included as **Figures 5A, 5B and 6**. Based on the hydrocarbon mass removal rate, no exceedance of CTDEP air quality guidelines was observed.

Carbon Usage – The liquid phase granular activated carbon was changed-out on February 25, 1999. The last vapor-phase carbon change-out occurred September 8, 1997.

Discharge Monitoring Sampling - Air and water discharge sampling for the system was conducted on February 10, 1999 and February 26, 1999 respectively.

Monitoring Well Gauging - A round of site monitoring well gauging was conducted on February 18, 1999. Depth to groundwater at the site ranged from 3.80 feet in ERM-9 to 8.37 feet in ERM-12. A sheen was detected in monitoring wells ERM-12 and ERM-16.

Monitoring Well Sampling - A round of site monitoring well sampling was conducted on February 18, 1999. The February Quarterly Groundwater Sampling Report will be issued under separate cover. The historical groundwater sampling results have been summarized in **Attachment 5**.

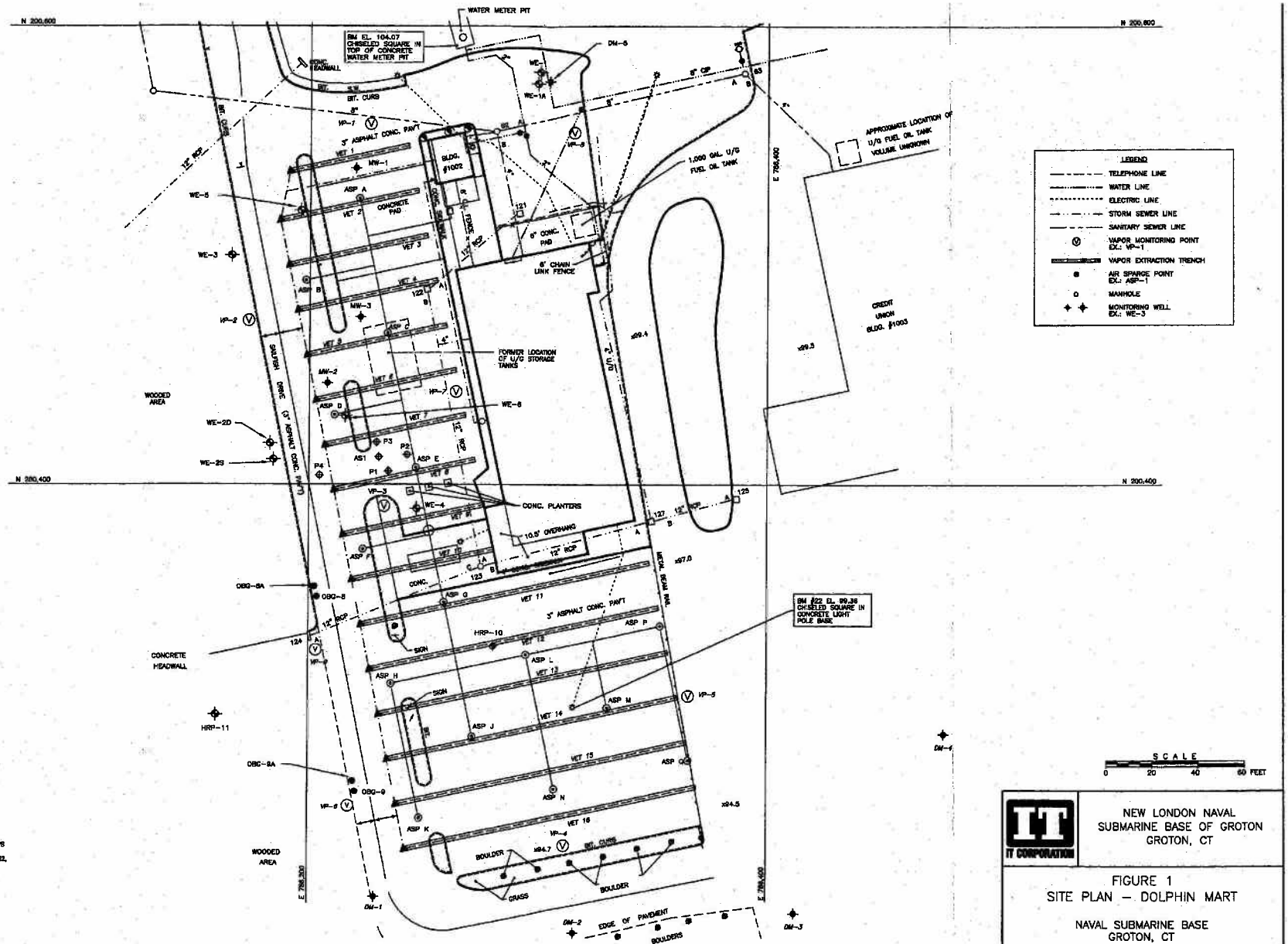
Additional Activities – Between February 16 and February 18, 1999, system optimization/balancing was performed at the NEX site. The optimization/balancing was completed in order to focus the air sparging and SVE remedial systems on the areas with the highest concentrations of dissolved VOCs in groundwater. The air sparge and SVE points were left activated only in areas that had historically exceeded the applicable remediation standards or contained separate phase hydrocarbons. The areas of

concern included the former UST and fuel dispensing area (near MW-14 and MW-9), the current UST and fuel dispensing area (near OBG-1 and OBG-2), and the area surrounding ERM-16. Additionally, on February 16, 1999 a malfunctioning sump pump probe was replaced and on February 18, 1999, a malfunctioning SVE system air flow meter was repaired.

On February 24 and February 25, 1999, IT Corporation personnel welded angle iron to additional roadbox covers at the site. The remaining six roadbox covers will be modified during March 1999.

On February 25, 1999, carbon was replaced in two of the 200 lb. water treatment GAC units. Additionally, twelve spent, vapor phase, GAC units were removed from the site and disposed by a carbon disposal service company.

FIGURES



LEGEND

- TELEPHONE LINE
- WATER LINE
- ELECTRIC LINE
- STORM SEWER LINE
- SANITARY SEWER LINE
- VAPOR MONITORING POINT EX.: VP-1
- VAPOR EXTRACTION TRENCH
- AIR SPARGE POINT EX.: ASP-1
- MANHOLE
- MONITORING WELL EX.: WE-3

THIS MAP WAS PREPARED FROM MAPS LISTED BELOW:

1. NAUTILUS PARK, GROTON, CONN. EXISTING UTILITIES MAPS PREPARED BY CULLINAN ENGINEERING CO., INC. SCALE 1"=40' DATE 3/25/83 MAPAC DRAWING NO'S. 2,064,332, 2,064,353 AND 2,064,374.
2. MONITOR WELL LOCATION AND GROUND WATER CONTOUR MAP OF JANUARY 21, 1992 DOLPHIN MART SITE US SUBASE, GROTON, CT. PREPARED BY ERM-NORTHEAST SCALE 1"=20' APRIL, 1992.
3. UTILITY DATA FROM AS-BUILT DRAWINGS AND UTILITY MAPS; EXACT LOCATIONS MUST BE VERIFIED IN FIELD.
4. ALL TOPOGRAPHIC FEATURES AND INVERTS SHOWN HEREON SHALL BE FIELD VERIFIED.

IT CORPORATION

NEW LONDON NAVAL SUBMARINE BASE OF GROTON
GROTON, CT

FIGURE 1
SITE PLAN – DOLPHIN MART

NAVAL SUBMARINE BASE
GROTON, CT

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	WIN	L. Avery 3/30/99	---	---	1405-17

DATE: 3/30/99
TIME: 2:02 PM
FORMAT REVISION 2/26/99

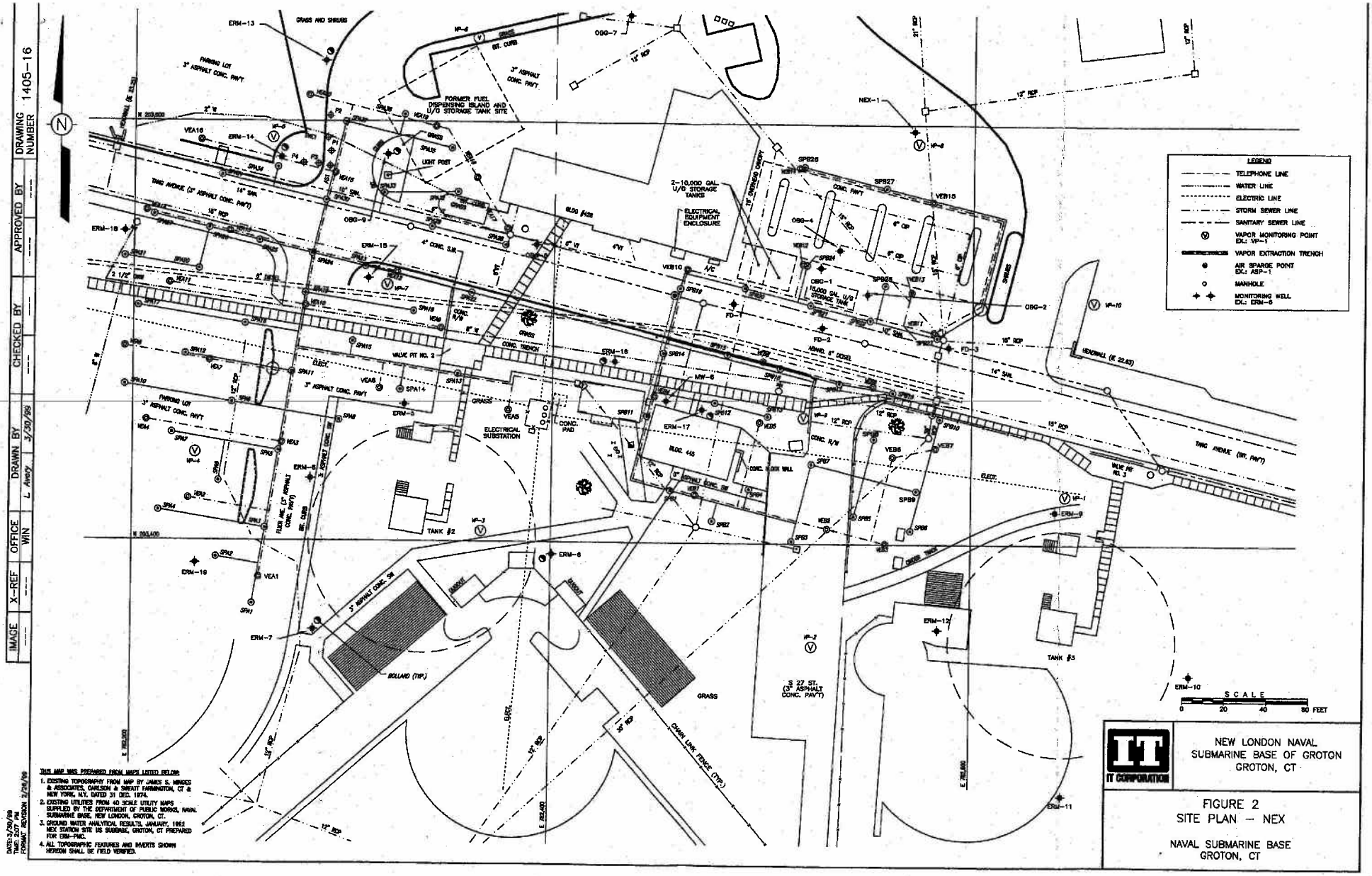
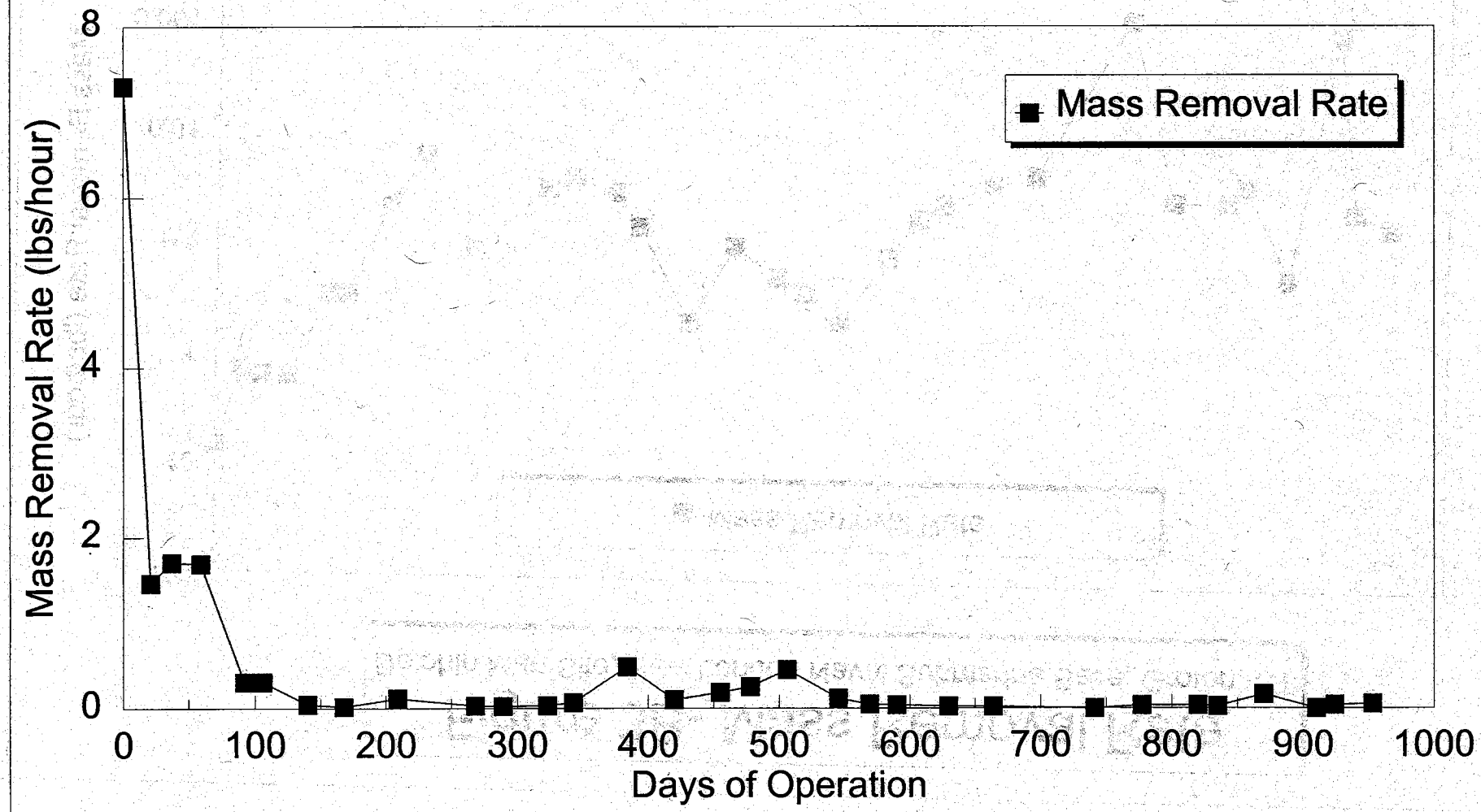

LEGEND
TELEPHONE LINE
WATER LINE
ELECTRIC LINE
STORM SEWER LINE
SANITARY SEWER LINE
VAPOR MONITORING POINT EX.: VP-1
VAPOR EXTRACTION TRENCH
AIR SPARGE POINT EX.: ASP-1
MANHOLE
MONITORING WELL EX.: ERM-6
FORMER FUEL DISPENSING ISLAND AND U/G STORAGE TANK SITE
2-10,000 GAL. U/G STORAGE TANKS
ELECTRICAL EQUIPMENT ENCLOSURE
ELECTRICAL SUBSTATION
TANK #2
TANK #3
BOLLARD (TYP.)
CHAIN LINK FENCE (TYP.)
TANG AVENUE (3" ASPHALT CONC. PAV'T)
HENDWALL (EE 22.43)
S 27 ST. (3" ASPHALT CONC. PAV'T)
SCALE
0 20 40 80 FEET
IT CORPORATION
NEW LONDON NAVAL SUBMARINE BASE OF GROTON GROTON, CT
FIGURE 2
SITE PLAN – NEX
NAVAL SUBMARINE BASE GROTON, CT
THIS MAP WAS PREPARED FROM MAPS LISTED BELOW:
1. EXISTING TOPOGRAPHY FROM MAP BY JAMES S. MINGES & ASSOCIATES, CARLSON & SWEAT FARMINGTON, CT & NEW YORK, N.Y. DATED 31 DEC. 1974.
2. EXISTING UTILITIES FROM 40 SCALE UTILITY MAPS SUPPLIED BY THE DEPARTMENT OF PUBLIC WORKS, NAVAL SUBMARINE BASE, NEW LONDON, GROTON, CT.
3. GROUND WATER ANALYTICAL RESULTS, JANUARY, 1993 NEX STATION SITE US SUBBASE, GROTON, CT PREPARED FOR ERM-PNC.
4. ALL TOPOGRAPHIC FEATURES AND INVERTS SHOWN HEREON SHALL BE FIELD VERIFIED.
DATE: 3/30/99
TIME: 3:07 PM
FORMAT REVISION: 3/24/99
IMAGE | X-REF | OFFICE WIN | DRAWN BY L Avery 3/30/99 | CHECKED BY | APPROVED BY | DRAWING NUMBER 1405-16

Figure 3A- Mass Removal Rate

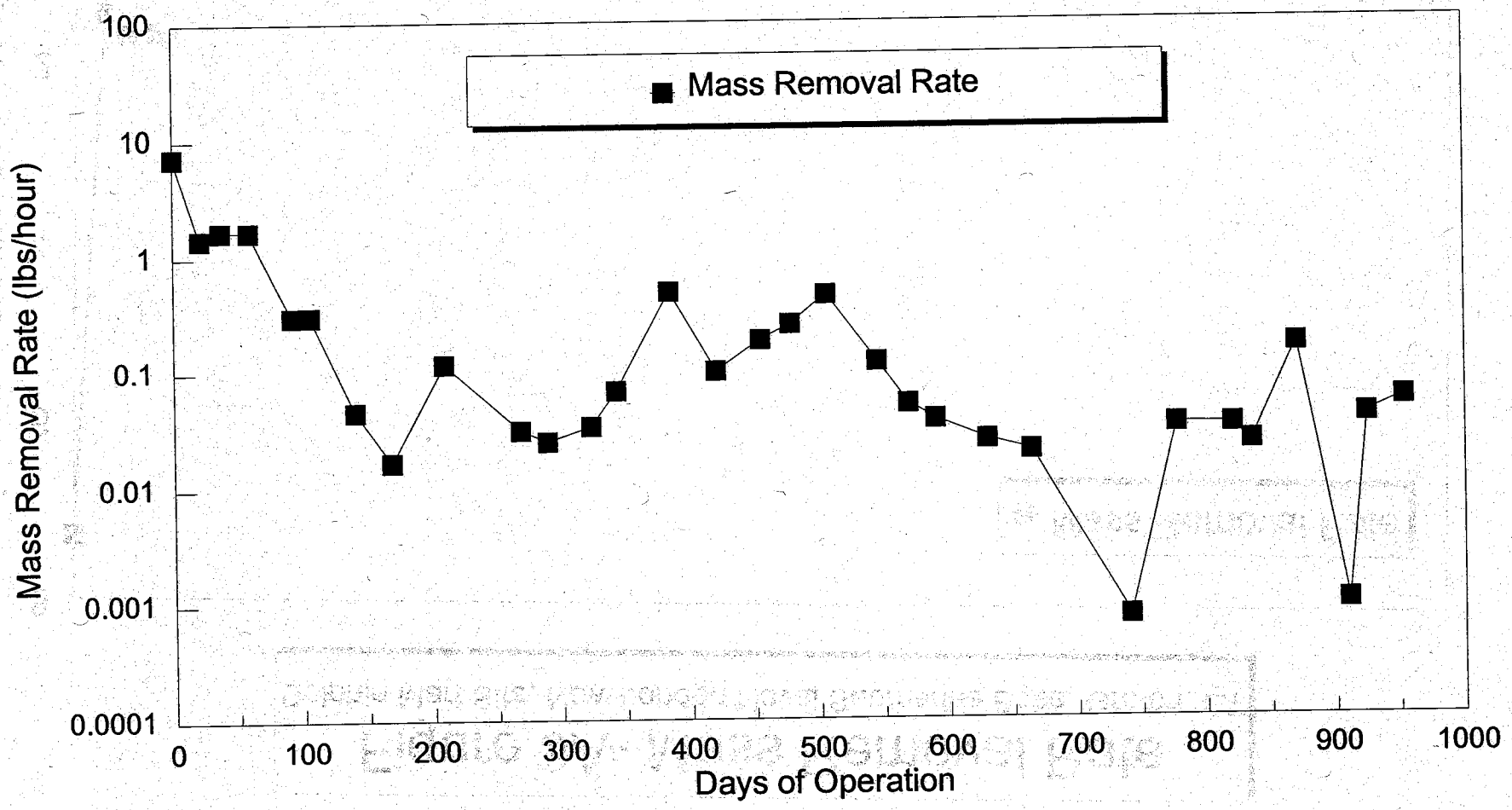
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT



MASSREM2.WK4

Figure 3B- Mass Removal Rate

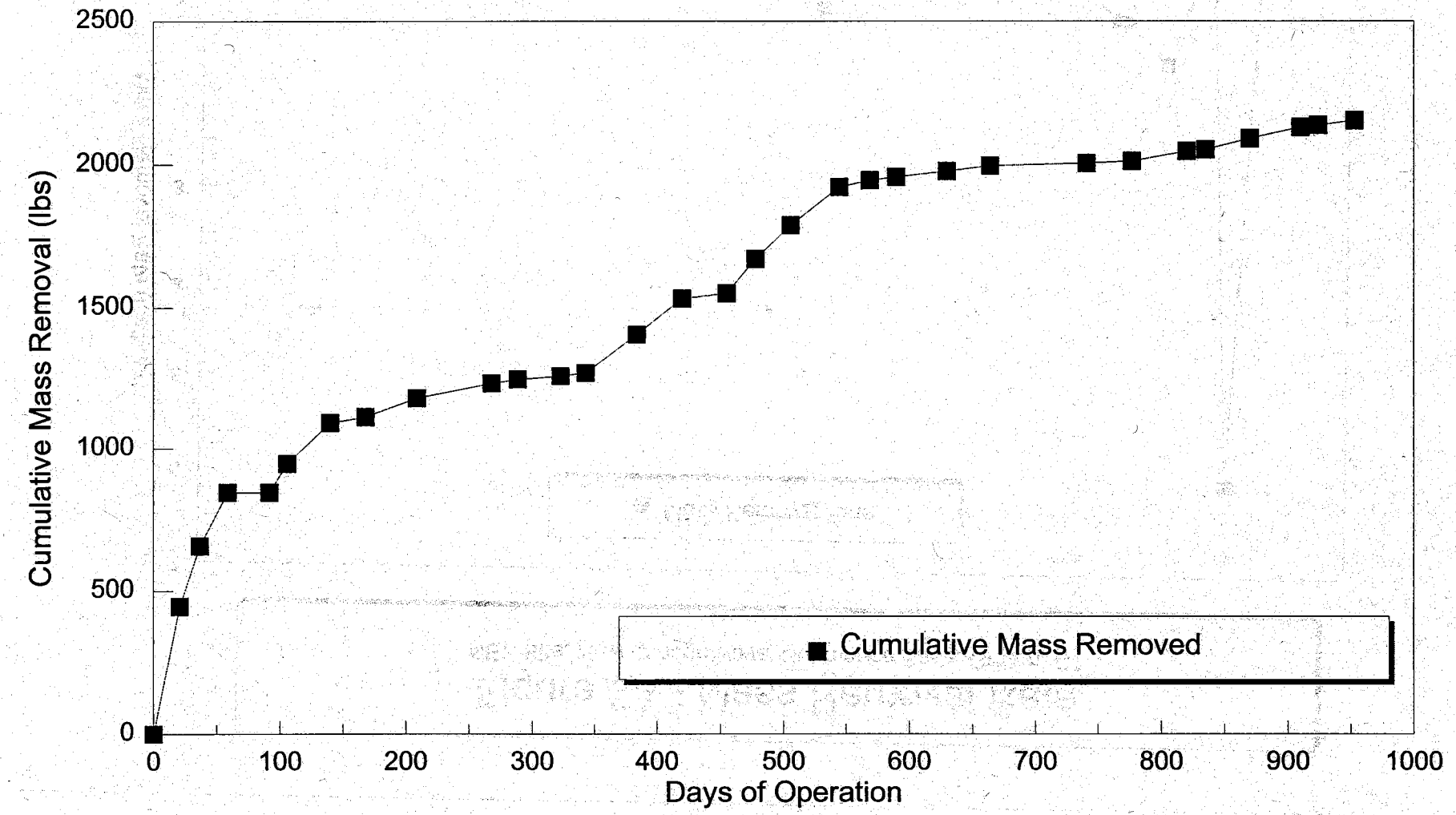
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT



MASSREM2.WK4

Figure 4 - Cumulative Mass Removed versus Time

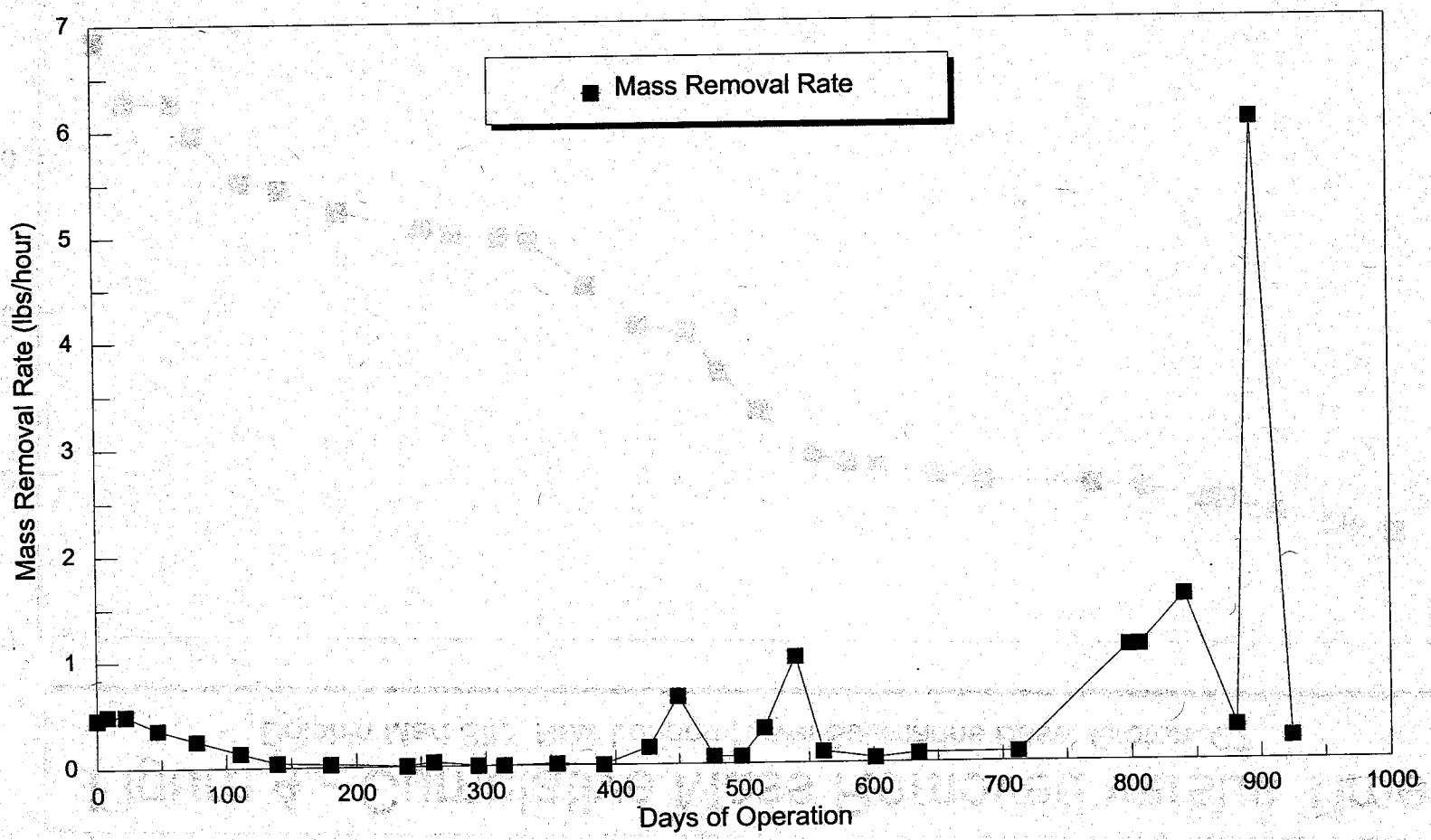
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT



MASSREM2.WK4

Figure 5A - Mass Removal Rate

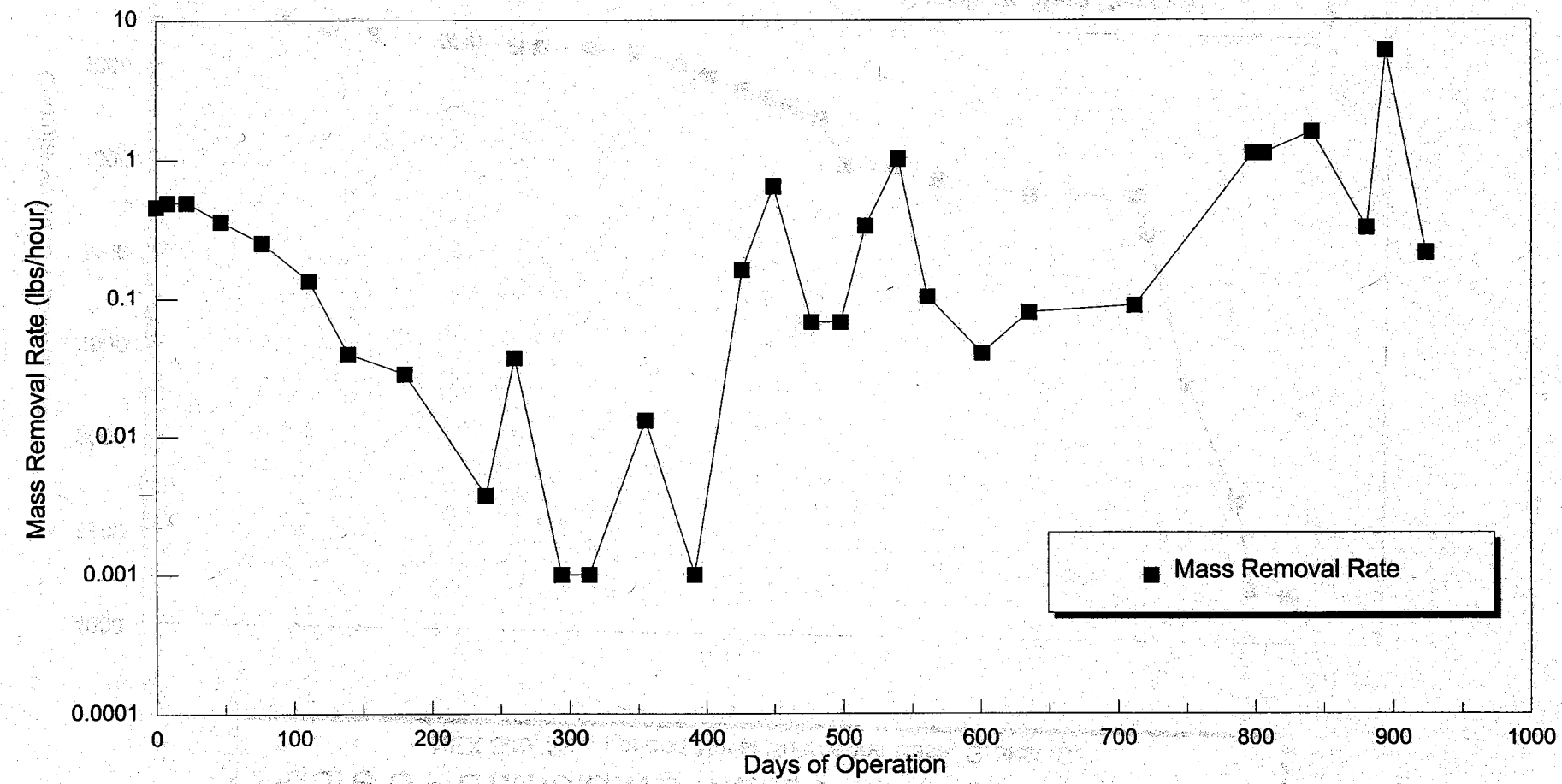
NEX Site, New London Naval Submarine Base, Groton, CT



MASSREM2.WK4

Figure 5B - Mass Removal Rate

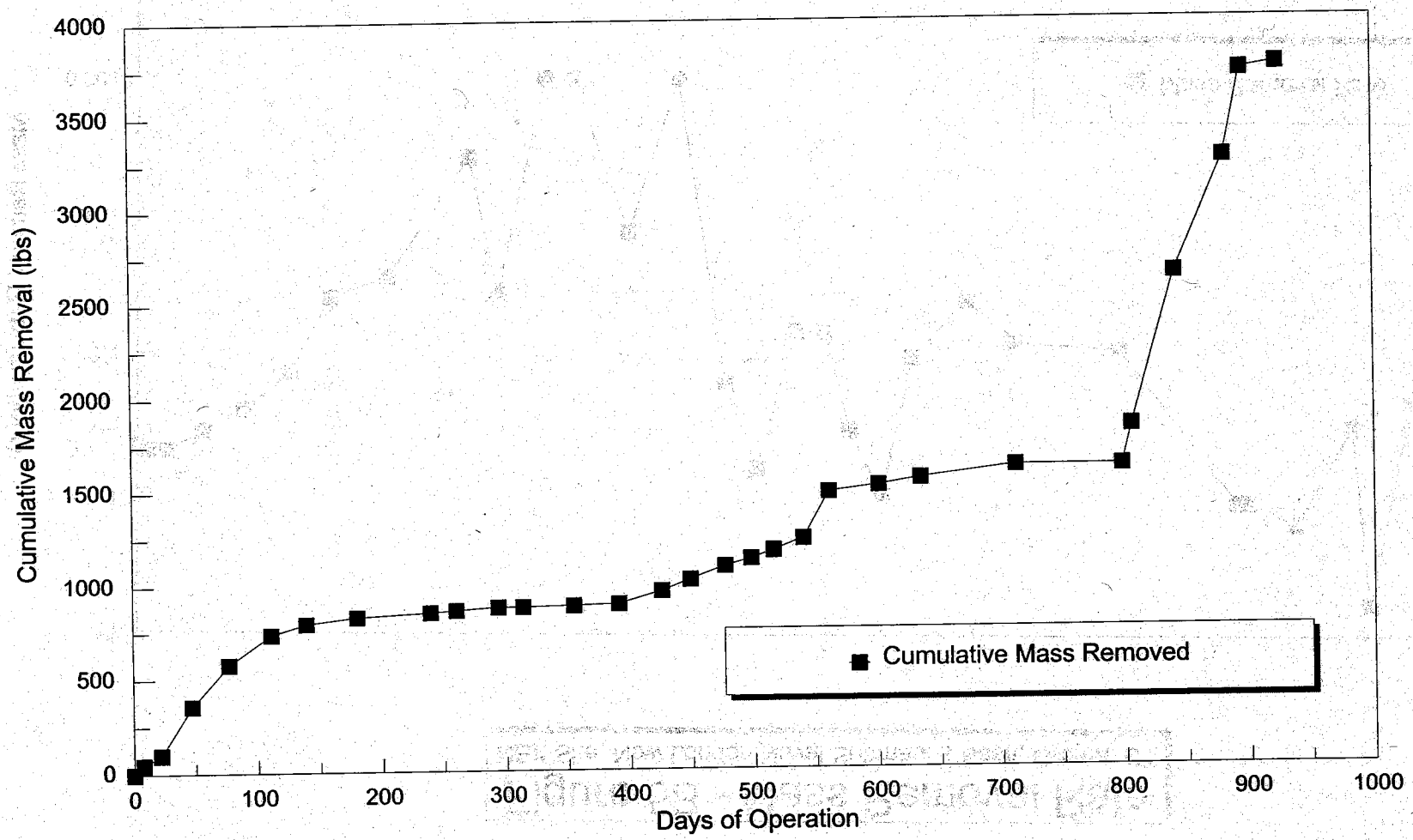
NEX Site, New London Naval Submarine Base, Groton, CT



MASSREM2.WK4

Figure 6 - Cumulative Mass Removed versus Time

NEX Site, New London Naval Submarine Base, Groton, CT



MASSREM2.WK4

ATTACHMENT 1

SITE VISIT FORMS

OPERATIONAL DATA FORM
Air Sparging/Soil Vapor Extraction System
Naval Exchange
Naval Submarine Base -Groton, CT
Project #87260014

Date: 2-10-99
Time:
Technician: J.R. Jr.

AIR COMPRESSOR SYSTEM

Flow Rate 67 to 73 SCFM
Total Flow 9675940 SCFM

Air Compressor C-1
Pressure 12 psi
Temperature 254 °F
Flow Control Valve Setting 100 %
Bleed Valve 50 %
Radiator (ON) OFF

Air Compressor C-2
Pressure NA psi
Temperature °F
Flow Control Valve Setting
Bleed Valve
Radiator (ON) / OFF

SOIL VAPOR EXTRACTION SYSTEM

Eastern Flow Rate 20 to 273 SCFM
Total Flow 13169195 SCFM

Western Flow Rate 0 SCFM
Total Flow 24920 724 SCFM

Vacuum Pump V-1
Vacuum 6.5 "Hg
Temperature 156 °F
Particulate Filter OK
Flow Control Valve Setting 100 %
Bleed Air Valve Setting 25 %
Liquid Level OK

Vacuum Pump V-2
Vacuum 7.0 "Hg
Temperature 148 °F
Particulate Filter OK
Flow Control Valve Setting 100 %
Bleed Air Valve Setting 25 %
Liquid Level OK

Vacuum Pump V-3
Vacuum 7.5 "Hg
Temperature 192 °F
Particulate Filter OK
Flow Control Valve Setting 100 %
Bleed Air Valve Setting 25 %
Liquid Level OK

Vacuum Pump V-4
Vacuum NA "Hg
Temperature °F
Particulate Filter
Flow Control Valve Setting
Bleed Air Valve Setting
Liquid Level

ACTIVATED CARBON ADSORPTION SYSTEM

Carbon Adsorber A/B
Pressure 18 psi
Inf. VOC Level 3.6 ppm
Mid. VOC Level 2.7 ppm
Eff. VOC Level 4.0 ppm
Change out Date NA

Carbon Adsorber C/D
Pressure 25 psi
Inf. VOC Level 6.2 ppm
Mid. VOC Level ppm
Eff. VOC Level 6.2 ppm
Change out Date 8-22-96

WATER TREATMENT

Flowmeter Reading 219552.3 Gallons (arrival reading)
Flowmeter Reading 220082.8 Gallons (departure reading)

COMMENTS

* FILL IN ALL SPACES WITH THE APPROPRIATE READING OR "NA".

OPERATIONAL DATA FORM
Air Sparging/Soil Vapor Extraction System
Dolphin Mart
Naval Submarine Base -Groton, CT
Project #87260014

Date: 2/10/99
Time:
Technician: J.K. Jr.

AIR COMPRESSOR SYSTEM

Flow Rate: 0 SCFM
Total Flow: 66174 50 SCFM

Air Compressor C-1
Pressure: NA psi
Temperature: °F
Flow Control Valve Setting:
Bleed Valve:
Radiator: ON / OFF

Air Compressor C-2
Pressure: NA psi
Temperature: °F
Flow Control Valve Setting:
Bleed Valve:
Radiator: ON / OFF

SOIL VAPOR EXTRACTION SYSTEM

Flow Rate: 1762 SCFM (use anemometer in hole in pipe near Hersey flowmeter)

Vacuum Pump V-1
Vacuum: NA "Hg
Temperature: °F
Particulate Filter:
Flow Control Valve Setting:
Bleed Air Valve Setting:
Liquid Level:

Vacuum Pump V-2
Vacuum: 4.5 "Hg
Temperature: 116 °F
Particulate Filter: OK
Flow Control Valve Setting: 100 %
Bleed Air Valve Setting: 25 %
Liquid Level: OK

Vacuum Pump V-3
Vacuum: NA "Hg
Temperature: °F
Particulate Filter:
Flow Control Valve Setting:
Bleed Air Valve Setting:
Liquid Level:

Vacuum Pump V-4
Vacuum: NA "Hg
Temperature: °F
Particulate Filter:
Flow Control Valve Setting:
Bleed Air Valve Setting:
Liquid Level:

ACTIVATED CARBON ADSORPTION SYSTEM

Carbon Adsorber A/B
Pressure: NA psi
Inf. VOC Level: ppm
Mid. VOC Level: ppm
Eff. VOC Level: ppm
Change out Date: NA

Carbon Adsorber C/D
Pressure: 29 psi
Inf. VOC Level: 1.8 ppm
Mid. VOC Level: 0 ppm
Eff. VOC Level: 0 ppm
Change out Date: 8-22-96

WATER TREATMENT

Flowmeter Reading: 4330.2 Gallons (arrival reading)
Flowmeter Reading: 4330.2 Gallons (departure reading)

COMMENTS

ATTACHMENT 2

MONTHLY FIELD ACTIVITY SUMMARY

Field Activity Summary
February 1999

New London Naval Submarine Base
Groton, Connecticut

Week Ending	Site	Period	Field Activities	Comments
2/12/99	Dolphin Mart	Monthly Monitoring	Conducted system monitoring and maintenance, and collected air discharge sample.	SVE system down on arrival due to high water level in moisture traps. Air sparge system not currently active.
	NEX		Conducted system monitoring and maintenance, and collected air discharge samples.	Blowers V-1 and compressor C-1 down on arrival.
2/19/99	Dolphin Mart		Conducted system balancing and maintenance, quarterly well gauging and sampling, and collected water discharge monitoring samples.	
	NEX		Conducted system balancing and maintenance, quarterly well gauging and sampling.	Repaired air flow meter.
2/26/99	Dolphin Mart		Conducted system monitoring and maintenance.	SVE system down on arrival.
	NEX		Welded Angle iron to various roadboxes. Changed-out liquid phase granular activated carbon. Disposed 12 drums of vapor phase carbon. Collected water discharge monitoring samples.	

ATTACHMENT 3

AIR SPARGE/SVE SYSTEM DATABASES

SYSTEM MONITORING DATA
SOIL VAPOR EXTRACTION/AIR SPARGE SYSTEM

New London Naval Submarine Base
Dolphin Mart Site
Groton, CT

Date	Air Sparge Flowrate (scfm)	Extraction Flowrate (scfm)	Influent Concentration BTEX (ppmv)	Removal Rate BTEX (lb/hr)	Influent Concentration MTBE (ppmv)	Removal Rate MTBE (lb/hr)	Influent Concentration Aliphatics (ppmv)	Removal Rate Aliphatics (lb/hr)	Influent Concentration Aromatics (ppmv)	Removal Rate Aromatics (lb/hr)	Influent Concentration TVPH (ppmv)	Removal Rate TVPH (lb/hr)	Total Mass Removal Rate (lbs/hr)	Period Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Comments
07/02/96	25	450	24.00	0.187	33.00	0.232	1000.00	6.876	0.00	0.000	---	0.000	7.295	0.00	0.00	
07/23/96	20	449	11.40	0.091	0.00	0.000	200.00	1.372	0.00	0.000	---	0.000	1.463	446.70	446.70	system operated approx. 102 hrs between 7/2 and 7/23
08/08/96	32	454	18.00	0.143	---	0.000	210.00	1.457	12.00	0.103	---	0.000	1.702	210.53	657.23	system operated approx. 133 hrs between 7/23 and 8/8
08/30/96	0	450	18.00	0.142	---	0.000	210.00	1.444	12.00	0.102	---	0.000	1.687	188.14	845.37	system operated approx. 111 hrs between 8/8 and 8/30
10/02/96	30	448	2.30	0.019	0.00	0.000	---	0.000	---	0.000	36.00	0.286	0.305	0.00	845.37	system not in operation from 8/30 to 10/2 due to flow meter problem
10/16/96	30	450	2.30	0.019	0.00	0.000	---	0.000	---	0.000	36.00	0.287	0.306	102.58	947.95	system reactivated 10/2/96
11/19/96	30	450	0.38	0.003	0.00	0.000	---	0.000	---	0.000	5.29	0.042	0.045	143.33	1091.28	
12/17/96	30	450	0.12	0.001	0.00	0.000	---	0.000	---	0.000	1.97	0.016	0.017	20.84	1112.12	
01/27/97	30	450	1.35	0.011	0.00	0.000	---	0.000	---	0.000	13.23	0.106	0.117	65.56	1177.68	
03/27/97	30	450	0.00	0.000	0.00	0.000	---	0.000	---	0.000	3.90	0.031	0.031	104.53	1229.95	assume 50% up-time, blowers shutting down due to influent water
04/17/97	30	450	0.00	0.000	0.00	0.000	---	0.000	---	0.000	3.13	0.025	0.025	14.13	1244.08	
05/21/97	15	329	0.00	0.000	0.00	0.000	---	0.000	---	0.000	5.77	0.034	0.034	11.96	1256.03	assume 50% up-time, blowers shutting down due to influent water
06/10/97	15	329	0.25	0.002	0.00	0.000	---	0.000	---	0.000	11.31	0.066	0.067	12.14	1268.17	assume 50% up-time, blowers shutting down due to influent water
07/21/97	15	329	1.89	0.011	0.00	0.000	---	0.000	---	0.000	81.79	0.477	0.488	136.76	1404.93	assume 50% up-time, blowers shutting down due to influent water
08/26/97	15	482	0.73	0.007	0.00	0.000	---	0.000	---	0.000	10.82	0.092	0.099	126.91	1531.85	assume 50% up-time, blowers shutting down due to influent water
09/30/97	15	482	0.34	0.003	0.00	0.000	---	0.000	---	0.000	21.17	0.181	0.184	17.84	1549.68	assume ~15% up-time, blowers shutting down due to influent water
10/23/97	14	589	0.00	0.000	0.00	0.000	---	0.000	---	0.000	24.06	0.251	0.251	120.10	1669.78	
11/20/97	32	590	0.00	0.000	5.45	0.050	---	0.000	---	0.000	38.49	0.403	0.453	118.28	1788.06	assume 50% up-time, blowers shutting down due to influent water
12/29/97	28	590	0.45	0.005	0.00	0.000	---	0.000	---	0.000	10.82	0.113	0.118	133.65	1921.71	assume 50% up-time, blowers shutting down due to influent water
01/22/98	27	471	0.32	0.003	0.00	0.000	---	0.000	---	0.000	5.77	0.048	0.051	24.38	1946.09	assume 50% up-time, blowers shutting down due to influent water
02/12/98	23	295	0.23	0.001	0.00	0.000	---	0.000	---	0.000	6.98	0.036	0.038	11.19	1957.28	assume 50% up-time, blowers shutting down due to influent water
03/24/98	30	245	0.45	0.002	0.00	0.000	---	0.000	---	0.000	5.29	0.023	0.025	19.91	1977.19	system down for approximately one week due to influent water
04/27/98	30	215	0.00	0.000	0.00	0.000	---	0.000	---	0.000	5.29	0.020	0.020	18.47	1995.65	
07/13/98	13	294	0.14	0.001	0.00	0.000	---	0.000	---	0.000	0.00	0.000	0.001	9.67	2005.32	assume 50% up-time, blowers shutting down due to influent water
08/18/98	10	294	0.14	0.001	0.00	0.000	---	0.000	---	0.000	6.25	0.033	0.033	7.37	2012.69	assume 50% up-time, AS blower shut down due to high pressure
09/30/98	14	294	0.07	0.0004	0.00	0.000	---	0.000	---	0.000	6.25	0.033	0.033	34.22	2046.92	
10/15/98	0	231	0.00	0.0000	0.00	0.000	---	0.000	---	0.000	5.77	0.024	0.024	5.10	2052.01	assume 50% up-time, AS blower shut down due to high pressure
11/19/98	14	223	0.00	0.0000	0.00	0.000	---	0.000	---	0.000	40.89	0.162	0.162	38.89	2090.90	assume 50% up-time, AS blower shut down due to high pressure
12/29/98	0	442	0.00	0.0000	0.00	0.000	---	0.000	---	0.000	0.00	0.000	0.001	39.01	2129.91	assume 50% up-time, AS blower shut down due to high pressure
01/12/99	0	255	0.07	0.0003	0.00	0.000	---	0.000	---	0.000	8.66	0.039	0.040	6.81	2136.72	
02/10/99	0	346	0.00	0.0000	0.00	0.000	---	0.000	---	0.000	8.90	0.055	0.055	16.37	2153.09	assume 50% up-time, blowers shutting down due to influent water

Notes:
1) Aliphatics are weighted using a response factor of hexane. (MW = 86.2)
2) Aromatics are weighted using a response factor of o-xylene. (MW=106.16)
3) Analytical data for 8/30/96 is assumed based on results of sampling conducted 8/8/96. System was deactivated 8/30/96 due to flow meter failure.
4) Flow rate of 10/16/96 through 4/17/97, 6/10/97 and 7/21/97 is assumed. Air flow meter not in operation.
5) Analytical data for 10/2 is assumed based on data from 10/16/96.
6) Beginning 10/16/96 lab analysis was performed by Mitkem Laboratory. Prior to 10/16/96 air analysis performed by NEI/GTEL
7) Mitkem results report total volatile petroleum hydrocarbons, not misc. aromatics and aliphatics.
Total Volatile Petroleum Hydrocarbons are weighted to molecular weight of 100.
8) Laboratory results from 11/19/96 to present are reported in mg/m3.

SYSTEM MONITORING DATA
SOIL VAPOR EXTRACTION/AIR SPARGE SYSTEM

New London Naval Submarine Base
NEX Site
Groton, CT

Date	Air Sparge Flowrate (scfm)	Extraction Flowrate (total) (scfm)	Influent Concentration BTEX (ppmv)	Removal Rate BTEX (lb/hr)	Influent Concentration MTBE (mg/m3)	Influent Concentration MTBE (ppmv)	Removal Rate MTBE (lb/hr)	Influent Concentration Aliphatics (ppmv)	Removal Rate Aliphatics (lb/hr)	Influent Concentration Aromatics (ppmv)	Removal Rate Aromatics (lb/hr)	Influent Concentration TVPH (ppmv)	Removal Rate TVPH (lb/hr)	Total Mass Removal Rate (lbs/hr)	Period Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Comments
07/31/96	NA*	253	1.80	0.007	NA	—	0.000	130.00	0.455	0.00	0.000	—	0.000	0.463	0.00	0.00	
08/08/96	NA*	270	1.80	0.008	NA	—	0.000	130.00	0.486	0.00	0.000	—	0.000	0.494	46.93	46.93	system operated approx. 92 hrs between 7/31 and 8/8
08/22/96	NA*	270	1.80	0.008	NA	—	0.000	130.00	0.486	0.00	0.000	—	0.000	0.494	52.85	99.78	24-hour per day system operation began 8/8
09/16/96	NA*	320	2.70	0.015	NA	0.00	0.000	—	0.000	—	0.000	61.00	0.346	0.361	256.56	356.34	
10/16/96	NA*	320	2.50	0.014	NA	0.00	0.000	—	0.000	—	0.000	42.00	0.238	0.253	220.98	577.32	
11/19/96	NA*	324	0.95	0.006	0.00	0.00	0.000	—	0.000	—	0.000	22.61	0.130	0.135	158.31	735.63	
12/17/96	NA*	310	0.18	0.001	0.24	0.07	0.000	—	0.000	—	0.000	6.98	0.038	0.040	58.83	794.47	
01/27/97	NA*	321	0.14	0.001	0.00	0.00	0.000	—	0.000	—	0.000	4.81	0.027	0.028	33.39	827.85	
03/27/97	NA**	384	0.00	0.000	NA	0.00	0.000	—	0.000	—	0.000	0.55	0.004	0.004	22.62	850.47	
04/17/97	NA**	721	0.00	0.000	0.00	0.00	0.000	—	0.000	—	0.000	2.89	0.037	0.037	10.24	860.71	
05/21/97	6***	360	0.00	0.000	0.00	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.00	15.46	876.17	
06/10/97	2***	300	0.00	0.000	0.00	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.00	0.48	876.65	
07/21/97	36***	358	0.00	0.000	0.00	0.00	0.000	—	0.000	—	0.000	2.04	0.013	0.013	6.88	883.53	
08/26/97	28***	223	0.00	0.000	0.00	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.00	6.04	889.57	One blower down due to high water level in moisture trap.
09/30/97	27***	221	2.37	0.009	22.00	6.00	0.021	—	0.000	—	0.000	33.68	0.132	0.161	68.15	957.72	One blower down due to high water level in moisture trap.
10/23/97	47***	322	2.47	0.013	62.50	17.05	0.086	—	0.000	—	0.000	95.02	0.542	0.641	60.12	1017.84	Two blowers down due to high water level in moisture trap
11/20/97	47***	213	0.50	0.002	4.10	1.12	0.004	—	0.000	—	0.000	16.36	0.062	0.067	69.68	1087.51	One blower down due to high water level in moisture trap.
12/11/97	47	213	0.50	0.002	4.10	1.12	0.004	—	0.000	—	0.000	16.36	0.062	0.067	40.27	1127.78	
12/29/97	47	520	0.78	0.007	8.00	2.18	0.018	—	0.000	—	0.000	33.68	0.310	0.335	42.29	1170.07	
01/22/98	53	479	2.46	0.020	16.50	4.50	0.034	—	0.000	—	0.000	111.86	0.949	1.003	63.09	1233.15	
02/12/98	NA****	324	0.77	0.004	3.85	1.05	0.005	—	0.000	—	0.000	16.24	0.093	0.103	248.54	1481.70	
03/24/98	53	249	0.44	0.002	3.00	0.82	0.003	—	0.000	—	0.000	7.94	0.035	0.040	32.99	1514.68	
04/27/98	53	170	0.57	0.002	30.50	8.32	0.022	—	0.000	—	0.000	18.40	0.055	0.079	36.71	1551.39	
07/13/98	53	154	1.96	0.005	0.00	0.00	0.000	39.42	0.084	0.00	0.000	0.00	0.000	0.089	63.76	1615.16	
10/07/98	0	278	8.40	0.042	0.00	0.00	0.000	0.00	0.000	0.00	0.000	214.19	1.054	1.096	0.00	1615.16	System modification/repair completed, system reactivated.
10/15/98	0	278	8.40	0.042	0.00	0.00	0.000	0.00	0.000	0.00	0.000	214.19	1.056	1.098	210.77	1825.92	
11/19/98	41	216	4.67	0.018	1.67	0.46	0.002	0.00	0.000	0.00	0.000	403.93	1.543	1.563	812.98	2638.91	
12/29/98	41	148	0.90	0.002	0.00	0.00	0.000	0.00	0.000	0.00	0.000	122.18	0.321	0.323	621.50	3260.40	One blower and air compressor down due to high water.
01/12/99	82	307	3.22	0.018	1.26	0.34	0.002	0.00	0.000	0.00	0.000	1108.41	6.032	6.052	459.46	3719.87	
02/10/99	70	294	0.81	0.004	1.99	0.54	0.002	0.00	0.000	0.00	0.000	39.88	0.207	0.214	31.67	3751.54	

Notes:
* Air sparge compressor not activated due to elevated SVE influent concentrations.
** Air sparge compressor not activated due to improperly sized pressure switch.
*** Air sparge compressor activated, but high water levels in the moisture separators cause frequent compressor shut-down.
**** Air sparge compressor deactivated on 1/28/98 due to lack of vapor recovery from western portion of site.
1) Aliphatics are weighted using a response factor of hexane. (MW = 86.2)
2) Aromatics are weighted using a response factor of o-xylene. (MW=106.16)
3) Analytical data for 7/31/96 is assumed based on results of sampling conducted 8/8/96.
4) Analytical data for 8/22/96 is assumed based on results of sampling conducted 8/8/96.
5) Air flow rate from 10/16/96 assumed for 9/16/96, due to a broken flow meter
6) Beginning 9/16/96 lab analysis was performed by Mitkem Laboratory. Prior to 9/16/96 air analysis performed by NEI/GTEL
7) Mitkem results report total volatile petroleum hydrocarbons, not misc. aromatics and aliphatics.
Total Volatile Petroleum Hydrocarbons are weighted to molecular weight of 100.
8) System modificatons to allow continuous dewatering were conducted on December 11, 1997.
The data for this date was assumed to be the same as November that for November 20, 1997.
Flow rates for this date have been interpolated from 11/20/97 and 12/29/97 data.
9) 4/27/98 TVPH results reported as C5-C12 Aliphatics and C9-C10 Aromatics. Ppmv equivalents have been estimated.
10) The system was found to be inactive on 8/19/98 due to water in the moisture traps and was not restarted. No samples were taken.
11) System modifications and repairs completed on 10/7/98. System reactivated. Influent concentrations assumed to be the same as sampled on 10/15/98.
12) On 10/7/98 the east side flowmeter was found to be inoperable. West and East flowrates were subsequently assumed to be equal for mass removal calculation purposes.
13) A flow rate weighted average was used to calculate the SVE system influent beginning 10/15/98.

ATTACHMENT 4

HISTORICAL WELL GAUGING DATA

Well Gauging Data | Dolphin Mart Site | New London Naval Submarine Base, Groton, CT

Date	DM-1	DM-2	DM-3	DM-4	DM-5	HRP-10	HRP-11	MW-1	MW-2	MW-3	OBG8A
	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater	Depth to Groundwater
07/02/96	6.37	NG	NG	NG	NG	4.65	NG	4.65	3.55	3.12	NG
07/03/96	NG	NG	NG	NG	NG	5.19	NG	4.63	2.86	0.00	NG
07/12/96	NG	NG	NG	NG	NG	5.81	NG	5.01	3.82	1.95	NG
07/16/96	NG	NG	NG	NG	NG	4.33	NG	4.55	2.89	0.74	NG
07/17/96	NG	NG	NG	NG	NG	2.73	NG	4.94	1.63	2.79	NG
07/19/96	NG	NG	NG	NG	NG	4.38	NG	5.21	0.61	0.00	NG
07/22/96	NG	NG	NG	NG	NG	4.54	NG	4.82	1.95	1.17	NG
07/23/96	NG	NG	NG	NG	NG	4.55	NG	4.75	3.33	0.00	NG
07/24/96	NG	NG	NG	NG	NG	4.33	NG	5.22	1.18	0.00	NG
07/25/96	NG	NG	NG	NG	NG	4.46	NG	5.31	NG	NG	NG
07/26/96	NG	NG	NG	NG	NG	4.43	NG	4.79	NG	NG	NG
08/01/96	NG	NG	NG	NG	NG	3.93	NG	4.96	2.20	1.28	NG
08/02/96	NG	NG	NG	NG	NG	4.08	NG	5.24	1.82	1.31	NG
08/05/96	NG	NG	NG	NG	NG	4.35	NG	5.08	NG	1.08	NG
09/04/96	NG	NG	NG	NG	NG	5.43	NG	6.07	4.59	DRY	NG
10/02/96	NG	NG	NG	NG	NG	3.53	NG	5.43	NG	3.86	NG
10/21/96	NG	NG	NG	NG	NG	3.98	NG	NG	NG	NG	NG
11/19/96	1.90	NG	2.06	2.68	5.37	4.15	NG	3.85	3.00	DRY	NG
12/17/96	2.53	NG	1.60	NG	3.67	NG	NG	3.85	2.17	NG	NG
01/27/97	1.91	NG	1.89	NG	4.26	3.29	NG	2.53	2.13	NG	NG
02/18/97	1.93	NG	1.90	2.04	NG	4.04	NG	2.98	2.56	2.28	NG
03/27/97	1.89	2.27	1.86	2.41	4.60	4.04	3.21	2.91	1.86	1.27	NG
04/17/97	NG	NG	NG	NG	NG	5.25	NG	3.48	1.94	1.39	NG
05/21/97	2.04	2.39	2.08	3.08	5.19	4.11	3.43	3.14	2.93	2.44	NG
08/27/97	NG	NG	NG	NG	NG	5.01	4.10	3.60	4.28	DRY	NG
11/21/97	2.26	3.20	2.56	3.33	6.83	4.43	3.77	5.33	3.84	3.06	2.26
02/11/98	1.79	2.63	1.61	1.84	3.87	3.64	3.08	3.23	1.34	1.88	1.47
05/11/98	1.80	1.85	1.50	2.34	2.41	3.65	3.16	1.81	1.99	4.08	0.31
08/17/98	2.70	3.75	3.30	1.25	7.69	5.11	3.99	6.32	4.95	4.96	2.35
11/18/98	2.32	2.88	2.60	3.35	7.46	5.13	3.85	5.74	5.27	3.27	2.30
02/19/99	2.06	2.61	1.88	2.03	4.38	4.15	3.33	2.95	2.59	1.92	0.50

Date	OBG9A Depth to Groundwater	WE-1 Depth to Groundwater	WE-1A Depth to Groundwater	WE-2D Depth to Groundwater	WE-2S Depth to Groundwater	WE-3 Depth to Groundwater	WE-4 Depth to Groundwater	WE-5 Depth to Groundwater	WE-6 Depth to Groundwater
07/02/96	0.82	DRY	DRY	6.56	6.78	8.67	4.24	4.80	3.40
07/03/96	0.89	NG	NG	6.35	6.58	8.69	6.38	4.33	2.30
07/12/96	1.85	NG	NG	6.83	6.96	8.93	6.38	4.98	3.60
07/16/96	0.69	NG	NG	6.24	6.47	8.50	6.27	4.08	2.76
07/17/96	0.00	NG	NG	5.88	6.30	8.62	6.47	3.62	1.72
07/19/96	0.00	NG	NG	5.53	6.18	8.45	NG	3.19	1.08
07/22/96	0.00	NG	NG	6.42	6.45	8.64	3.68	3.73	1.96
07/23/96	0.20	NG	NG	6.33	6.70	8.72	8.72	4.49	2.40
07/24/96	0.00	NG	NG	5.67	6.31	8.45	3.38	3.33	1.49
07/25/96	0.16	NG	NG	NG	NG	NG	NG	NG	2.12
07/26/96	0.00	NG	NG	NG	NG	NG	NG	NG	2.95
08/01/96	NG	NG	NG	6.09	6.39	8.55	3.22	4.06	1.15
08/02/96	0.00	NG	NG	5.73	6.30	8.56	2.96	3.76	0.86
08/05/96	0.00	NG	NG	NG	NG	NG	NG	NG	1.28
09/04/96	NG	NG	NG	7.51	7.39	9.73	5.11	6.23	4.59
10/02/96	NG	NG	NG	5.82	6.41	8.41	3.11	3.96	1.60
10/21/96	NG	NG	NG	NG	NG	NG	NG	NG	2.43
11/19/96	NG	NG	NG	5.89	6.46	8.32	3.53	3.87	2.90
12/17/96	NG	NG	NG	NG	6.10	7.92	2.17	2.96	2.10
01/27/97	NG	NG	NG	5.73	6.24	7.94	3.08	3.26	1.53
02/18/97	NG	NG	NG	5.84	6.32	7.95	3.49	3.21	2.55
03/27/97	NG	5.03	DRY	5.45	6.21	8.08	1.66	3.51	1.15
04/17/97	NG	NG	NG	NG	NG	NG	3.00	3.18	1.30
05/21/97	NG	DRY	DRY	6.11	NG	8.20	3.73	4.07	2.84
08/27/97	2.46	NG	NG	7.03	NG	9.54	4.69	5.77	4.07
11/21/97	0.95	DRY	DRY	6.66	6.97	8.86	7.53	5.29	3.56
02/11/98	1.31	NG	NG	5.49	6.29	8.33	2.14	2.87	1.35
05/11/98	0.98	NG	NG	5.16	6.18	7.91	7.51	2.50	2.02
08/17/98	2.58	NG	NG	7.50	7.53	9.78	7.45	5.81	4.61
11/18/98	1.91	DRY	DRY	7.23	7.62	8.88	8.65	6.15	5.42
02/19/99	1.77	NG	NG	5.72	6.44	8.49	3.49	3.51	2.50

Well Gauging Data NEX Site New London Naval Submarine Base, Groton, CT

Date	ERM-5 Depth to Groundwater/ Product	ERM-6 Depth to roundwater/ Product	ERM-7 Depth to roundwater/ Product	ERM-8 Depth to roundwater/ Product	ERM-9 Depth to roundwater/ Product	ERM-10 Depth to roundwater/ Product	ERM-11 Depth to roundwater/ Product	ERM-12 Depth to roundwater/ Product	ERM-13 Depth to roundwater/ Product
09/16/96	3.82	5.14	5.27	NG	NG	NG	NG	8.38	7.01
10/16/96	NG	4.82	4.75	NG	NG	NG	6.4	8.13	7.15
11/18/96	3.72	4.64	4.93	NG	NG	NG	6.36	8.09	7.13
12/16/96	3.10	4.08	4.21	NG	NG	NG	5.02	7.83	6.55
02/17/97	3.00	4.34	4.29	NG	NG	NG	4.89	7.65	6.03
03/27/97	2.89	4.28	4.19	NG	NG	NG	5.19	7.63	5.98
04/15/97	NG	NG	NG	NG	NG	NG	NG	NG	5.86
04/17/97	2.73	NG	NG	NG	NG	NG	NG	NG	NG
04/24/97	NG	NG	NG	NG	NG	NG	NG	NG	NG
05/21/97	NG	4.72	4.61	NG	NG	NG	6.27	7.81/7.80	6.15
08/28/97	NG	5.29	6.49	NG	NG	NG	7.65	NG	7.24
11/20/97	4.35	5.24	5.35	NG	NG	NG	6.89	8.23	7.84
02/12/98	3.59	4.68	4.71	NG	NG	NG	5.04	7.99	6.71
05/12/98	2.09	2.69	3.32	NG	NG	NG	4.39	7.90	5.23
08/19/98	3.43	5.26	5.19	NG	NG	NG	7.56	8.34/sheen	6.51
11/19/98	4.58	5.80	5.80	NG	NG	NG	7.65	8.22	8.06
02/18/99	3.80	4.74	NG	NG	NG	NG	NG	8.37	NG

grsubbas\123\gr3

Well Gauging Data NEX Site New London Naval Submarine Base, Groton, CT

Date	ERM-14 Depth to roundwater/ Product	ERM-15 Depth to roundwater/ Product	ERM-16 Depth to roundwater/ Product	ERM-17 Depth to roundwater/ Product	ERM-18 Depth to roundwater/ Product	ERM-19 Depth to roundwater/ Product	NEX-1 Depth to roundwater/ Product	OBG-1 Depth to roundwater/ Product	OBG-2 Depth to roundwater/ Product	OBG-4 Depth to roundwater/ Product
09/16/96	6.89	4.30	8.51	5.62	3.65	5.28	NG	NG	NG	NG
10/16/96	6.92	3.94	8.49	5.56	3.96	5.17	NG	NG	NG	NG
11/18/96	7.10/6.91	4.03	8.43	5.53	NG	5.19	NG	NG	NG	NG
12/16/96	6.35	NG	7.8	3.73	NG	4.23	NG	NG	NG	NG
02/17/97	5.89	NG	7.85	4.53	NG	4.18	NG	NG	NG	NG
03/27/97	5.82	NG	7.79	4.87	NG	4.06	5.81	8.12	7.95	7.75
04/15/97	5.7	3.39	7.84	4.84	NG	NG	5.74	NG	7.92	7.75
04/17/97	5.66	3.31	NG	4.67	NG	3.91	NG	NG	7.91	7.78
04/24/97	NG	NG	NG	NG	NG	NG	NG	NG	NG	7.74
05/21/97	6.04/5.99	NG	8.16	5.26	NG	4.46	5.80	7.98	7.81	7.64
08/28/97	7.24/7.01	NG	8.63/sheen	5.77	NG	5.41	6.15	8.22	8.03	7.9
11/20/97	7.63	4.46	8.77	5.77	NG	5.79	6.45	8.43	8.23	8.07
02/12/98	6.59	3.54	8.18	5.14	NG	4.44	5.28	8.19	8.01	7.84
05/12/98	5.09	2.63	7.32	2.98	NG	3.43	5.20	7.88/7.87	7.71	7.51
08/19/98	6.37/sheen	4.02	8.79/8.75	5.83	NG	5.11	5.99	8.13	7.94	7.76
11/19/98	7.80	4.59	9.03/9.00	6.05	NG	6.29	6.31	8.21	8.03	7.91
02/18/99	7.47	4.29	8.00	NG	NG	NG	NG	7.97	7.78	7.26

grsubbas\123\gr3

Well Gauging Data NEX Site New London Naval Submarine Base, Groton, CT

Date	OBG-6 Depth to roundwater/ Product	OBG-7 Depth to roundwater/ Product	OBG-8 Depth to roundwater/ Product	OBG-9 Depth to roundwater/ Product	MW-4 Depth to roundwater/ Product	MW-6 Depth to roundwater/ Product
09/16/96	NG	NG	NG	NG	NG	NG
10/16/96	NG	NG	NG	NG	NG	NG
11/18/96	NG	NG	NG	NG	NG	NG
12/16/96	NG	NG	NG	NG	NG	NG
02/17/97	NG	NG	NG	NG	NG	NG
03/27/97	7.95	5.61	NG	5.54	4.91	4.49
04/15/97	NG	NG	NG	5.54	NG	NG
04/17/97	NG	NG	NG	5.58	NG	NG
04/24/97	NG	NG	NG	NG	NG	NG
05/21/97	NG	5.79	5.60	5.84/5.31	NG	4.85
08/28/97	NG	6.49	NG	6.56/6.45	NG	5.34
11/20/97	NG	7.09	NG	7.06	NG	5.33
02/12/98	NG	5.84	NG	NG	NG	4.92
05/12/98	NG	4.56	NG	4.60/4.58	4.16	3.74
08/19/98	NG	5.83	NG	5.81	NG	5.41
11/19/98	NG	7.22	NG	7.34	6.99	5.64
02/18/99	NG	NG	NG	6.36	6.12	4.72

grsubbas\123\gr3

ATTACHMENT 5

HISTORICAL GROUNDWATER SAMPLING RESULTS

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-1	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	4.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	5	1,000	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	3	<1.0	3	<1.0	<500	6	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	3	<500	3	NS	NS
	11/98	<1.0	<1.0	<1.0	2	3	<400	5	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	1.0	<400	1	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-2	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	4.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	8	<500	8	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	5	<500	5	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	2	**1,500**	2	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	19	<500	19	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	9	<400	9	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	4	<400	4	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-3	3/95	<1.0	<1.0	<1.0	<1.0	7.90	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	7	<500	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	1	<500	1	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	2	<400	2	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	<1.0	<400	<1.0	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-4	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	5	600	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	**2**	<1.0	<1.0	<1.0	3	<500	5	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**800**	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	**700**	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	<1.0	4	1	5	<1.0	**600**	10	NS	NS
	2/99	<1.0	3.0	<1.0	<1.0	1.0	<400	4	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-5	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	6	<500	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**700**	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	**1,200**	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	<1.0	1	<1.0	<1.0	2	<400	3	NS	NS
	2/99	<1.0	3	<1.0	<1.0	<1.0	<400	3	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
HRP-10	3/95	**304**	35.2	257	**1140**	<50	**6,080**	NS	NS	NS
	5/96	**125**	21	54	329	<20	**1,740**	NS	NS	NS
	11/96	**9**	<1.0	65	<1.0	7	<1,000	81	600	<500
	2/97	<1.0	<1.0	<1.0	<1.0	3	<500	3	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	3.0	**800**	3.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**700**	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	1	<500	1	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	2	<400	2	NS	NS
	2/99	<1.0	3	<1.0	<1.0	2	<400	5	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
HRP-11	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	1.0	<1.0	<1.0	3.0	<2.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	<1.0	<400	<1.0	NS	NS
	2/99	<1.0	3	<1.0	<1.0	<1.0	<400	3	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
MW-1	11/96	**3**	<1.0	5	<1.0	<1.0	<1,000	11	1,000	<500
	2/97	<1.0	<1.0	4	<1.0	<1.0	<500	4	<500	600
	5/97	<1.0	<1.0	4	<1.0	<1.0	<500	6	700	760
	8/97	<1.0	<1.0	16	2B	<1.0	**1,000**	18	800	600
	11/97	**2**	<1.0	9	<1.0	<1.0	<500	11	NS	NS
	2/98	<1.0	1	4	<1.0	<1.0	**800**	5	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	**3**	<1.0	1	<1.0	<1.0	<500	4	NS	NS
	11/98	**4**	1	1	1	<1.0	**600**	7	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	<1.0	<400	<1.0	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
MW-2	11/96	**4**	<1.0	14	<1.0	4	<1,000	28	1,200	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	**1,000**	1 B	1,200	1,200
	5/97	<1.0	<1.0	3	<1.0	<1.0	<500	3	500	580
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	**2**	<1.0	3	1	3	<500	9	NS	NS
	2/98	**2**	1	6	<1.0	<1.0	**700**	9	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	3	500	3	NS	NS
	8/98	<1.0	<1.0	<1.0	2	1	<500	3	NS	NS
	11/98	**2**	2	<1.0	2	4	<400	10	NS	NS
	2/99	<1.0	<1.0	2	1	4	**700**	7	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
MW-3	2/97	**36**	23	72	500	5	**2,000**	645 B	3,300	1,600
	5/97	**60**	38	69	**730D**	<1.0	**5,000**	897D	7,900	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	2	3	56	<1.0	<500	61	NS	NS
	2/98	<1.0	<1.0	<1.0	1.0	<1.0	**21,000**	1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)
	11/98	<1.0	<1.0	<1.0	<1.0	<1.0	NS	<1.0	NS	NS
	2/99	**4**	5	39	75	2	**800**	125	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
OBG-8A	3/95	**72**	24.6	25.9	62.4	9.29	<473	NS	NS	NS
	5/96	**12.0**	<1.0	9.0	4.0	<2.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	**3**	25	5	5	<1.0	<500	38	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**9,300**	<1.0	NS	NS
	5/98	<1.0	2	<1.0	2	<1.0	**3,800**	4	NS	NS
	8/98	**2**	<1.0	3	<1.0	1	**2,400**	6	NS	NS
	11/98	1	<1.0	<1.0	1	2	**2,300**	4	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	2	**4,400**	2	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
OBG-9A	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	**3,000**	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	3.0	**11,000**	3.0	2,200	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**3,100**	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	**2,100**	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	3	**1,000**	3	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	3	**800**	3	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	<1.0	**1,300**	<1.0	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-2D(B)	11/96	1	<1.0	<1.0	<1.0	<1.0	<1,000	3	<500	<500
	2/97	**2**	<1.0	<1.0	<1.0	3	<500	5	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	4.0	**11,000**	4.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**1,000**	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	3	**1,500**	3	NS	NS
	8/98	**2**	<1.0	<1.0	<1.0	5	<500	7	NS	NS
	11/98	**2**	<1.0	<1.0	1	3	400	6	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	2	<400	2	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-2S	3/95	**37.9**	24.2	60.3	126.4	21.3	**725**	NS	NS	NS
	5/96	**50**	22	101	144	<10	**1,570**	NS	NS	NS
	11/96	**7**	<1.0	9	4	14	<1,000	34	<500	<500
	2/97	**5**	<1.0	14	3	10	<500	32	500	600
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	**4**	<1.0	<1.0	15	7	<500	26	NS	NS
	5/98	**2**	<1.0	10	<1.0	7	**1,200**	19	NS	NS
	8/98	**2**	<1.0	3	<1.0	6	<500	11	NS	NS
	11/98	<1.0	1	<1.0	<1.0	4	<400	5	NS	NS
	2/99	**2**	<1.0	11	5	8	<400	26	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-3	3/95	<1.0	<1.0	<1.0	<1.0	8.70	<473	NS	NS	NS
	5/96	**2.0**	<1.0	<1.0	<1.0	14.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	<1.0	<1.0	<1.0	<1.0	6	<500	6	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	**220**	**3,000**	220	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	38	<500	38	NS	NS
	2/98	**2**	<1.0	<1.0	<1.0	**160D**	<500	162	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	2	<500	2	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	94D	<500	94	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	36	500	36	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	9	<400	9	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-4	3/95	**267**	29.8	392	**712**	<40	**5,180**	NS	NS	NS
	5/96	**160**	16	301	**617**	<40	**3,680**	NS	NS	NS
	11/96	**41**	1.0	100	2	19	<1,000	166	1,100	500
	2/97	**21**	<1	27	1	17	<500	66	500	700
	5/97	**13**	<1.0	13	<1.0	19	<500	45	700	540
	8/97	**7.0**	<1.0	19	3B	3B	**700**	44	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	**1,300**	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	**600**	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	1	<500	1	NS	NS
	11/98	**5**	<1.0	7	<1.0	4	400	16	NS	NS
	2/99	<1.0	<1.0	<1.0	1	<1.0	<400	1	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-5	11/96	**240D**	410D	**720D**	**4,300E**	27	**9,000**	5,697	12,000	8,900
	2/97	**42D**	10	89D	490D	6	**2,000**	637	2,000	1,200
	5/97	**370**	190	**840**	**3,900D**	<1.0	**4,000**	5,300	11,000	16,000
	8/97	**210D**	<1.0	210D	470DB	63D	**5,000**	953	3,900	2,500
	11/97	**11**	<1.0	2	6	27	**1,100**	46	NS	NS
	2/98	**11**	<1.0	10	14	3	**1,800**	38	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	**1,400**	<1.0	NS	NS
	8/98	**94**	1	30	28	31	**2,400**	184	NS	NS
	11/98	4	<1.0	<1.0	1	37	**1,500**	42	NS	NS
	2/99	**12**	1	6	78	5	**1,000**	102	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-6	11/96	**5**	210D	71D	**630D**	<1.0	<1,000	916	2,000	1,400
	2/97	3	4	8	12	2	<500	29	800	700
	5/97	3	1.0	12	<1.0	<1.0	<500	15	1,200	1,200
	8/97	<1.0	1.0	<1.0	28	<1.0	**1,000**	29	<500	<500
	11/97	2	<1.0	3	2	4	<500	11	NS	NS
	2/98	2	<1.0	5	3	4	500	14	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	**1,000**	<1.0	NS	NS
	8/98	3	4	9	44	<1.0	<500	60	NS	NS
	11/98	2	<1.0	<1.0	2	5	<400	9	NS	NS
	2/99	<1.0	1	3	12	2	400	18	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
[1] = Beginning 5/98, TPH was analyzed using EPA Method 8100M

grsubbas\wp\gr3.43

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-5	3/95	**967**	431	390	1,340	<100	NS	3,295.1	430	8,250
	5/96	112	6	34	28	<10	NS	196	159	554
	11/96	**370D**	14	33	61D	<1.0	3,000	480	1,100	1,600
	2/97	**1,100**	1,100	580	1,600	<50	3,000	4,440 B	3,900	9,100
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	**730**	250	870	620	<10	2,300	2,470	NS	NS
	2/98	**310**	460	300	710	<10	5,400	1,780	NS	NS
	5/98	**790**	280	1,200	4,900	<100	9,200	7,170	NS	NS
	8/98	130	16	330	1,100	<10	2,200	1,576	NS	NS
	11/98	140	8	32	75	<1.0	4,200	255	NS	NS
	2/99	56	2	2	3	2	1,900	65	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-6	5/96	15	<1.0	<1.0	<1.0	<2.0	NS	35	63	<473
	11/96	**610**	230	770	2,400E	<40	5,000	4,054	500	7,800
	2/97	**430D**	21	300	1,000D	<10	2,000	1,763 B	2,200	4,800
	5/97	**430D**	21	640D	2,300D	<1.0	1,000	3,391D	1,500	6,700
	8/97	**470**	90	650	2,000	<1.0	2,000	3,210	3,500	6,200
	11/97	**250D**	23	260D	530D	<1.0	<500	1,063	NS	NS
	2/98	97D	13	110D	240D	<1.0	<500	460	NS	NS
	5/98	21	4	28	78	<1.0	<500	131	NS	NS
	8/98	63	8	170D	<190D	<1.0	800	431	NS	NS
	11/98	1	<1.0	3	<1.0	<1.0	<400	4	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	2	<400	2	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-7	5/96	5	<1.0	<1.0	<1.0	<2.0	NS	8	38	<473
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	4	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	1	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-8 (destroyed)	3/95	109	11.5	272	157	<50	NS	665.4	464	2,350
	5/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-9 (destroyed)	5/96	<1.0	<1.0	<1.0	<1.0	2	NS	4	3,310	<473
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-11	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	3	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	2	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-12	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	NS	1	27	<473
	5/96	1	2	7	14	<2.0	NS	61	4,300	1,390
	11/96	<1.0	2	<1.0	9	<1.0	3,000	16	7,300	6,700
	2/97	<1.0	1	2	9	<1.0	15,000	13	4,800	1,300
	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	4	<1.0	7,100	4	NS	NS
	2/98	<1.0	<1.0	<1.0	1	<1.0	23,000	1	NS	NS
	5/98	<1.0	<1.0	2	2	<1.0	5,400	4	NS	NS
	8/98	<5.0	<5.0	<5.0	<5.0	<5.0	5,200	<5.0	NS	NS
	11/98	<1.0	<1.0	<1.0	2	<1.0	5,100	2	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	<1.0	1,000	<1.0	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-13	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	NS	534	50	<473
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	NS	9	<100	<473
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	2	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	1	<1.0	<500	1	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-14	3/95	**292**	4,880	8,190	6,020	<2.0	NS	19,995	4,840	3,670
	5/96	**305**	5,670	1,250	8,350	<2.0	NS	22,543	7,290	3,890
	11/96	**270**	8,300D	1,700D	11,000D	<25	7,000	21,270	12,000	30,000
	2/97	140	4,500D	980	7,100	<100	60,000	12,840	20,000	20,000
	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	8/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/97	40	2,300D	700D	2,500D	<1.0	4,600	5,540	NS	NS
	2/98	<1.0	930	210	2,800	<1.0	28,000	3,940	NS	NS
	5/98	80	2,200	690	5,400	<1.0	11,000	8,370	NS	NS
	8/98	**270**	5,900	1,600	16,000	<100	24,000	23,770	NS	NS
	11/98	<50	1,000	730	7,300	<50	16,000	9,030	NS	NS
	2/99	<100	420	160	5,300	<100	20,000	5,880	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-15	11/96	**280**	760	330	1,100	<40	1,000	2,517	2,300	4,500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	210	630	240	120	<10	<500	1,200	NS	NS
	2/98	8	9	4	25	<1.0	600	46	NS	NS
	5/98	**1,100**	2,700	810	3,200	<50	11,000	7,810	NS	NS
	8/98	**1,000**	2,200	1,100	3,600	<100	5,900	7,900	NS	NS
	11/98	150D	270D	280D	1,300D	<1.0	3,100	2,000	NS	NS
	2/99	38	64	48	170	1	600	321	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-16	11/96	37	<2.0	13	16	30	<1,000	68	4,400	2,000
	2/97	56D	<1.0	16	34	27	6,000	136	11,000	1,400
	5/97	34	<1.0	20	42	11	26,000	107	60,000	2,000
	8/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/97	5	<1.0	7	30	<1.0	15,000	42	NS	NS
	2/98	8	<1.0	3	15	6	25,000	32	NS	NS
	5/98	25	<1.0	9	18	13	4,800	65	NS	NS
	8/98	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/98	LP	LP	LP	LP	LP	LP	LP	LP	LP
	2/99	12	<1.0	7	29	9	57,000	57	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-17	11/96	10	<1.0	<1.0	<1.0	9	<1,000	11	600	600
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	1,000	<1.0	500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	1,500	<500
	8/97	12	<1.0	<1.0	<1.0	<1.0	1,000	12	1,000	500
	11/97	2	<1.0	<1.0	<1.0	<1.0	<500	2	NS	NS
	2/98	3	<1.0	<1.0	<1.0	<1.0	<500	3	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	13	<1.0	<1.0	<1.0	3	900	16	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-19	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	1	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<10	<10	<10	13	<10	<500	13	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS
FD-1	5/98	210	3	140	29	66	48,000	448	NS	NS
	8/98	160	<10	55	<10	140	3,300	355	NS	NS
	11/98	42	<5.0	5	<5.0	220	9,000	267	NS	NS
	2/99	<50	<50	<50	<50	780	38,000	780	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
FD-2	5/98	63	<1.0	<1.0	3	31	14,000	97	NS	NS
	8/98	62	1	3	<1.0	36	3,300	102	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	4	4,000	4	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	25	5,000	25	NS	NS
FD-3	5/98	<1.0	<1.0	<1.0	<1.0	9	<500	9	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	4	<600	4	NS	NS
	11/98	<1.0	<1.0	<1.0	<1.0	3	<1,300	4	NS	NS
	2/99	<1.0	<1.0	<1.0	<1.0	10	<400	10	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
MW-4	2/97	29	1	<1.0	3	<1.0	NS	33	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	15	2	<1.0	<1.0	<1.0	1,000	17	NS	NS
	8/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/98	**490**	3,000	280	3,100	<50	NS	6,870	NS	NS
	2/99	<250	6,500	470	6,500	<250	8,800	13,470	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
MW-6	2/97	<1.0	9	<1.0	<1.0	<1.0	NS	9	NS	NS
	5/97	18	<1.0	2	8.0	<1.0	<500	28	<500	<500
	8/97	35D	1.0	<1.0	8.0	<1.0	<500	46	<500	<500
	11/97	6	<1.0	<1.0	3	<1.0	<500	9	NS	NS
	2/98	8	<1.0	<1.0	3	<1.0	<500	11	NS	NS
	5/98	1	<1.0	<1.0	<1.0	<1.0	<500	1	NS	NS
	8/98	170	8	13	62	<2.0	<500	253	NS	NS
	11/98	5	<1.0	<1.0	2	<1.0	<400	7	NS	NS
	2/99	71	<1.0	<1.0	3	3	<400	77	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
NEX-1	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	NS	7	35	<143
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	NS	8	<122	<143
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	2	11	4	34	<1.0	<500	57	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	3.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-1	5/97	**480**	3,300D	1,100D	10,000D	540	110,000	15,420	260,000	49,000
	8/97	**1,600**	6,200	1,700	12,000	810	220,000	**22,310**	580,000	56,000
	11/97	**1,600**	8,800	2,300	16,000	38,000	21,000	66,700	NS	NS
	2/98	**1,400**	7,100D	2,200	15,000D	24,000D	160,000	49,700	NS	NS
	5/98	**LP**	**LP**	**LP**	**LP**	**LP**	**LP**	**LP**	**LP**	**LP**
	8/98	**340**	1,400	790	5,000	1,600	25,000	9,130	NS	NS
	11/98	**13,000**	**51,000**	15,000	**110,000**	1,000	86,000	190,000	NS	NS
	2/99	**2,500**	16,000	1,600	15,000	4,600	40,000	39,700	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-2	5/97	77	280	530	9,800D	290	87,000	10,977	120,000	44,000
	8/97	**470**	410	1,100	11,000	830	180,000	13,990	99,000	75,000
	11/97	**370**	380	960	9,200	40,000	23,000	50,910	NS	NS
	2/98	**410**	340	680	7,900	26,000D	120,000	35,330	NS	NS
	5/98	**570**	<1.0	650	6,300	15,000	33,000	22,520	NS	NS
	8/98	**330**	620	760	5,300	27,000D	25,000	34,010	NS	NS
	11/98	<250	300	480	5,600	2,000	25,000	8,380	NS	NS
	2/99	<100	500	220	4,100	1,600	39,000	6,420	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-4	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	NS	<1.0	NS	NS
	5/97	<1.0	<1.0	<1.0	2	<1.0	6,000	2	3,100	<500
	8/97	<1.0	<1.0	<1.0	<1.0	4.0	1,000	4.0	3,500	<500
	11/97	<1.0	3	<1.0	7	8	NS	18	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	5	4,100	5	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	5	6,100	5	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	<250	3,100	1,200	11,000	<250	160,000	15,300	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-7	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	900	<1.0	NS	NS
	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-8 (destroyed)	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/99	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-9	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	8/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/97	**490**	4,800	2,100	16,000	<200	24,000	23,390	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	LP	LP	LP	LP	LP	LP	LP	LP	LP
	8/98	56	280	250	2,300	23	NS	2,909	NS	NS
	11/98	31	97	120	1,200	<5.0	5,800	1,448	NS	NS
	2/99	77	190 D	32	340 D	1	2,900	640	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - February 1999
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)[1]	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
VEA-4	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<600	<1.0	NS	NS
	11/98	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)
	2/99	<1.0	<1.0	<1.0	<1.0	<1.0	<400	<1.0	NS	NS
VEA-7	8/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	11/98	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)	NS (dry)
	2/99	<1.0	<1.0	<1.0	<1.0	1	<400	1	NS	NS
VEA-14	8/98	<10	<10	410	1,000	<10	<500	1,410	NS	NS
	11/98	<1.0	<1.0	16	44	<1.0	1,800	60	NS	NS
	2/99	<1.0	<1.0	21	23	<1.0	5,000	44	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics
L P = Liquid-phase petroleum present; well could not be sampled
[1] = Beginning 5/98, TPH was analyzed using GPA Method 8100M

OPERATIONAL SUMMARY

DOLPHIN MART AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since June 29, 1996. As of February 10, 1999, eight (8) horizontal vapor extraction trenches (VET-1, VET-2, VET-3, VET-4, VET-5, VET-6, VET-7 and VET-8) were operating. The soil vapor extraction (SVE) system is currently operating at a flow rate of approximately 346 standard cubic feet per minute (scfm). The air sparge system has been deactivated since January 30, 1999.

A site map has been included as **Figure 1**. The site monitoring forms for operation and maintenance (O&M) conducted during the month of February 1999 are included in **Attachment 1**. A weekly break-down of the month's field activities has been included as **Attachment 2**.

Mass Removal - The total hydrocarbon mass removal rate, based on the SVE system influent sample collected on February 10, 1999, was 0.055 lbs/hour. Based on the average mass removal rate from January 12, 1999 to February 10, 1999, approximately 16.4 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of February 10, 1999, was approximately 2,153 lbs. The system database has been included in **Attachment 3**. Mass removal graphs have been included as **Figures 3A, 3B and 4**. Based on the hydrocarbon mass removal rate, no exceedance of Connecticut Department of Environmental Protection (CTDEP) air quality guidelines was observed.

Carbon Usage - No carbon change-out occurred during the month of February, 1999. The last vapor phase carbon change-out at the site occurred August 27, 1997. No liquid phase carbon change-out has occurred to date.

Discharge Monitoring Sampling - Air discharge sampling for the system was conducted on February 10, 1999. Water discharge sampling was conducted at the site on February 19, 1999.

Monitoring Well Gauging - A round of site monitoring well gauging was conducted on February 19, 1999 during the quarterly groundwater sampling event. Depth to groundwater at the site ranged from 0.50 feet in OBG-9A to 8.49 feet in WE-3. Historical well gauging data has been included in **Attachment 4**.

Monitoring Well Sampling - A round of site monitoring well sampling was conducted on February 19, 1999. The February Quarterly Groundwater Sampling Report will be issued under separate cover. The historical groundwater sampling results have been summarized in **Attachment 5**.

Additional Activities – None.

NEX AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since July 31, 1997. As of February 18, 1999, 17 vapor extraction points (VEA-12 through VEA-16, VEA-18 through VEA-20, VEB-4, and VEB-8 through VEB-15) and 19 air sparge points (SPA-30 through SPA-37, SPB-14, SPB-16, and SPB-19 through SPB-27) were operating. As of February 19, 1999, the soil vapor extraction (SVE) system was operating at a flow rate of approximately 294 standard cubic feet per minute (scfm). During the month of February 1999, the air sparge system injected air at a flow rate of approximately 70 scfm. Approximately 220,082 gallons of water had been extracted, treated, and discharged by the NEX system as of February 10, 1999.

A site map has been included as **Figure 2**. The site monitoring forms for operation and maintenance (O&M) conducted during the month of February 1999 are included in **Attachment 1**. A weekly break-down of the month's field activities has been included as **Attachment 2**.

Mass Removal - The total hydrocarbon mass removal rate, based on the SVE system influent sample collected on February 10, 1999, was 0.21 lbs/hour. Based on the average mass removal rate from January 12, 1999 to February 10, 1999, approximately 32 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of February 10, 1999, was approximately 3,752 lbs. The system database has been included in **Attachment 3**. Mass removal graphs have been included as **Figures 5A, 5B and 6**. Based on the hydrocarbon mass removal rate, no exceedance of CTDEP air quality guidelines was observed.

Carbon Usage – The liquid phase granular activated carbon was changed-out on February 25, 1999. The last vapor-phase carbon change-out occurred September 8, 1997.

Discharge Monitoring Sampling - Air and water discharge sampling for the system was conducted on February 10, 1999 and February 26, 1999 respectively.

Monitoring Well Gauging - A round of site monitoring well gauging was conducted on February 18, 1999. Depth to groundwater at the site ranged from 3.80 feet in ERM-9 to 8.37 feet in ERM-12. A sheen was detected in monitoring wells ERM-12 and ERM-16.

Monitoring Well Sampling - A round of site monitoring well sampling was conducted on February 18, 1999. The February Quarterly Groundwater Sampling Report will be issued under separate cover. The historical groundwater sampling results have been summarized in **Attachment 5**.

Additional Activities – Between February 16 and February 18, 1999, system optimization/balancing was performed at the NEX site. The optimization/balancing was completed in order to focus the air sparging and SVE remedial systems on the areas with the highest concentrations of dissolved VOCs in groundwater. The air sparge and SVE points were left activated only in areas that had historically exceeded the applicable remediation standards or contained separate phase hydrocarbons. The areas of

concern included the former UST and fuel dispensing area (near MW-14 and MW-9), the current UST and fuel dispensing area (near OBG-1 and OBG-2), and the area surrounding ERM-16. Additionally, on February 16, 1999 a malfunctioning sump pump probe was replaced and on February 18, 1999, a malfunctioning SVE system air flow meter was repaired.

On February 24 and February 25, 1999, IT Corporation personnel welded angle iron to additional roadbox covers at the site. The remaining six roadbox covers will be modified during March 1999.

On February 25, 1999, carbon was replaced in two of the 200 lb. water treatment GAC units. Additionally, twelve spent, vapor phase, GAC units were removed from the site and disposed by a carbon disposal service company.

FIGURES