THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

May 5, 1999

Bob Haslam, Sites Manager
Vermont Sites Management Section
103 South Main Street
Waterbury, Vermont

and

Suzanne Masland
714 Pero Hill Road
Thetford Center, Vermont 05075
(802)785-4146

Re: Site Investigation at the Masland Property, Calais, Vermont.
SMS Site #96-1945 EPA VTP# 000009038
Latitude 44° 18' 43" N Longitude 72° 27' 20"E
JCO # 1-1391-1

Dear Mr. Haslam and Ms. Masland:

In accordance with the approved Work Plan, dated March 30, 1999, and revisions dated March 31 and April 2, the investigation of subsurface petroleum contamination at the Masland property on Gray Road in Calais, Vermont has been completed.

In summary, soil contamination was observed near the former underground storage tank with photoionization detector headspace concentrations above 10 parts per million and with concentrations of 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, and naphthalene orders-of-magnitude above the Vermont Groundwater Enforcement Standards (VGES). These contaminated soils are apparently limited to an area of approximately 60 square feet and a volume of less than three cubic yards. The depth of contaminated soils is generally two to four feet below ground surface. The area contaminated above VGES is limited to the vicinity of the southeast corner of the residence. The highest reported concentration of total petroleum hydrocarbons in soils was 28,000 milligrams per kilogram (mg/kg). Ethylbenzene, toluene, and xylenes were also detected in the soils at concentrations below VGES.

Naphthalene and 1,2,4-trimethylbenzene were detected in soils collected adjacent to the bedrock water supply well. The reported concentrations were below Vermont Groundwater Enforcement Standards. It is likely that the presence of these compounds is due to migration of dissolved contamination from the former underground storage tank towards the water supply well. The observed concentrations suggest that there is insufficient contamination remaining in the soils to contaminate the well above drinking water standards.

A layer of red clear petroleum product 0.47 feet thick (approximately 0.7 gallons) was identified in the bedrock water supply well on March 30, 1999. The product was removed by

bailing on March 31. No measurable additional product entered the well between March 31 and April 21. The upper portion of the column of well water still contains petroleum droplets and sheen.

No volatile organic compounds were detected during laboratory analyses of well water samples collected prior to, and after, a water treatment system in the house, with the exception of 6 ug/L chloromethane on one occasion. The Vermont Groundwater Enforcement Standard for chloromethane is 30 ug/L. Chloromethane is not a typical component of fuel oil. It is a common contaminant derived from the reaction of methyl alcohol used for sample bottle cleaning with hydrochloric acid used for sample preservation.

No atmospheric receptors, underground utilities, or wetlands appear to be threatened by the observed contamination at this time. The probable source of the contamination is a release of fuel oil from an on-site home heating oil underground storage tank (UST) discovered in January 1996. The UST was closed in September 1996. Non-aqueous phase liquids (NAPL) were reported below the UST during its closure.

Photoionization detector (PID) headspace measurements and analytical results suggest that it is most likely that the oil migrated through cracks and voids in the weathered bedrock to the water supply well, rather than over the top of the rock through the soils. The casing of the water supply well extends six feet into the rock, and the oil likely entered the well through fractures in the rock below the casing. There could still be residual oil left in the fractures and void spaces in the rock. The deep fracture at 185 feet which supplies the well with water is apparently not contaminated. Any contamination in the rock appears to be limited to the weathered zone.

It is possible that the residual oil in the rock will continue to recontaminate the well, either by flowing into the well, or by contaminating snow melt and rainwater which passes by it on the way to the well. The recontamination would continue at decreasing levels until all the residual oil is gone. Under natural conditions this could take a few years or a few decades. This natural degradation and cleaning may have already happened.

Recommendations for the first phase of corrective action include the following three tasks: Excavation and offsite treatment or disposal of the soils containing petroleum contamination above VGES; purging of the contaminated water in the water supply well and cleaning of the water supply well bore; and quarterly monitoring of water quality in the well for one year. Additional phases of corrective action may be necessary if the well is re-contaminated after cleaning.

If the well collects dissolved contamination during the year of monitoring, but not a pool of oil, then the well casing should be extended or a new well with extended casing drilled.

If oil pools in the well during the year of monitoring, a hot water/steam flood should be used to remove the mobile oil from the rock. In addition, either the well casing should be extended on the existing well or new well with extended casing should be drilled.

Treatment of the water prior to use should continue until repeated tests demonstrate that the contamination is no longer entering the water supply.

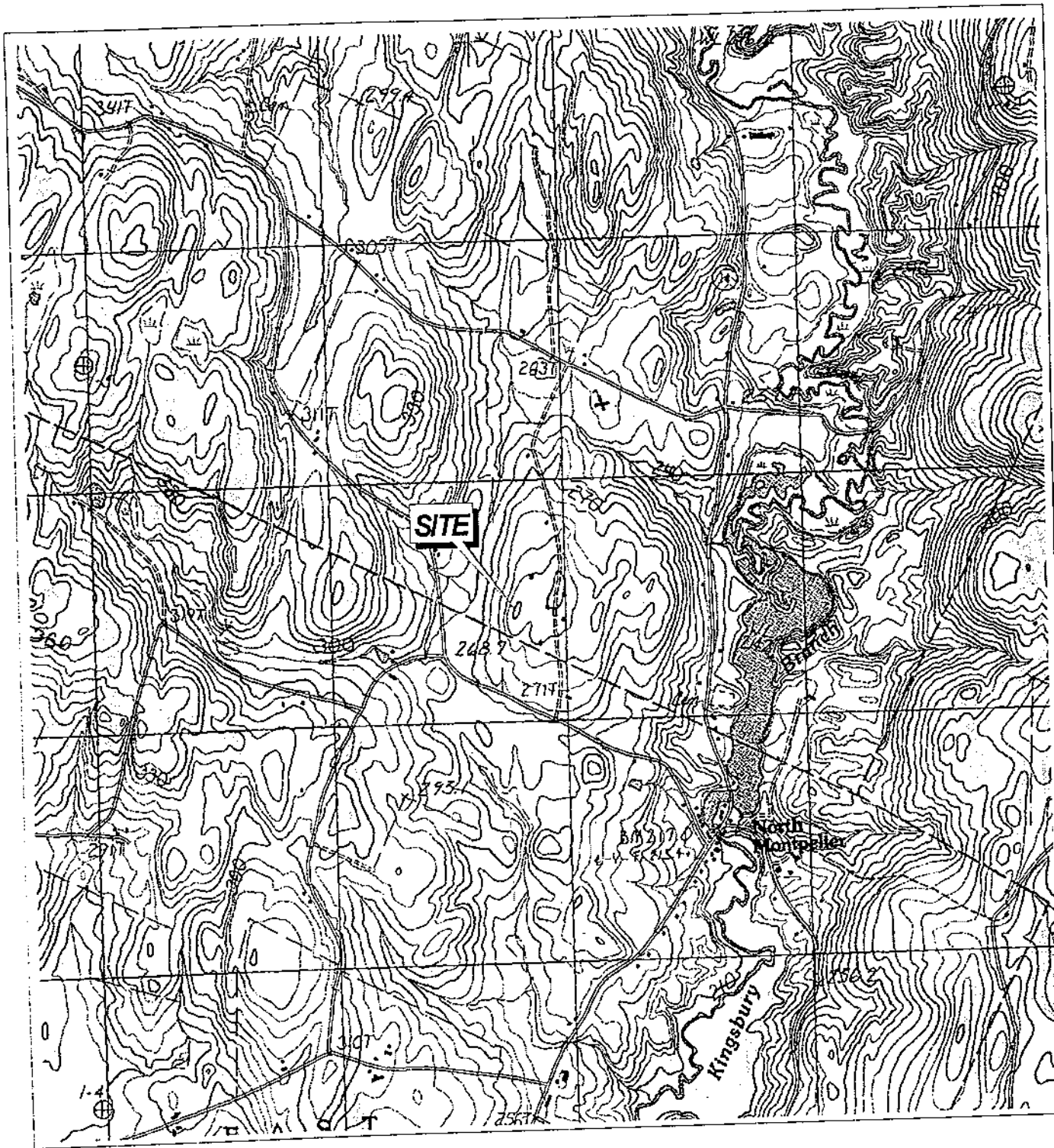
1.0 INTRODUCTION AND BACKGROUND

The Masland property (the Site) is located on Gray Road in Calais, Vermont, approximately 500 feet north of the Calais/East Montpelier Town line (Figure 1). This report describes the results of an investigation to evaluate the nature and extent of petroleum contamination first identified on the Site on January 22, 1996. The information provided in this introduction is based upon review of Vermont Sites Management Section Records, and upon personal communication with the well driller and with the Site owner, Suzanne Masland.

The Site is approximately 10.5 acres, with a 1,300 square foot residence (see Figure 2). The building is approximately nineteen years old, and is a two story wood and cinder block foundation construction type, with a poured concrete slab foundation. The plumbing entrances for the building are poured into the slab. The residence uses a bedrock water supply well and on-site sewage disposal system. The water supply well is located approximately nine feet south of the residence. The well (#140) was drilled in 1980, is 205 feet deep, has 12 feet of casing, and has a drillers' yield of 10 gallons per minute. Depth to bedrock is reported to be six feet at the well, and is less than six feet over most of the Site. Water bearing fractures were reported by the drillers (Johnson's Artesian Well Drilling, Montpelier, Vermont) at 185 feet below ground surface. The driller's yield for the well is 10 g.p.m. The rock was characterized as soft black shale. The residence is heated by a fuel oil furnace using #2 fuel oil. Prior to September 1996 the fuel oil was stored in a 275 gallon tank buried near the east wall of the residence. An inside oil storage tank has been used from September 1996 to the present.

On January 18, 1996, the occupants discovered a stains on the ground surface in the vicinity of the underground storage tank (UST). A sample of water from the well was collected and analyzed by the State of Vermont on January 22, 1996. The water contained 22-23 micrograms per liter (ug/L) xylenes, 5 ug/L ethylbenzene, and 369-449 ug/L total volatile hydrocarbons. Bob Haslam, of the Vermont Sites Management Section (SMS), requested the installation of a water treatment system on January 23, 1996.

The water supply well was purged for three days by running the well pump and disposing of the water onto the ground. A well water sample collected and analyzed by the State of Vermont on January 25, 1996 did not contain any detectable volatile organic compounds.

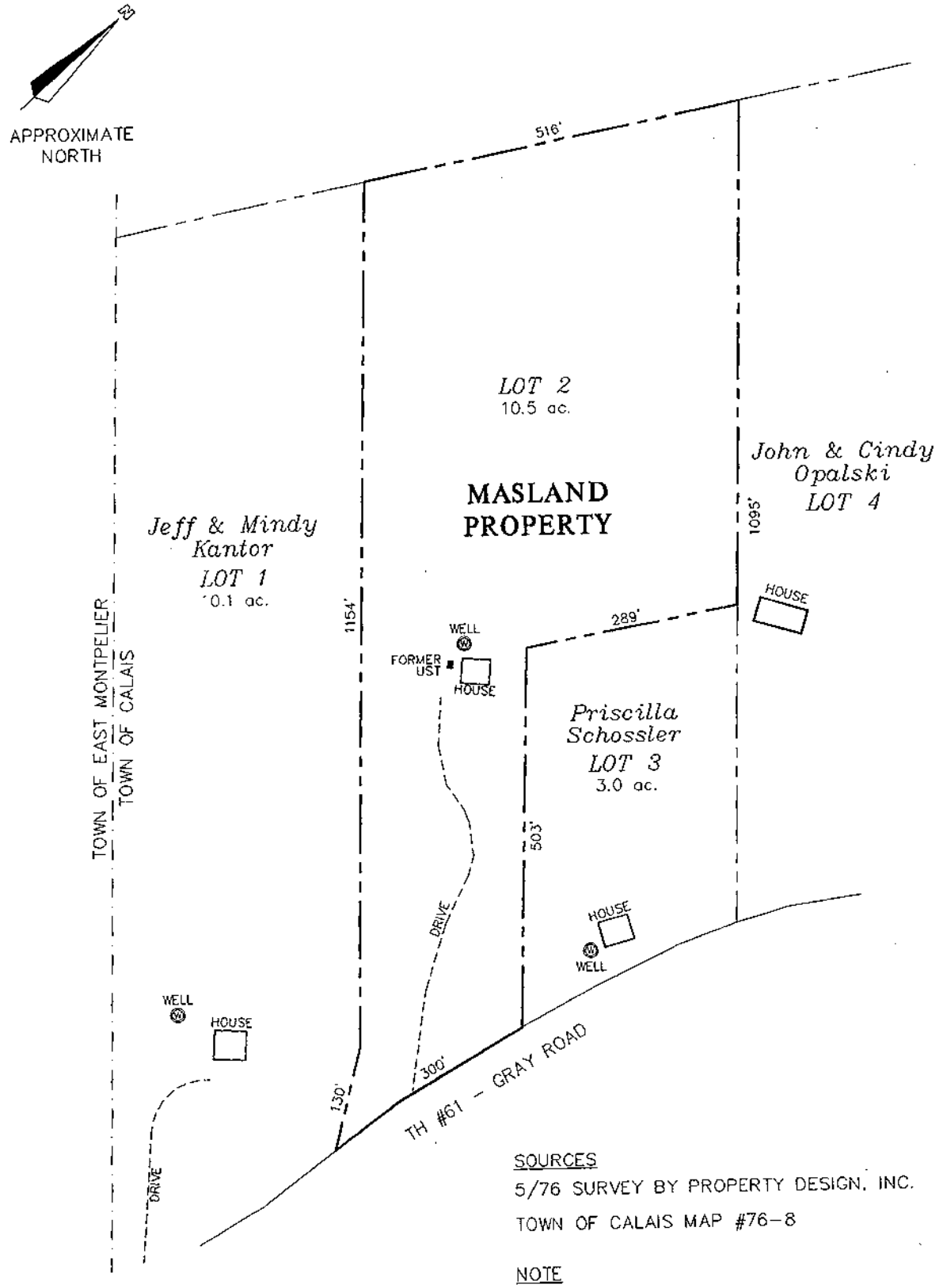


BASE MAP: USGS 7.5' QUAD: PLAINFIELD, VERMONT PROVISIONAL EDITION 1986

FIGURE 1: SITE LOCATION MAP
VERMONT SMS SITE #96-1945
MASLAND RESIDENCE, CALAIS, VT

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
100 STATE STREET MONTPELIER, VT 05602

PROPERTY.dwg



SOURCES

5/76 SURVEY BY PROPERTY DESIGN, INC.

TOWN OF CALAIS MAP #76-8

NOTE

ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE

FIGURE 2: PROPERTY MAP
VERMONT SMS SITE #96-1945
MASLAND RESIDENCE, CALAIS, VT

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
100 STATE STREET MONTPELIER, VT 05602

DATE: 5/4/99 PROJECT: 1-1391-1
DRAWN BY: TJK SCALE: NONE

The UST was put out of service by Irving Oil on September 26, 1996. One to two feet of soils containing oily non-aqueous phase liquid (NAPL) were found in the excavation during the attempted removal of the UST. An estimated volume of seven to fourteen cubic yards of petroleum contaminated soils were excavated by Bert French Excavating during the following week. The excavation was filled with crushed stone and sand, covered by a thin layer of topsoil.

The contaminated soils were treated on-site in a polyencapsulated stockpile approximately 150 feet north-northeast of the residence (see Figure 3). The stockpile was spread in a thin layer on the ground surface during the summer of 1998.

Ms. Masland reports that odors were still present in the vicinity of the well, and in the well water prior to the treatment system, during the summer of 1997 and of 1998. Furthermore, she reports that the odors increase after periods of rainfall, and were often not present during dry periods. She also recalls checking the well water for odors at least once during the spring of 1997 or 1998, and not detecting odors at that time.

Because of the noted petroleum odors; and the need for further information regarding the degree of contamination at the Site; Bob Haslam, Site Manager with the Waste Management Division's Site Management Section (SMS) suggested a site investigation be performed to investigate the nature and extent of contamination. The Johnson Company's Work Plan, dated March 30, 1999, and its amendments dated March 31 and April 2, were approved via electronic mail by Bob Haslam on March 31 and April 5, 1999.

2.0 SITE INVESTIGATION

The investigation consisted of the following tasks:

1) A file review of the Site, including property ownership, review of water supply well data, and review of SMS Site files.
2) Soil coring, soil screening for volatile organic compound (VOC) vapors, and soil sampling and analysis for petroleum-related aromatic hydrocarbons at locations near the UST and near the water supply well.
3) Bailing non-aqueous phase liquids (NAPL) from the well, and swabbing it with sorbent socks. Measurement of water and NAPL levels in the well.
4) Collection of well water samples for laboratory analysis, both before and after the water treatment system.
5) A receptor survey, which included identification of potential sensitive receptors (indoor air, surface water, subsurface systems, wetlands, physical contact, and water supply wells) and a qualitative determination of the risk to those receptors.

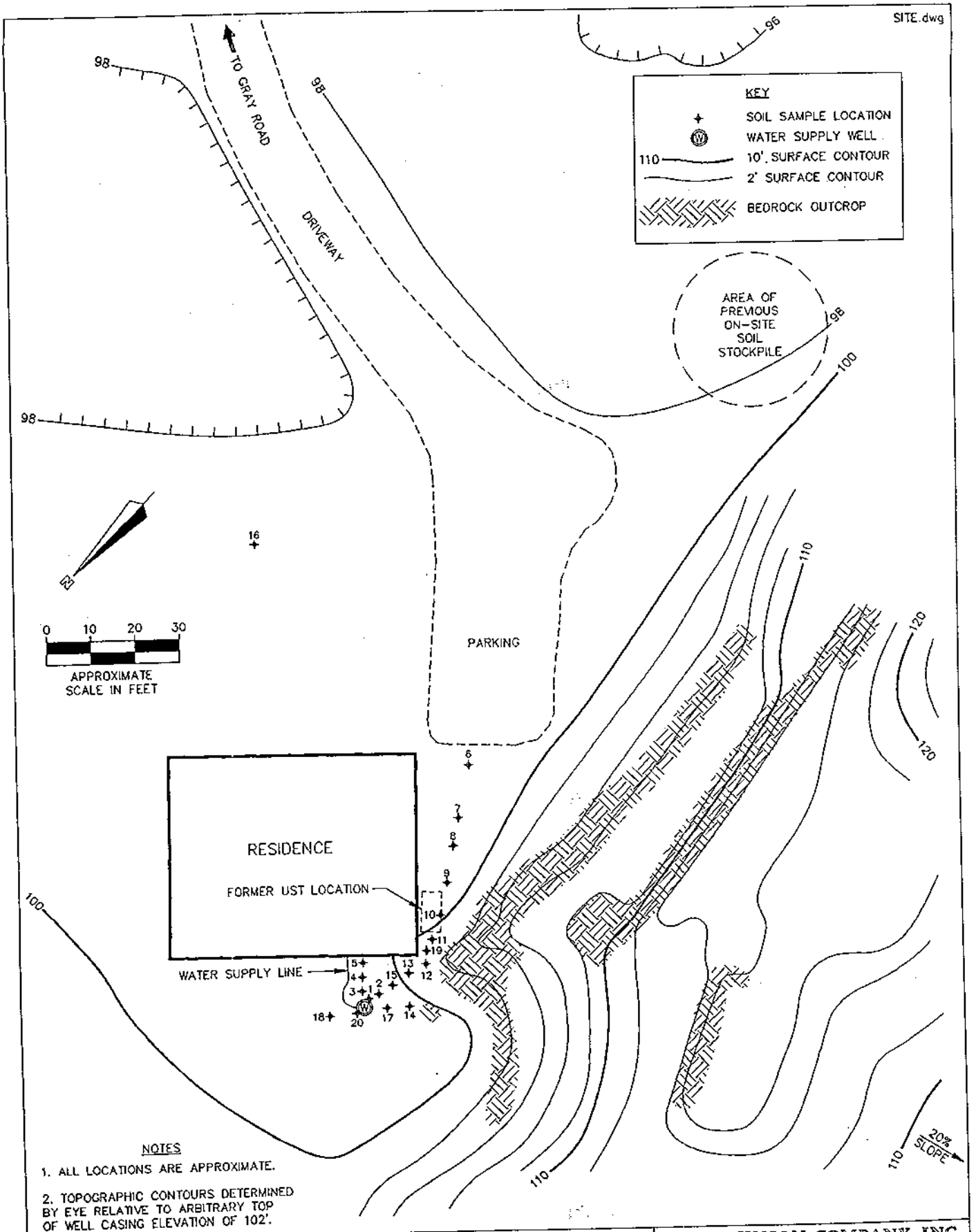


FIGURE 3: SITE SKETCH
VERMONT SMS SITE #96-1945
MASLAND RESIDENCE, CALAIS, VT.

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
100 STATE STREET MONTPELIER, VT 05602

DATE: 4/23/99 PROJECT: 1-1391-1
DRAWN BY: TJK SCALE: 1"=~30'

2.1 FILE REVIEW

A review of the deeds at the Calais Town Clerks Office indicated that the property currently comprised as the Site is a 10.5 acre lot originally subdivided by P. and F. Maunsell in October 1976 (see Figure 2). The lot was sold by the Maunsells to G. and J. Mackinney, who sold it to Robert and Suzanne Richert on May 24, 1980. Robert Richert sold the lot to Suzanne Sheldon on April 26, 1994. Suzanne Sheldon's current legal name is Suzanne Masland.

A review was performed of the SMS Site #96-1945 files on March 29, 1999. The contents of the files are summarized in the introduction and background section of this document.

A visual inspection of the Site and surrounding area was used to identify nearby water supply wells. Both of the adjoining properties are apparently served by private water supply wells located approximately 500 feet from the former UST and the Masland water supply well. A telephone interview was conducted with Rick Purchase of Johnson's Artesian Well Drilling. Mr. Purchase drilled the Masland well.

The United States Fish and Wildlife Service, National Wetland Inventory map was reviewed to determine if significant wetlands are mapped near the Site. There are no mapped wetlands within 1,000 feet of the Site based upon the 1977 Plainfield 15 minute quadrangle map.

2.2 SOIL AND GROUNDWATER INVESTIGATION

2.2.1. Soil Coring/Overburden Characterization

Twenty soil cores were advanced to refusal utilizing a hand auger. Most of the soil cores were collected on April 1, 1999, when the sky was partly cloudy, the air temperature was approximately 55°F, and the wind was 0-5 mph. At each of the 20 core locations, soils were sampled at one foot intervals for stratigraphic characterization and screening for VOCs using a Thermo Environmental Model 580B Organic Vapor Meter photoionization detector (PID) equipped with a 10.6 eV lamp. The PID was calibrated each day prior to use with 97 parts per million (ppm) isobutylene calibration gas. The results of the PID headspace analysis are provided in Table 1. Copies of field notes are included in Attachment 1. The locations of the soil cores are shown on Figure 3.

A soil sample (S19) was collected for laboratory analysis from the area exhibiting the highest PID headspace readings. The sample was analyzed by Scitest Laboratories of Randolph, Vermont using EPA Method 8021B for VOCs and EPA Method 8100 for total petroleum hydrocarbons as diesel fuel (TPH). Several volatile organic compounds were detected including toluene (750 ug/L), ethylbenzene (1,600 ug/L), xylenes (7,000 ug/L), 1,3,5-trimethylbenzene (8,100 ug/L), 1,2,4-trimethylbenzene (13,000 ug/L), and naphthalene (5,500 ug/L).

Table 1
Summary of Masland Soil Headspace Photoionization Detector Measurements

Soil Core ID	*Depth (fbgs)*	*PID Headspace (ppmV)*	*Depth to Water (fbgs)*	*Depth to Refusal (fbgs)*	*Soil Description*
S1	0-1	2.6	3.3	3.8	Brown, moist to wet, silt and clay
	1-2	0.7			
	2-3	4.0			
	3-3.8	2.5			
S2	0-1	4.0	3.5	4.1	Brown to grey, moist, silt some clay over grey, moist to wet silt, some fine sand, little gravel, pebbles. Mottles at 1.8 fbgs.
	1-2	4.1			
	2-3	4.5			
	3-4	4.4			
	4-4.1	2.7			
S3	0-1	4.3	Not seen	3.2	Brown to grey, moist, silt some clay over grey, moist to wet silt, some fine sand, little gravel, pebbles. Mottles at 1.6 fbgs.
	1-2	3.3			
	2-3	4.5			
	3-3.2	2.6			
S4	0-1	4.4	0.7	2.5	Brown to grey, moist, silt some fine sand over grey, moist to wet silt, some fine sand, little gravel, pebbles.
	1-2	4.9			
	2-2.5	2.5			
S5	0-1	4.9	3.85	4.0	Brown to grey, moist, silt some fine sand over grey, moist to wet silt, some fine sand over black micaceous fine sand @ 3.0 fbgs.
	1-2	3.7			
	2-3	3.0			
	3-4	4.2			
S6	0-1	5.1	2.05	2.3	Brown to grey, moist to wet, silt some fine sand little gravel, clay.
	1-2	4.8			
	2-2.3	3.2			
S7	0-1	4.5	Not seen	1.5	Brown, damp, silt some fine sand, gravel over black, dry, weathered, phyllite rock.
	1-1.5	3.0			
S8	0-1	4.0	Not seen	2.1	Brown, damp, silt over tan moist fine sand and silt
	1-2	4.3			
	2-2.1	2.6			
S9	0-1	2.7	Not seen	3.7	Brown, damp medium and fine sand over grey humid gravel and medium sand (1-2 fbgs) over grey moist silt and fine sand.
	1-2	3.3			
	2-3	3.7			
	3-3.7	3.5			
S10	0-1	2.7	Hole caved, not measured	3.3	Brown, damp to wet medium and coarse sand over gravel (1.5-3 fbgs) over grey wet silt some fine sand, gravel.
	1-2	2.4			
	2-3	no sample			
	3-3.3	5.0			
S11	0-1	2.5	Not seen	3.0	0.4 feet brown, damp silt over humid medium and coarse sand over gravel (1.5-2.7 fbgs) over grey wet silt and clay.
	1-2	2.0			
	2-3	**48.3**			

Table 1
Summary of Masland Soil Headspace Photoionization Detector Measurements

Soil Core ID	*Depth (fbgs)*	*PID Headspace (ppmV)*	*Depth to Water (fbgs)*	*Depth to Refusal (fbgs)*	*Soil Description*
S12	0-1	2.6	Not seen	3.2	Grey to black moist silt some fine sand, clay.
	1-2	2.3			
	2-3	2.7			
	3-3.2	**21.0**			
S13	0-1	0.7	2.6	3.2	Brown moist to wet silt and fine sand, little gravel over weathered rock.
	1-2	3.0			
	2-3	2.5			
	3-3.2	2.6			
S14	0-1	1.1	Not seen	1.6	Brown wet silt and fine sand over fine sand and weathered rock.
	1-1.6	1.1			
S15	0-1	1.1	2.05	2.6	Brown moist to wet silt and fine sand, little gravel.
	1-2	1.1			
	2-2.6	1.1			
S16	0-1	1.2	1.3	2.4	Brown to grey, moist to wet, fine sand and silt. Mottled at 1 fbgs.
	1-2	1.2			
	2-2.4	1.1			
S17	0-1	1.5	Not seen	2.6	Brown wet fine sand some silt, little gravel.
	1-2	1.2			
	2-2.6	1.0			
S18	0-1	2.2	2.26	3.8	Grey damp to wet silt, some fine sand, little gravel, clay.
	1-2	1.0			
	2-3	1.1			
	3-3.8	1.2			
S19	0-1	Not measured	Not seen	3.2	Brown medium and coarse sand (0-1 fbgs) over grey silt some fine sand, clay. Sample collected from 2-3.2 fbgs for EPA methods 8021B and 8100.
	1-2				
	2-3				
	3-3.2				
S20	0-1	3.6	Not seen	4.3	Sample collected for EPA Method 8021B
	1-2	6.3			
	2-3	4.5			
	3-4	5.4			
	4-4.3	3.2			

Note: fbgs means feet below ground surface

P.8

The reported concentrations in soil sample S19 of three of these compounds were above the Vermont Groundwater Enforcement Standards (VGES), specifically 1,3,5-trimethylbenzene (VGES = 4 ug//L), 1,2,4-trimethylbenzene (VGES = 5 ug/L), and naphthalene (VGES = 20 ug/L). Total petroleum hydrocarbons as diesel fuel were reported at a concentration of 28,000 mg/kg. Copies of the laboratory reports and supporting documentation are included in Attachment 2.

A second soil sample (S20) was collected for laboratory analysis from directly next to the water supply well. This sample was analyzed by Scitest using EPA Method 8021B for VOCs. Naphthalene was reported present at a concentration of 4.2 ug/L in the sample. 1,2,4-trimethylbenzene was reported present at a concentration of 1.5 ug/L in the sample. These concentrations are below the VGES. Therefore, if the sample is representative of soils surrounding the well, there is insufficient contamination remaining in these soils to degrade the well water quality above the VGES. Copies of the laboratory reports and supporting documentation are included in Attachment 2.

2.2.2 Bailing of Oil and Measurement of Oil and Water in Well

On March 30, 1999 The Johnson Company discovered floated non-aqueous phase liquids (NAPL) in the water supply well while attempting to sample the well water with a bailer. The depth to water was approximately 60 to 65 feet below top of casing. Upon retrieval, the bailer had three (3) inches of red clear petroleum over water in it. The bailer string was coated with product for another 8-9 inches. The well guard was screwed on tight. There was no evidence of oil stains on the well guard, the pump wiring, or the rope attached to the well pump. The calculated volume of oil in the well is 0.69 gallons.

The well was bailed and swabbed with sorbent materials to remove the NAPL during the investigation. The following procedures were followed during bailing the oil from the water supply well.

- Prior to bailing, the depth to NAPL and the NAPL thickness were measured with an interface probe.
- The well was bailed prior to any purging for water quality sampling.
- The volume of NAPL and water removed from the well was measured and recorded. As the NAPL layer became thin (<0.1 foot), a sorbent sock or swab was used to remove the remaining NAPL from the well.
- Following NAPL removal the interface probe was used to confirm the depth to NAPL and NAPL thickness.
- Between March 31 and April 5 a sorbent sock was left in the well until the next NAPL removal event. Sorbent was not left in the well after April 5.

Table 2 provides a summary of the water and NAPL levels, and the recovered volumes, for the period of this investigation. Copies of the field notes are included in Attachment 1.

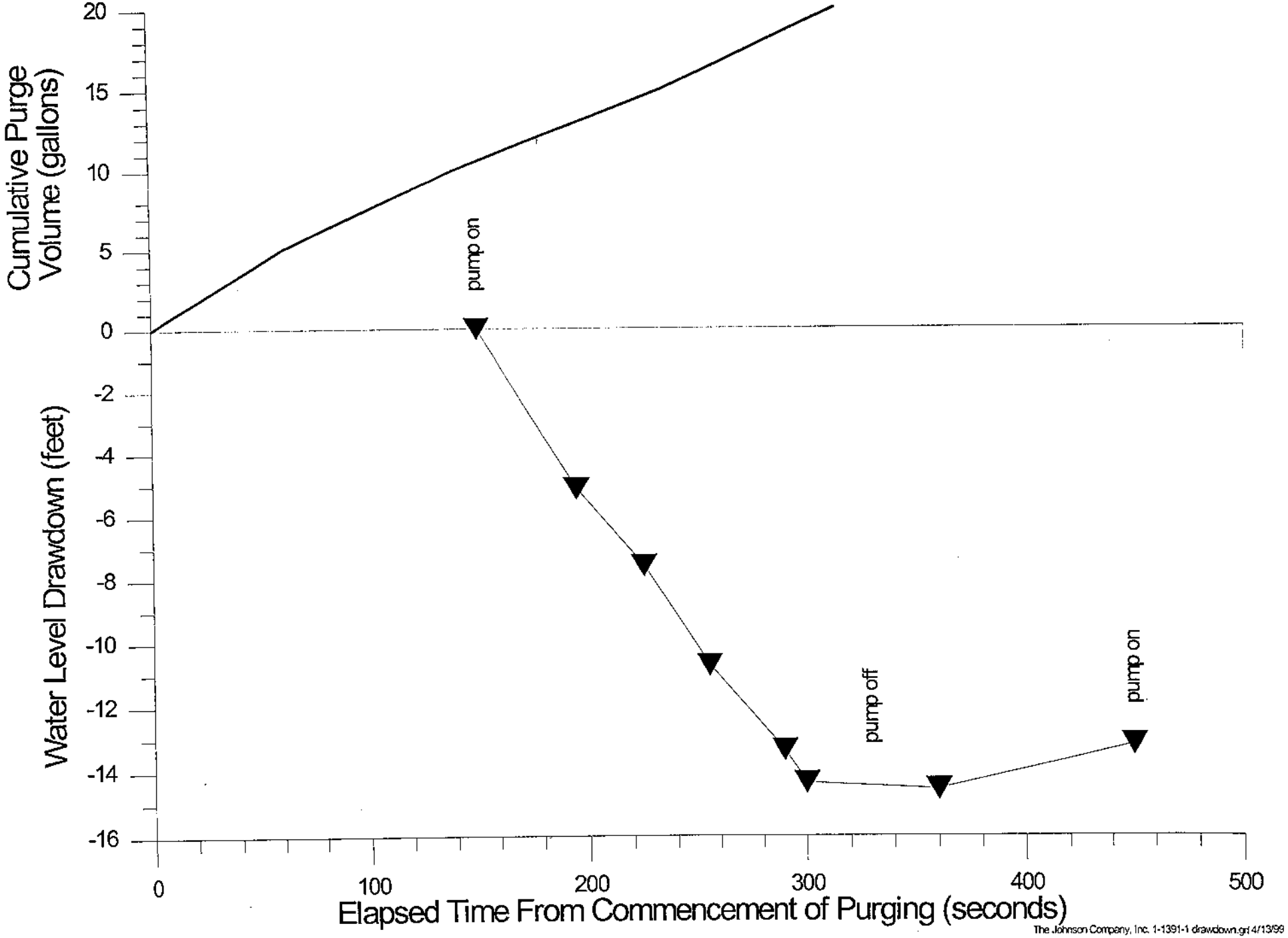
Table 2
Summary of Masland Water Supply Well NAPL and Water Measurements

Date	Time	Depth to NAPL	Depth to Water	NAPL thickness (ft)	NAPL recovered (L)	Water recovered (L)
3/31/99	14:15	61.85	62.31	0.46	~2.5	~5.2
3/31/99	15:55	63.87	63.88	0.01		
4/1/99	12:16	62.55	62.56	<0.01 (Sheen in bailer)	<0.1	~0.5
4/2/99	9:15	64.90	64.90	<0.01 (Sheen and droplets in bailer)	<0.1 (droplets)	~0.5
4/5/99	14:30	59.78	59.79	<0.01 (Sheen and droplets in bailer)	<0.1 (droplets)	~0.5
4/7/99	11:00	68.98	68.98	<0.01 (Sheen in bailer)	0	~.3
4/12/99	~16:00	63.68	63.69	<0.01 (Sheen in bailer)	0	~0.5
4/14/99	~8:05	72.44	72.45	<0.01 (Sheen on probe)	0	0
4/21/99	12:40	60.19	60.19	<0.01 (Sheen on probe)	0	~0.3

Note: Depths are provided in feet below top of well casing.

Water levels in the well were monitored during purging on March 31, 1999. Figure 4 is a graph of the water level drawdown during purging. At a pumping rate of approximately four gallons per minute the water level in the well dropped about 15 feet during a single cycle of the pressure tank controlled pumping.

Figure 4 - Drawdown Curve for Masland Water Supply Well - March 31, 1999



The Johnson Company, Inc. 1-1391-1 drawdown.grf 4/13/99

2.2.3 Water Supply Well Sampling and Analysis

On March 30, 1999 The Johnson Company collected a sample of the well water from a bleeder valve upstream of the water treatment unit. Prior to sample collection we ran the water for eleven minutes. This sample was analyzed by Scitest for VOCs using EPA Method 8021B. No volatile organic compounds were detected in this pre-treatment system sample.

Samples of the well water were collected from the laundry room sink (after the treatment system) on March 31, April 7, April 14, and April 21, 1999. These samples were analyzed by Scitest using EPA Method 524.2 for drinking water. A single duplicate sample and several field blanks collected in association with these samples were analyzed using EPA Method 8021B.

No volatile organic compounds were detected during laboratory analyses of well water samples collected after the water treatment system in the house, with the exception of 6 ug/L chloromethane in the sample collected on April 14. The Vermont Groundwater Enforcement Standard for chloromethane is 30 ug/L. Chloromethane is not a typical component of fuel oil. It is a common contaminant derived from the reaction of methyl alcohol used for sample bottle cleaning with hydrochloric acid used for sample preservation.

The samples were placed on ice for preservation, and transported under Chain of Custody to Scitest Laboratory of Randolph, Vermont for analysis. The samples were preserved with hydrochloric acid. The water supply well was purged for a minimum of ten minutes prior to the collection of each sample.

2.3 RECEPTOR SURVEY

During the investigation the potential threat to the following paths of exposure and sensitive receptors were evaluated:

- water supply wells,
- physical contact by residents with contaminated media,
- inhalation of contaminants,

and

- local wetland areas and those included on the National Wetlands Inventory.

Analyses of post-treatment water samples at the Masland residence indicate that the treatment system is working properly, and the residents are not consuming or using petroleum contaminated water.

The three water supply wells closest to the Masland well are owned by neighbors north and south of the Masland property (Figure 2). While the exact locations of these wells were not determined, the residences are located at approximately 500 feet from the former UST and Masland well locations. A single analysis of un-treated water from the Masland well suggests that the water producing bedrock fracture is not contaminated with detectable concentrations of

petroleum products. The potential risk to neighbors due to ingestion of or exposure to contaminated groundwater has not been evaluated by laboratory testing.

The current residents of the Masland Site are a family which includes two adults, an infant, and two elementary school aged children. Given that the observed subsurface soil contamination is greater than two feet below ground surface, they are not currently threatened by physical contact with the subsurface contaminated soils. The soils which were excavated in 1996 and treated on-site have been spread on-site and are currently covered with a growth of grass. No laboratory testing of these soils has been performed to assess the effectiveness of the on-site treatment. PID headspace measurements of three samples of these soils indicated readings of 3 ppmV or less. The potential risk to residents due to physical contact with these soils has not been evaluated by laboratory testing.

The air inside the Masland residence was tested with the PID on April 30, 1999. Special attention was given to testing the foundation penetrations such as the water line entrance. No readings elevated above background levels were detected.

There are no mapped significant wetlands within 1,000 feet of the observed contamination. However, based upon vegetation types and depth to groundwater, there are wetlands which surround the developed land on the Site. These wetlands would be at risk from contaminant transport by surface water if there was contaminant at or near the ground surface. Under current conditions as observed during the investigation the wetlands do not appear to be at risk of contamination.

3.0 CONCLUSIONS AND RECOMMENDATIONS

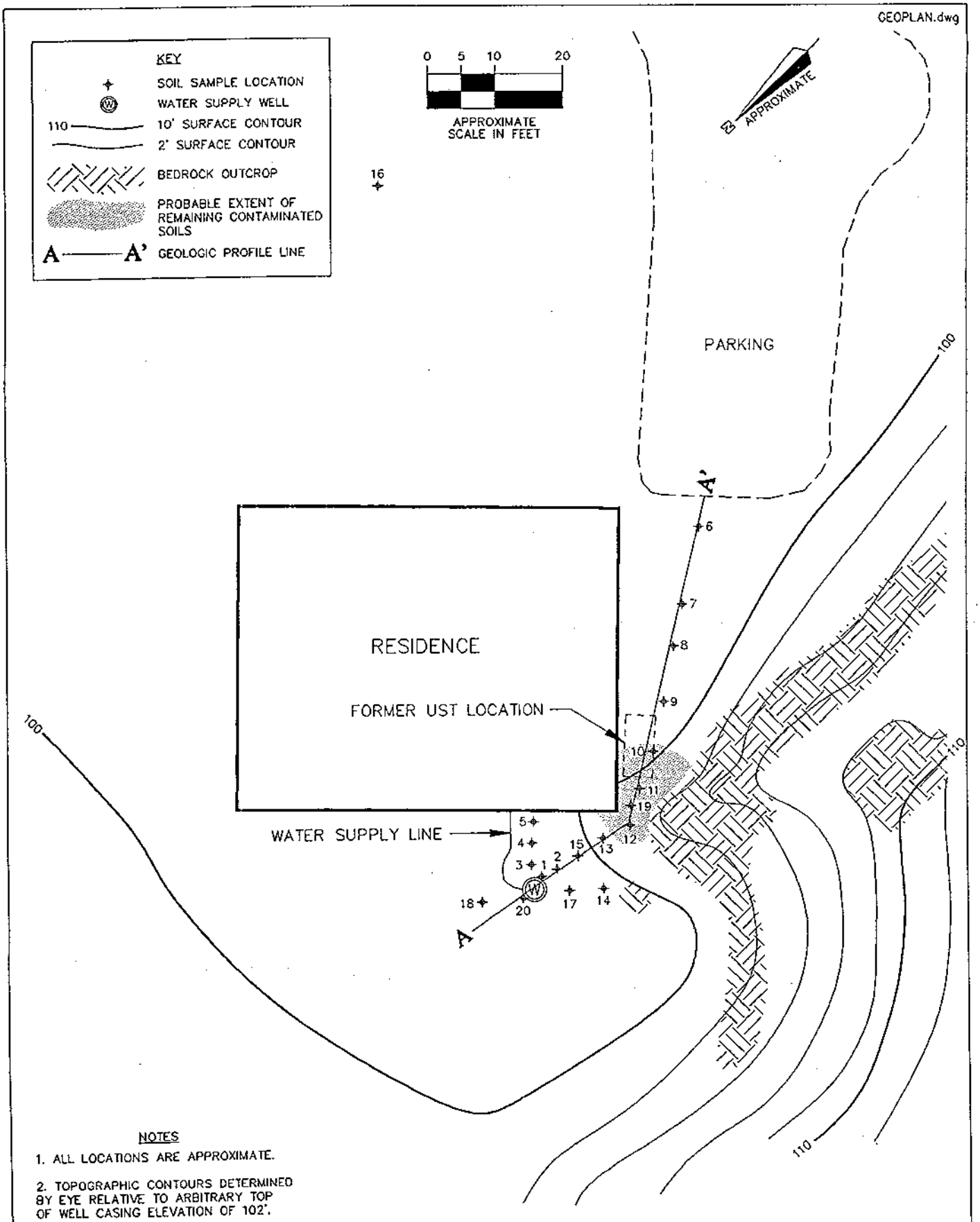
CONCLUSIONS

Based on the limited investigation by The Johnson Company at the Site, and findings from lab analysis, the following conclusions have been made:

- The probable source of subsurface contamination was a release in 1996 from the #2 fuel oil underground storage tank.
- There was no indication that the water supply well was examined for the presence of *light non-aqueous phase liquids* (LNAPL) in 1996. Water samples, collected on January 22, 1996, confirmed that a release had occurred, yet its impact appeared limited based upon the second set of samples collected after well purging on January 25, 1996.
- Approximately seven to fourteen cubic yards of contaminated soil were excavated from the vicinity of the UST during its closure in September 1996. These soils were polyencapsulated on-site for treatment. Following treatment they were spread on-site during the summer of 1998. No analytical tests have been performed on these soils.
- Approximately 60 square feet of subsurface soils, to an average depth of about 4 feet

below ground surface (bgs) are currently impacted above PID limits of 10 ppmV (see Figure 5). Soil contamination above PID limits extends approximately 2-4 feet bgs (see Figure 6). There are currently approximately three cubic yards of subsurface soils which are contaminated with petroleum products at concentrations orders-of-magnitude above Vermont Groundwater Enforcement Standards (VGES).

- Naphthalene and 1,2,4-trimethylbenzene were detected in soils collected adjacent to the bedrock water supply well below Vermont Groundwater Enforcement Standards. It is likely that the presence of these compounds is due to migration of dissolved contamination from the former underground storage tank towards the water supply well. The observed concentrations suggest that there is insufficient contamination remaining in the soils to contaminate the well above drinking water standards.
- Approximately 0.7 gallons of red #2 fuel oil were bailed from the water supply well during the investigation. The well has not accumulated additional oil over a period of approximately one month. There are still oil droplets and petroleum sheens in the well.
- The well water appears to be stratified, with non-aqueous phase liquids and dissolved petroleum contamination in the upper portion around 60-85 feet bgs, and uncontaminated water supplied by fractures at approximately 185 feet bgs.
- The most likely pathway for contaminant migration is fractured and weathered rock which occurs at depths of less than six feet bgs. The maximum depth of weathering and associated preferential pathways is unknown, but appears to be less than 185 feet bgs where the water bearing fracture was encountered in the well.
- The 0.7 gallons of oil observed in the well appeared to be un-weathered. Therefore, it is likely that the oil migrated from the UST to the well soon after the initial release. It is possible that dissolved contamination is still migrating into the bedrock well from the contaminated subsurface soils or from residual oil left in the fractures and void spaces in the rock. It is possible that there is still LNAPL oil in the rock which will continue to recontaminate the well.
- No atmospheric receptors or sensitive environments appear to be directly affected by the observed contamination at this time.
- Physical contact by residents with subsurface contaminated soils is not likely at this time. The risk of exposure to previously treated soils was not evaluated by analytical testing. Additional on-site polyencapsulation treatment of soils could expose children and other residents to the contaminated media.
- The water treatment system is successfully removing petroleum related volatile organic compounds, and residents are not currently being directly affected by ingestion or use of contaminated water.
- The limited vertical extent of the contamination in the bedrock aquifer suggests that three neighboring water supply wells more than 500 feet away may not be directly affected by the observed contamination. The risk to neighbors from contaminated water supply wells has not been evaluated by analytical testing.



NOTES

1. ALL LOCATIONS ARE APPROXIMATE.

2. TOPOGRAPHIC CONTOURS DETERMINED BY EYE RELATIVE TO ARBITRARY TOP OF WELL CASING ELEVATION OF 102'.

FIGURE 5: GEOLOGIC PROFILE LOCATION
VERMONT SMS SITE #96-1945
MASLAND RESIDENCE, CALAIS, VT.

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
100 STATE STREET MONTPELIER, VT 05602

DATE: 4/23/99 DRAWN BY: TJK DM PROJECT: 1-1391-1 SCALE: 1"=~30'

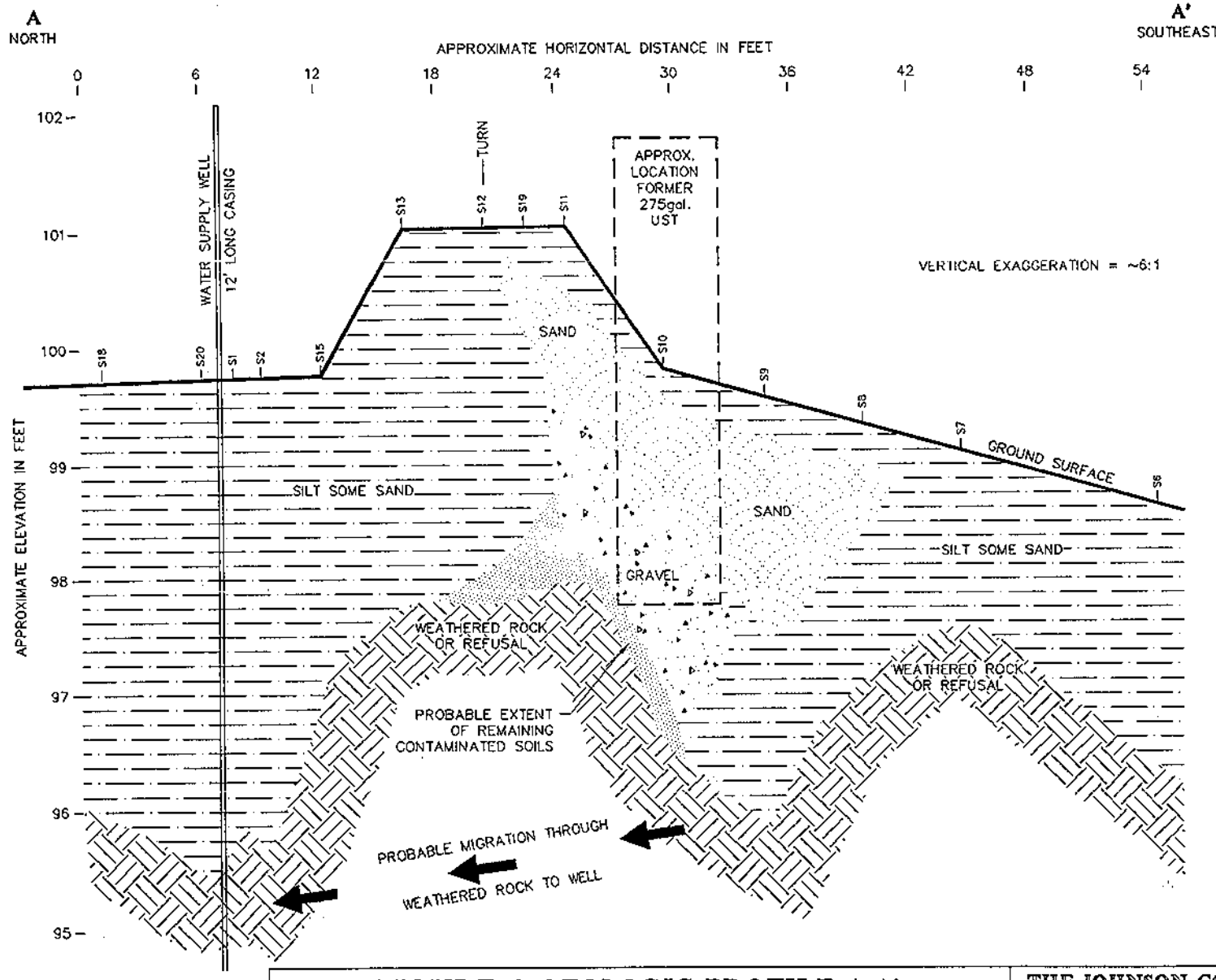


FIGURE 6: GEOLOGIC PROFILE A-A'
VERMONT SMS SITE #96-1945
MASLAND RESIDENCE, CALAIS, VT

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
100 STATE STREET MONTPELIER, VT 05602

DATE: 4/23/99 PROJECT: 1-1391-1
DRAWN BY: TJK SCALE: SHOWN

RECOMMENDATIONS

Based on considerable review by The Johnson Company and enforcement standards set forth by the State of Vermont, the following recommendations are made for remedial action at the Site.

Soil Removal, Testing, and Off-site Disposal

The soils contaminated above 10 ppmV by PID headspace analysis or above VGES should be excavated and transported for treatment off-site. These soils need to be removed because they are likely acting as a residual source of dissolved contamination which could enter the water supply well. Confirmation of the appropriate extent of excavation should be conducted using PID headspace measurements and also by EPA Methods 8021B and 8100.

Off-site treatment is recommended due to the potential for physical contact with the soils by residents and children during on-site polyencapsulation. Potential locations for treatment include polyencapsulation at the Palisades Landfill in Moretown, Vermont and thermal desorption at ESMI of Loudan, New Hampshire. A cost comparison of three treatment options should be incorporated in the corrective action plan.

The previously treated 7-14 cubic yards of contaminated soils should be tested using PID headspace methods, and also by EPA Methods 8021B and 8100. If the soils are still contaminated above acceptable levels based upon EPA Region 1 residential risk based standards, then they should be collected and transported for off-site treatment or disposal.

Excavated areas should be replaced with clean fill. A fill containing a minimum of 50% silt sized particles should be placed and compacted directly on any rock surfaces exposed in the excavation. This silt layer should be at least one foot thick to prevent any potential future migration of residual contamination into the rock fractures. Crushed stone or sand should be placed over the silt to promote drainage. The upper 0.5 feet of fill should be composed of clean organic top-soil.

Water Supply Well Cleaning

The pump currently in the water supply well should be removed, and its wiring and pipe which was exposed to oil replaced. The wiring insulation and black ABS pipe probably have sorbed contaminants due to prolonged exposure to NAPL. This could cause recontamination of the well if they were left in place.

The water in the well should be pumped out by means of a dedicated pump set at 80 fbgs. This pump should not be reused afterwards for potable water. The piping and wiring currently in the well can be used with the dedicated pump. Pumping rates should be maintained such that the water level in the well remains at approximately 80 fbgs. This will cause clean water to circulate up the well from the fracture at 185 fbgs, and replace the contaminated water in the upper portion of the well. The water pumped from the well should be treated with activated carbon prior to discharging it onto the ground surface. A weighted chimney brush (new) with a sorbent cloth

cover should be used to scrub the interior of the well from the ground surface to 100 fbgs. If feasible, a hot water jet or steam cleaning should be used to clean the well bore and casing. A detergent such as Tide™ should be used during cleaning. The well bore should be thoroughly rinsed following cleaning by recirculating water with the dedicated pump.

Water Supply Well Water Quality Monitoring

Confirmation of the effectiveness of the corrective actions should be performed directly after cleaning the well and by using quarterly water quality monitoring for a period of one year. The water quality monitoring should include collection of samples with a bailer from the well without purging. The last sample event should also include a sample collected from inside the house, but before the water treatment system. Water samples should also be collected from the three closest neighboring water supply wells during the first monitoring event. These samples should be collected from the indoor taps. The samples should be analyzed by EPA method 524.2 for VOCs in drinking water. Equipment blanks collected with the samples should be analyzed by EPA method 8021B. The wells should be tested for PID headspace and the presence of LNAPL during each monitoring event.

Second Phase Corrective Actions

There could still be residual oil droplets and an oil film left in the fractures and void spaces in the rock. It is possible that the residual oil in the rock will continue to recontaminate the well, either by flowing into the well, or by contaminating snow melt and rainwater which passes by it on the way to the well. The recontamination would continue at decreasing levels until all the residual oil is gone. Under natural conditions this could take a few years or a few decades, and may have already happened.

If there is still residual contamination entering the well after cleaning, there are three options: try to clean the contamination from the bedrock, drill a new well, or to extend the casing of the existing well below the contaminated, weathered portion of the rock. If the well collects dissolved contamination, but not a pool of oil, then the well casing should be extended or a new well with extended casing drilled. If LNAPL oil pools in the well again, a hot water/steam flood should be used to remove the mobile oil from the rock. If the LNAPL is left in place, it will likely act as a source of continuing dissolved contamination for decades.

If it becomes necessary to extend the casing of the existing well deep into the rock, we recommend first performing a downhole television survey to determine how deep to extend the casing. If a new well were drilled, it would be necessary to case the new well to a considerable depth in the rock to insure that it too does not become contaminated, since the extent of the contamination in the weathered rock is unknown. A cost comparison of these options should be used to determine which is more suitable to this Site.

Hot water/steam flood technology is a proven method to clean bedrock fractures of LNAPL. It includes pumping hot water and steam into the rock at the source (below the former UST) to wash out the oil. The oil would be recovered in the existing well. The process would

take about a week. This technology works well to get any oil droplets or pure oil from the rock, but does not remove all the oil film. Adding a detergent such as Tide™ can help remove the film somewhat. Cleaning the rock fractures to the point where there is absolutely no oily film left would be very expensive (on the order of tens of thousands of dollars) when compared with the cost of providing a new water supply well. Once the free oil is removed (if there is any left), then the fractures should clean-up by themselves over a period of 5-10 years. Therefore it would still be necessary to re-case the well, or drill a new well which would not be impacted by the contamination.

Because of the apparently limited extent of the contamination, additional investigations, such as a Corrective Action Investigation, are not recommended at this time. A rough cost estimate for soils removal and disposal, water supply well cleaning, and water supply well monitoring is included as Attachment 3. The total estimated order-of-magnitude cost for these actions is $11,500. Upon your approval of this conceptual corrective action, we will prepare a complete Corrective Action Plan and cost estimate. We look forward to your response to this report. Please call with any questions you may have concerning this Site.

Respectfully Submitted,
THE JOHNSON COMPANY, INC.

By: _____
Donald M. Maynard, CG, P.E.
Senior Geologist/Engineer

Reviewed By: TRO
I:\PROJECTS\1-1391-1\INVSTRPT.fin May 5, 1999 DMM

Attachment 1

Field Notes

DM #23A MASLAND/sheldon

5/30/99 VT SMS # 96-1945

site visit

suzanne 1-1391-1

106405 - 416 - 428

11:00 - 11:20 on site - 13:45

DI.

shovel

11:22 calibrate PID - 98.3 ppmv
(IB 100 ppmv)

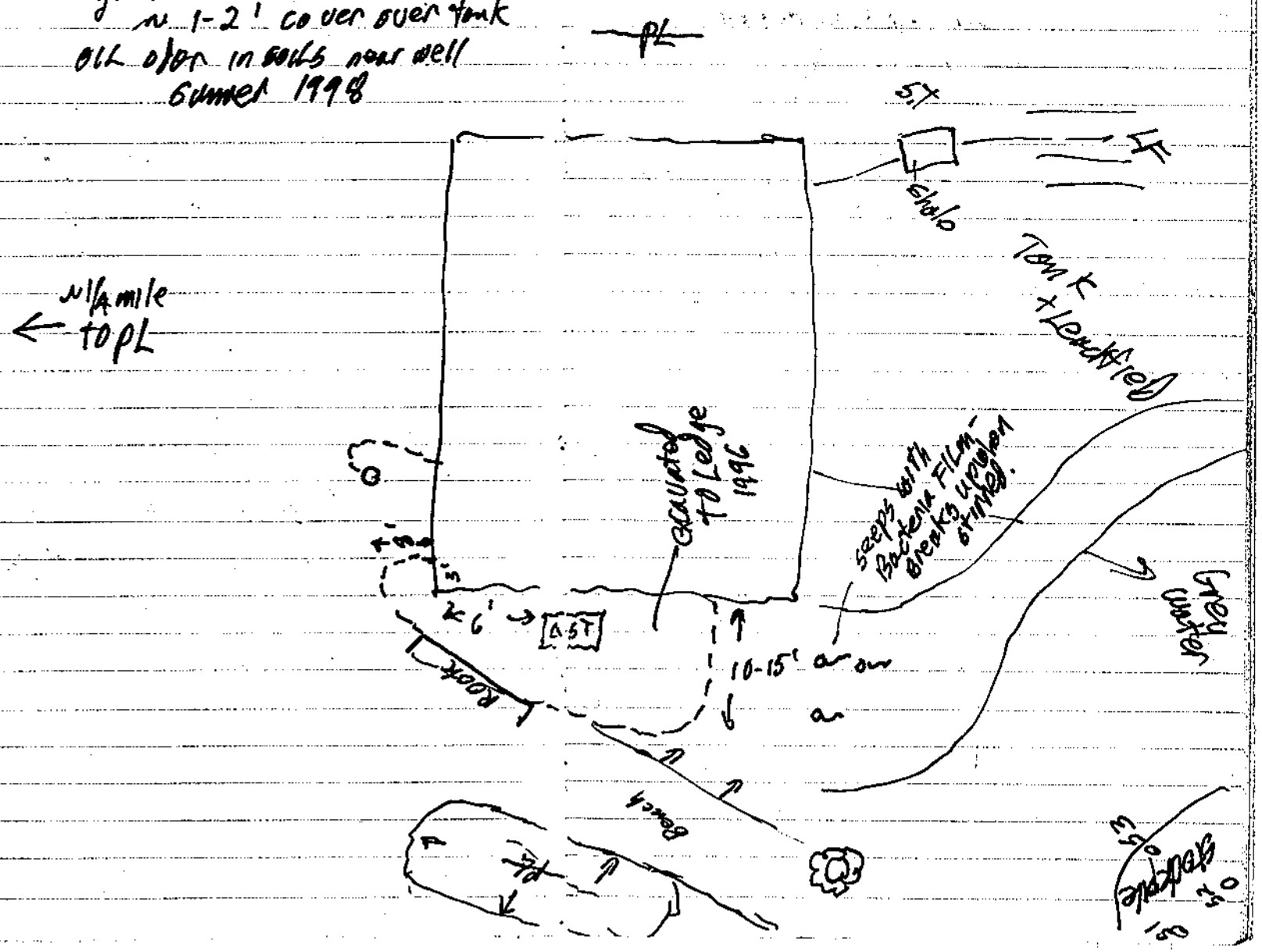
Bert French - PID excavated soil pile spread last summer. (1998)

14

1996 Flooding in January
ground saturated
~ 1-2' cover over tank
oil odor in soils near well
Summer 1998

1-1391-1
DRM # 23A

15



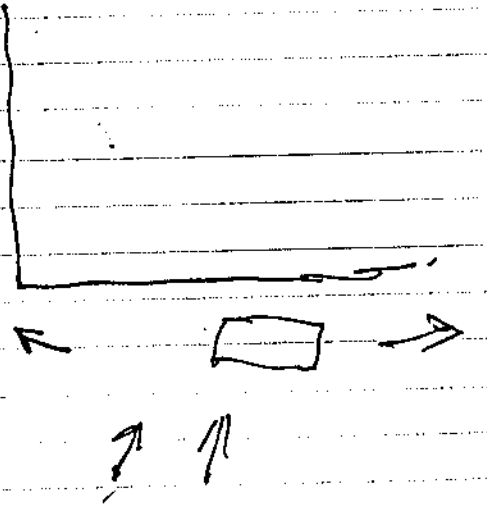
16

~45°F partly cloudy.
3-31-19

PID BG 0.1
WELL 1.0 ppmv. 11:35
Slight petro. odor

Free product in soil during tank removal

French next week removed soil...



17

1-1391-1 sample well + house

Bmn #23A

Invoice Both Agency + Masland + they will cut a two party check.

~$1300 soil removal applyed to deductible.

1995

tenents

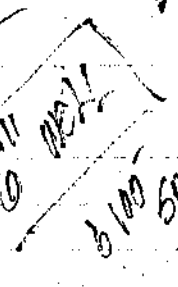
15:10 Susanne will call them Tonight

Lisa + Damian Middleton 454-9960

Offsite 13:20

stop @ E. Montpelier Town offices.

and tell them not to Drink the Water proof of no insurance



3 samples 0-0.3'
from stockpile
spread area
PID BG 0-0.3

61 - 2.8 ppmV
62 3.0
63 2.1

well SU 2.3 - GW 6.6 BTOC
3.3'

Hand auger next to well
samples -
Brn moist-wet silt/clay
Blue Board @ 2.5'
GW @ 3'
refus @ 3.5'
PID

0-1' 2.6 ppmV.
1-2 0.7
2-3 4.0
3-3.5 2.5

6" Diam well
Cap screwed on but
screws NOT rusty.
rope for pump Dry PID Headspace
Faint petrol odor. 1.0

3-31-94 1-1391-1
Dm #23A

12:12 start water in
12:23 Laundary room sink.

Sample inside from
Bleed valve Before Blue Filter
@ 12:27
COC #2462 TWO 40 ML Amber VOAs
HCL preserved
Labeled Masland-in

Attempt to sample well
with Bailer
Drillers yield ~ 12 GPM
@ 12:40 ~ 65-67 °F BTOC
Red fresh FO > 3" in
well.
est > 1' thick

3-31-99

Frost wall of Foundation keyd into rock

slab ~ or 1.5' Below GS.

PID on side 0.0

No hits @ water Line pen to house

F.O. pen above GS.

Smasland @ together.net

Montpelier Apartment.
229-4595

DW #23A 1-1391-1

on Gray Rd off Factor

In Calais

hours-
M, T, Thurs
8-5 pm.

1 mile past Mpl CNRS on Right.

Scitest

524.2	72hr tat	200
	Normal	150
8021B	Water	55
	Soils	65
8100	Water	60
	Soils	60

4-1-99 1-1391-1 DM#23A

13:15 - 17:05

123286-

Materials

	3/4" Bailer	
2 rolls	Twine	2 50
130'	1/8" rope	12 -
	Bolt + chain	12 -
	DRILL Bit	12 -
20	nitrile Gloves	
11	SOCKS	
5	DI-gals	
5	PADS	

Need EPA ID #

F350 36326 - 36345

~~oil~~

On site 13145

Temp 55-60°

4.4 ppm after opening the well cover

Inspection of well shows no sign of product on well gaurd

oil at 61.85 BTOC = 0.46' of product in well

water at 62.31

0.46 ft x 1.47 $\frac{\text{Gal}}{\text{Ft.}}$

Bailing started at 14:20

3-31-99 1-1391-1

2:15-3:15
Initial 0.36' water > in one gal jug.
Bailing 0.12' NAPL
~ 0.05' product left in well

3:15-3:54
Second 0.37' water > in gal Jug
15:10 0.04' NAPL

From sonde's
0.14' NAPL in Gal Jug

875
15:55:00 63.~~86~~ NAPL BTOC
63.88 H_2O

15:56:00 63.81 NAPL
63.80

Get order Socks
Garbage Baggs
Ringer + Bucket
weights
1/8" Rope

Time	Depth TO NAPL	TOTAL FLOW Q
15:59:20	63.71	0
16:00 water on		
:00:07	63.69	
:25	6.3.68	
:50	63.67	
16:01		5 gal
01:30	63.65	
02:00	63.64	
02:20		10 gal
:30	pump on	
03:15	68.75	
3:~~30~~45	~~72.~~ 71.2	
03:55		15 gal
4:15	74.35	
4:50	77.00	
5:00	78.00	
5:15		20 gal
5:30	pump off	
06:00	78.20	
16:07:30	76.93 NAPL	
	pump on	

1-1391-1 3-31-99 DMM#23A

collect 2 Amber VOAs from Laundry room tap after 10 min. purge

COC #2402

MabLand-out - 16:11 624.2
MabLand-out-D 16:12 8021B
~~Mab~~ F. Blank 16:19 8021B

16:38 NAPL
72.25 FBTOC
< 0.01' OIL

Offsite: 16:50
pioneer: 17:05
Done 18:15

4-1-99

10:~~45~~
123340 ~ 123351 — 123362
1/2way

onsite 11:15

11:23 check PID calibration TO
100 ppm I.B— reading 100.1 ppm
BG. 0.0 ppm

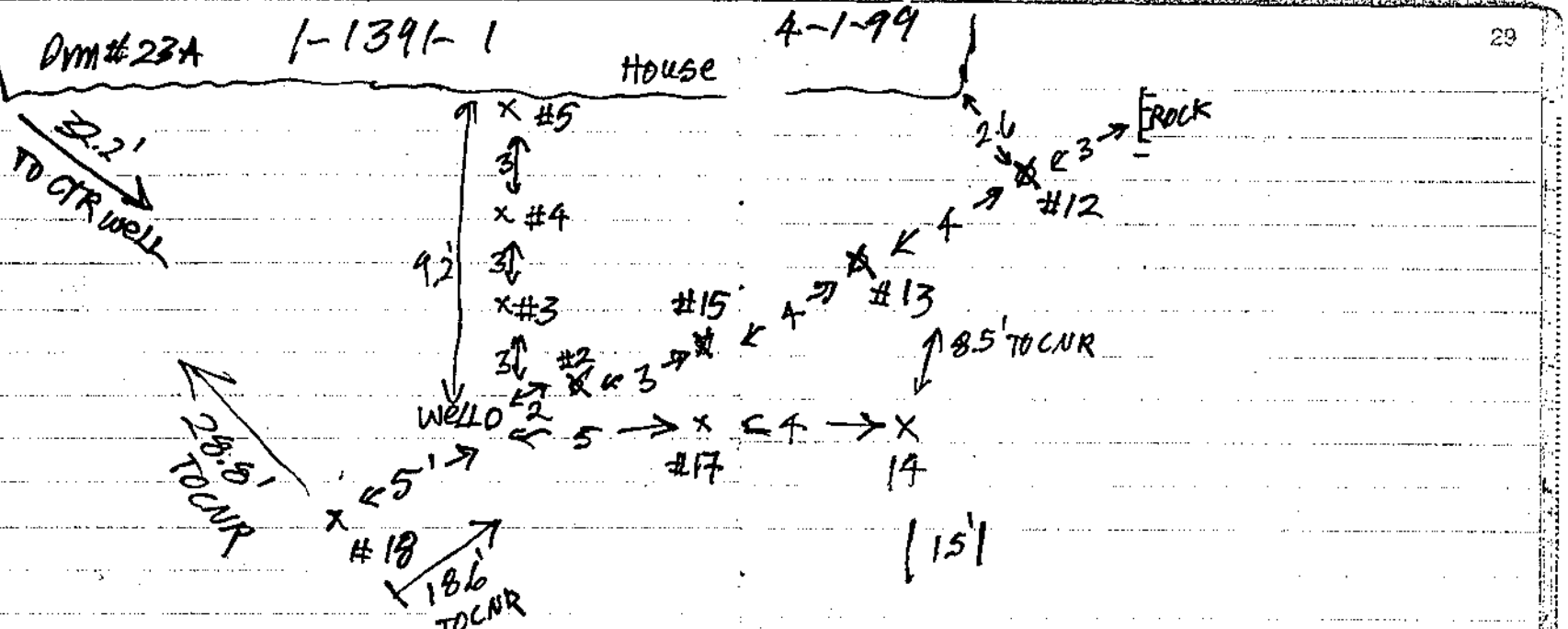
~55°F Sunny - Hazy
0-5 mph wind

11:30 well headspace PID 3.9 ppm
(well still in shade)

12:16 Napl Level 62.55 FBTOC
Up 62.56 FBTOC
- No Product in Bailer -
>10mL NAPL recovered from sock
new sock installed

Dvm #23A 1-1391-1

4-1-99



samples placed in soil prior to test.

Hole	Depth	PID	collect soils time	measure time
2	0-1	4.0	11:50	13:01
	1-2	4.1	11:52	02
	2-3	4.5	11:53	03
	3-4	4.4	11:56	04
	4-4.1	2.7	12:00	13:05
3	0-1	4.3	12:06	06
	1-2	3.3	12:8	07
	2-3	4.5	12:10	08
	3-3.2	2.6	12:12	13:10
4	0-1	4.4	12:30	1343
	1-2	4.9	12:32	13:44
	2-2.5.	2.5	12:35	13:46
5	0-1	4.9	12:50	13:47
	1-2	3.7	12:52	13:48
	2-3	3.0	12:54	13:49
	3-4	4.2	12:56	1350
6	0-1	5.1	13:24	14:30
	1-2	4.8	13:26	14:32
	2-2.3	3.2	13:28	1433
7	0-1	4.5	13:35	14:34
	1-1.5'	3.0	13:39	14:35
8	0-1	4.0	12:01	15:00
	1-2	4.3	12:03	15:01
	2-2.1	2.6	12:05	15:03

soils

1-1391-1 4-1-94

Brn Damp SILT, sm Cly, FS

Grey moist SILT sm FS, Cly mot @ 1.8'

Grey moist SILT, sm FS, Little gvl, peb. mots

— s wet @ ~3.5' SAA

SAA → ⊽ @ 3.6 FBGS ref on Rock 4.1

Brn, Dp, SLT, sm cly, FS

Grey, moist, SILT, sm FS, Lit cly mot @ 1.6'

Grey moist SILT, sm FS, Lit GVL, peb, mots

Grey wet saa. Ref on Rock 3.2 ⊽ not seen

Brn moist SLT, sFS, cly

Grey moist SILT NO ⊽

Grey wet SILT, sFS, LGVL, Peb. ref @ 2.5 on rock

Brn Moist SILT, sm FS, Cly

Grey moist SLT, sFS, Lit Cly - Blue sand

SAA GW 3.85 - 3.65 wet ref @ 4.0

3-3.6 SAA, 3.6-4 Black mica Fine Sand

Brn Damp SILT sm FS, gvl, Lit Cly

Grey moist SILT sm FS, Lit gvl, Cly

Grey wet SAA 2-3 ref on Rock GW @ 2.05

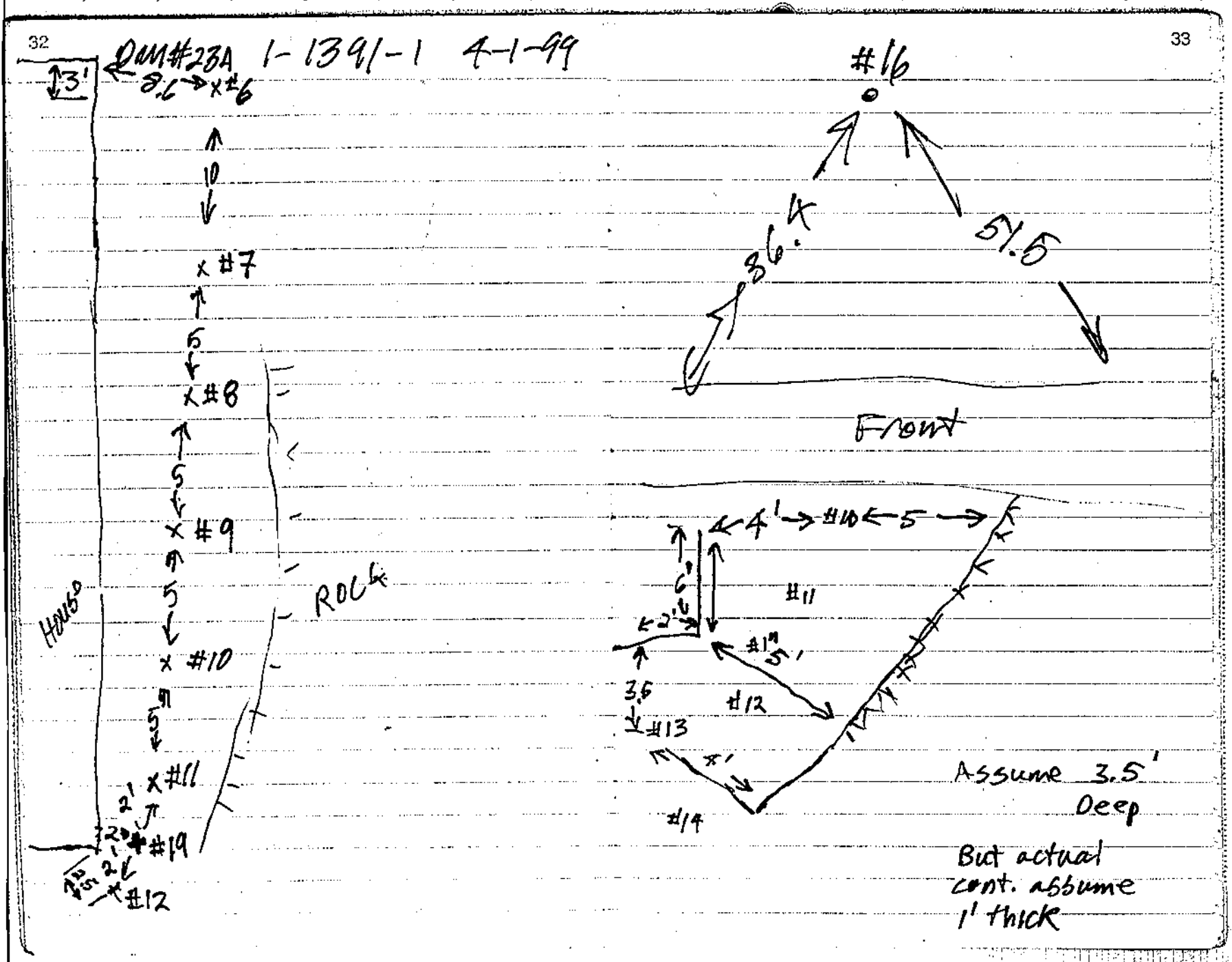
Brn Dmp SILT, sFS, gvl, Lit Cly NO GW

Black Dry rotten phyllite - ref @ 1.5'

Brn Damp SILT over ton Fine sand

Brn moist SILT, sFS

SAA refus on rock 2.1 NO G.W.


Run #23A 1-139/-1 4-1-99
3'
8.5 → x #6
10
x #7
6
x #8
5
x #9
5
x #10
5
x #11
2'
x #12
House
Rock
#16
36°
51.5
Front
4' → #10 ← 5 →
6'
#11
2'
#13
3.6
#12
5'
x'
#14
Assume 3.5' Deep
But actual cont. assume 1' thick

4-1-99 DM #23A1-1391-1

Hole	Depth	PID	Time Collected	Time Tested
9	0-1	2.7	14:18	15:23
	1-2	3.3	14:20	15:24
	2-3	3.7	14:22	15:26
	3-3.7	3.5	14:27	15:27
10	0-1	2.7	14:40	15:55
	1-2'	2.4	14:43	15:57
	2-3'			
	3-3.3'	5.0	14:48	15:57
11	0-1	2.5	14:51	15:59
	1-2	2.0	14:53	16:00
SLIGHT FO ODOR	2-3	48.3	14:56	16:01
12	0-1	2.6	15:08	16:07
	1-2	2.3	15:10	16:07
	2-3	2.7	15:12	16:08
FAINT FO ODOR	3-3.2	21.0	15:14	16:08
18	0-1	2.2	15:40	16:29
	1-2	1.0	15:43	16:30
	2-3	1.1	15:45	16:31
	3-3.8	1.2	15:47	16:31
19	0-1		16:05	—
	1-2		16:06	—
	2-3.2 TD ref on ROCK		16:10	

SOILS

Brn Damp M+F SD
Grey Hum GVL + MS
Grey moist SILT + FS NO GVL.
SAA → ref. on Rock

Brn Damp M+C SD
Brn wet M+C SND TO 1.5, Then GVL
Gravel - no sample
Grey wet SILT, SFS, GVL Refus @ 3.3 covered TO 1.5 on Rock

0.4' Brn Damp SILT over Hum M+CS
0.5' Brn moist M+CS over GVL (@ 1.5')
0.7' GVL over 0.3' Grey wet S+Cly (@ 2.7')
refusal on Rock @ 3' - NO GW

Grey moist SILT, Som FS, Cly,
SAA
Black SAA refs @ 3.2 on ROCK NO GW
Grey moist SILT, SM FS, LT CLY, GVL
Damp SAA
Grey Damp SILT, SFS, GVL, Lit peb
Grey wet SAA ref on Rock 3.8'
Brn M+CS
Grey SILT, SFS, CLY
Sample SOIL-19 FOR 8021B and 8100 TPH #2 FO

36

Need EPA ID

Test well water from pump and from boiler prior to plugging

Grout well

clean well

replace pipe + pump

Dig + onsite poly encapsul.

monitor stockpile.

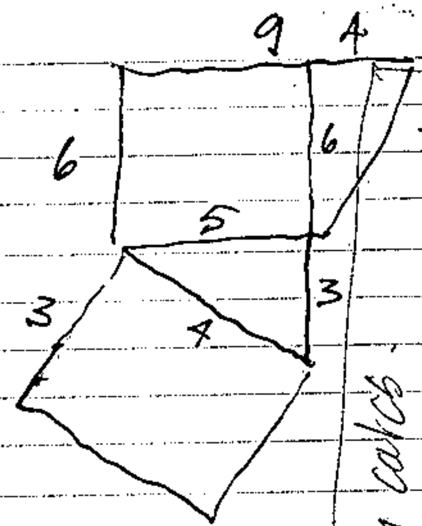
Cloudy and cooler after ~2 P.M.

Offsite 17:00

Done 17:30

4-2 hr summary E-mail and sample prep/delivery

DM 23A 4-1-99 1-1341-1 37



Lat/Long calcs

Lat. 2.5 min in 7.6 in = 19.74 sec/in
3.7 in x 19.74 = 73 secs + 44°30' = 44°31'13"
plum field sheet USGS 6B 42 B

Long. 2.5 min in 5.5 in = 27.27 sec/in
72°27'30" − 0.35 x 27.27 = 72°27'20"

6 x 5 = 30

6 x 4/2 = 12

3 x 5/2 = 7.5

3 x 4 = 12

61.5 CF (1 ft thick)

≈ 2.25 CY + FLUFF + contingency.

say 3 CY

(141)

Mcclaud 4/1/99

1-1391-1

Onsite

Installed Locks + chain on well Cover.

Location	Time	Depth	Refusal	Oxm	Capping Time
16	14:30	0-1'		1.2	16:12
	14:35	1-2'		1.2	16:12
	14:40	2-X 2.4'	RH	1.1	16:13
17	14:50	0-1'		1.5	16:15
	14:55	1-2		1.2	16:16
	15:00	2-2.6'	2.6' RH	1.0	16:16
15	15:05	0-1'		1.1	16:18
	15:10	1-2'		1.1	16:19
	15:15	2-2.6'	2.6' RH	1.1	16:20
14	15:25	0-1		1.1	16:23
	15:30	0.0-1.6'	1.6 RH	1.1	16:23
13	15:35	0-1		0.7	16:25
	15:40	1-2		3.0	16:26
	15:45	2-5		2.5	16:27
	15:50	3-3.2	3.2 RH	2.6	16:27

Masland 4/1/99

1-1391-1

TRO

(142)

Location	∇ BGS
18	2.26
15	2.05
13	2.6
4	0.7
16	1.3

19	0-1	2.2

Soil Desc

Silt, FS, Lit Grv. Drk Br moist Topsoil

Drk Br - Grey Moist FS & Slt, Mottling

Dr Br Wet - Sat slt, some fs, lit cl Sat Bottom 0.2'

Dr Br Wet FS, Lit silt, few Pap & Grv. Topsoil

Dr Br Wet-Sat FS some Silt Tr. Peb.

Dr Br Wet-Sat FS some Silt, Lit Grv.

Dr Br Moist Silt, some fs, lit Grv.

Dr Br Moist-Wet FS some Silt, lit Grv

Dr Br wet-Sat fs, t Silt, lit Grv.

Dr Br Wet Silt, fs Tr Peb

Black Sat Rotted Rock fs

Dr Br Moist Silt, fs, Some Grv. Topsoil

Dr Br Moist Silt, some fs Lit Grv.

Dr Br wet fs, some silt, Lit Grv

Br wet-Sat silt, some Grv. Rotted Rock

(143) 1-1391-1 TPO
Mosland 4/2/99

On site 9:00

Calibrated ovm
100ppm span gas = 102 ppm ovm
Bk grd. = 0.1 ppm

Opened up well cover 8.7 ppm in air space top of well casing.
Water level 64.90' slight oil on surface 0.025
Pulled a bailer of water from well still evidence of droplets & sheen on top of water.
Pulled sock from well and ran it thru ringer. Bottom part of sock was picking small oil droplets on surface after ringing sock.

Used new bailer to look at water table.
Installed new sock.

off Site 10:15

Mosland TPO (144)
4/5/99 1-1391-1

Sunny mid 40's
on site ~~10:45~~ 14:15 TPO 4/5 - collect water sample - collect soil sample - check well for oil & soil
~~Excavator in operation~~

oil level in well — 59.78 BTOC
Water level in well — 59.79 BTOC

Pulled sock & wrung out ≈ 150 ml of water w/ sheen and small droplets of oil noted near/on surface.

Location	Depth	ovm	Time	Soils
MW20	0-1	3.6		
	1-2	6.3 ppm	15:50	
	2-3	4.5 ppm		
	3-4	5.4 ppm		
	4-4.3	3.2 ppm		

Maland

4-7-99
TRW

148

onsite 10:45
overcast mid 40s slight drizzle
- Water samples
- check well

water level in well
68.98
< 0.01' of oil product
Bailer sampled showed only a sheen on the water surface.

Sock was left out of the well.

Turned water on + let run for 10 min.
water sample for 8240
2 vials Time 11:20
2 vials for field Blanks.

Closed up well with chains + locks

offsite 11:40

(3) Masland 4/12/99
1-1391-1 TRO

Calibrated ovm
97 ppm span gas = 98ppm ovm
Water Level in Well from TOC
oil 63.68 slight product/sheen
water 63.69 on probe

Grab sample (2x) from surface water in well and poured in clean container oily film/sheen noted on surface.

Paced of Roads, Hse, to compile map for DMM.

Onsite 1.5 hrs.

Masland 4/14/99
1-1391-1 TRO

DMM (4)

Onsite 08:00

opened well 11.5 ppm

oily sheen noted on interface probe
TOC 72.45'
Oil = 72.44'

Let house system pump for 11 minutes

	Time
2 - samples vials for 524.2	8:20
2 - sample vials for 8021	8:25

(7) Maxland 4/21/99
TFO

DMM
1-1391-1

onsite 12:30

Calibrate OVM
97 ppm span gas = 98 ppm OVM

opened up well cover 19.0 ppm OVM
Oil level 60.19 < .005 - oil/sheen
Water level 60.19

Grabbed water sample from Laundry Sink
Let System run for 10 min. before
collecting sample. Time Ana.
Sample time 13:10 524.2
Trip Blank 12:30 8021B

offsite 13:25

Attachment 2

Analytical Results

#1-139

SCITEST
LABORATORY SERVICES

ANALYTICAL REPORT

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313
(802) 728-6044 (fax)
http://www.scitestlabs.com

Johnson Company (The)
100 State Street
Montpelier, VT 05602

Work Order No.: 9904-01231

Project Name: Masland
Customer Nos.: 078611

Date Received: 4/02/99
Date Reported: 4/16/99

Near UST

Sample Desc.: soil - 19
Sample Nos: 001

Sample Date: 4/01/99
Collection Time: 16:10

Test Performed	Method	Results	Units	Analyst	Analysis Date
TPH, Estimated - Soil	EPA 8100 NOTE	28000	mg/kg	RJS	4/06/99
Volatiles, BTEX	EPA 8021B			JPM	4/06/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 100	ug/L	JPM	4/06/99
Benzene	EPA 8021B	< 100	ug/L	JPM	4/06/99
Toluene	EPA 8021B	750	ug/L	JPM	4/06/99
Ethylbenzene	EPA 8021B	1600	ug/L	JPM	4/06/99
Total Xylenes	EPA 8021B	7000	ug/L	JPM	4/06/99
1,3,5-Trimethylbenzene	EPA 8021B	8100	ug/L	JPM	4/06/99
1,2,4-Trimethylbenzene	EPA 8021B	13000	ug/L	JPM	4/06/99
Naphthalene	EPA 8021B	5500	ug/L	JPM	4/06/99
Surrogate: 8021B				JPM	4/06/99
***Bromofluorobenzene-8021B		100	% Recovery	JPM	4/06/99

NOTE: TPH analysis by Modified 8100 GC/FID.

NOTE: Microextraction with Diesel Fuel quantitation was done and reported value is the average of two values.

Authorized by: Dennis Lemothe

RECEIVED
APR 19 1999
JOHNSON CO. INC.
MONTPELIER, VT

1-0548-1

SCITEST
LABORATORY SERVICES

DMM

ANALYTICAL REPORT

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313
(802) 728-6044 (fax)
http://www.scitestlabs.com

Johnson Company (The)
100 State Street
Montpelier, VT 05602

Work Order No.: 9904-01272

Project Name: Masland, Calais VT
Customer Nos.: 078611

Date Received: 4/06/99
Date Reported: 4/23/99

20 near well DMM 4-26-99

Sample Desc.: ~~10~~ (3-4)
Sample Nos: 001

Sample Date: 4/05/99
Collection Time: 16:00

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/19/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/kg	JPM	4/19/99
Benzene	EPA 8021B	< 0.5	ug/kg	JPM	4/19/99
Toluene	EPA 8021B	< 1.0	ug/kg	JPM	4/19/99
Ethylbenzene	EPA 8021B	< 1.0	ug/kg	JPM	4/19/99
Total Xylenes	EPA 8021B	< 1.0	ug/kg	JPM	4/19/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/kg	JPM	4/19/99
1,2,4-Trimethylbenzene	EPA 8021B	1.5	ug/kg	JPM	4/19/99
Naphthalene	EPA 8021B	4.2	ug/kg	JPM	4/19/99
Surrogate: 8021B				JPM	4/19/99
***Bromofluorobenzene-8021B		89	% Recovery	JPM	4/19/99

NOTE: Soil sample was submitted in a 250 mL glass container provided by the client.

Authorized by: Joann Slubod

RECEIVED
APR 26 1999
JOHNSON CO. INC.
MONTPELIER

1-1391-1

SCITEST
LABORATORY SERVICES
P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313
(802) 728-6044 (fax)
http://www.scitestlabs.com

ANALYTICAL REPORT

Johnson Company (The)
100 State Street
Montpelier, VT 05602

Mr. Don Maynard

Project Name: Masland SMS # 961945
Customer Nos.: 078611

MASLAND WELL WATER SAMPLES

Work Order No.: 9904-01194

Date Received: 4/01/99
Date Reported: 4/06/99

Sample Desc.: Masland - In — Before TREATMENT SYSTEM
Sample Nos: 001
Sample Date: 3/30/99
Collection Time: 12:27

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/03/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Benzene	EPA 8021B	< 0.5	ug/L	JPM	4/03/99
Toluene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Ethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Total Xylenes	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
1,2,4-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Naphthalene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Surrogate: 8021B				JPM	4/03/99
***Bromofluorobenzene-8021B		91	% Recovery	JPM	4/03/99

Sample Desc.: Masland - Out — AFTER TREATMENT SYSTEM
Sample Nos: 002
Sample Date: 3/31/99
Collection Time: 16:11

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatile Organics by GC/MS	EPA 524.2			RJS	4/01/99
Bromodichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Bromoform	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Bromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Chlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Dibromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Chloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Chloroform	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Chloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
2-Chlorotoluene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
4-Chlorotoluene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2-Dichlorobenzene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Dibromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Dichlorodifluoromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,3-Dichlorobenzene (meta)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
cis 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
trans 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99

ANALYTICAL REPORT

Project Name: Masland SMS # 961945
Project No.: 078611

Work Order No.: 9904-01194

Sample Desc.: Masland - Out
Sample Nos: 002

Sample Date: 3/31/99
Collection Time: 16:11

Test Performed	Method	Results	Units	Analyst	Analysis Date
1,1-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Dichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
2,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,3-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
cis 1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,1-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Fluorotrichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Ethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Styrene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,1,1,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,1,2,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,1,2-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Tetrachloroethene (PCE)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2,3-Trichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Toluene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
m/p-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
o-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2,4-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Bromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
n-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
sec-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
tert-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Hexachlorobutadiene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Isopropylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Naphthalene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Propylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2,3-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2,4-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,3,5-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Benzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Bromobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Carbontetrachloride	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,2-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
P-Isopropyltoluene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,4-Dichlorobenzene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,1-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
trans-1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
1,1,1-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Trichloroethene (TCE)	EPA 524.2	<0.0005	mg/L	RJS	4/01/99

ANALYTICAL REPORT

Project Name: Masland SMS # 961945
Project No.: 078611

Work Order No.: 9904-01194

Sample Desc.: Masland - Out
Sample Nos: 002
Sample Date: 3/31/99
Collection Time: 16:11

Test Performed	Method	Results	Units	Analyst	Analysis Date
Vinyl Chloride	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Xylenes, Total	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Total Trihalomethanes	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Methyl tertiary Butyl Ether	EPA 524.2	<0.0005	mg/L	RJS	4/01/99
Surrogate:				RJS	4/01/99
Bromofluorobenzene		94	% Recovery	RJS	4/01/99

VOC Note: Sample 9904-1194-2 had traces of non-taget compounds
Acetone (0.007 mg/L) and MEK (0.003 mg/L).

Sample Desc.: Masland - Out D FIELD Duplicate - AFTER TREATMENT System
Sample Nos: 003
Sample Date: 3/31/99
Collection Time: 16:12

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/03/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Benzene	EPA 8021B	< 0.5	ug/L	JPM	4/03/99
Toluene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Ethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Total Xylenes	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
1,2,4-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Naphthalene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Surrogate: 8021B				JPM	4/03/99
***Bromofluorobenzene-8021B		95	% Recovery	JPM	4/03/99

Sample Desc.: Masland - Field Blank
Sample Nos: 004
Sample Date: 3/31/99
Collection Time: 16:14

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/03/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Benzene	EPA 8021B	< 0.5	ug/L	JPM	4/03/99
Toluene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Ethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Total Xylenes	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
1,2,4-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Naphthalene	EPA 8021B	< 1.0	ug/L	JPM	4/03/99
Surrogate: 8021B				JPM	4/03/99
***Bromofluorobenzene-8021B		95	% Recovery	JPM	4/03/99

ANALYTICAL REPORT

Project Name: Masland SMS # 961945
Project No.: 078611

Work Order No.: 9904-01194

Authorized by: Patrick Lamothe

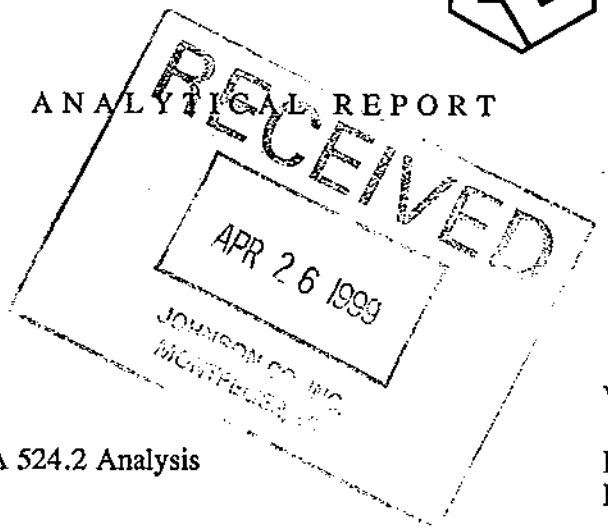
1-0548-1

SCITEST
LABORATORY SERVICES

DMN

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313
(802) 728-6044 (fax)
http://www.scitestlabs.com

ANALYTICAL REPORT



Johnson Company (The)
100 State Street
Montpelier, VT 05602

Attn: Don Maynard

Work Order No.: 9904-01306

Project Name: Masland - EPA 524.2 Analysis
Customer Nos.: 078611

Date Received: 4/08/99
Date Reported: 4/23/99

Sample Desc.: Laundry Room Sink
Sample Nos: 001

Sample Date: 4/07/99
Collection Time: 11:20

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatile Organics by GC/MS	EPA 524.2			RJS	4/13/99
Bromodichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Bromoform	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Bromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Chlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Dibromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Chloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Chloroform	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Chloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
2-Chlorotoluene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
4-Chlorotoluene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2-Dichlorobenzene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Dibromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Dichlorodifluoromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,3-Dichlorobenzene (meta)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
cis 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
trans 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Dichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
2,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,3-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
cis 1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Fluorotrichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Ethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Styrene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1,1,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1,2,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1,2-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Tetrachloroethene (PCE)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2,3-Trichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Toluene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99

ANALYTICAL REPORT

Project Name: Masland - EPA 524.2 Analysis
Project No.: 078611

Work Order No.: 9904-01306

Sample Desc.: Laundry Room Sink
Sample Nos: 001

Sample Date: 4/07/99
Collection Time: 11:20

Test Performed	Method	Results	Units	Analyst	Analysis Date
m/p-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
o-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2,4-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Bromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
n-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
sec-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
tert-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Hexachlorobutadiene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Isopropylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Naphthalene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Propylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2,3-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2,4-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,3,5-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Benzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Bromobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Carbontetrachloride	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,2-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
P-Isopropyltoluene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,4-Dichlorobenzene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
trans-1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
1,1,1-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Trichloroethene (TCE)	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Vinyl Chloride	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Xylenes, Total	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Total Trihalomethanes	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Methyl tertiary Butyl Ether	EPA 524.2	<0.0005	mg/L	RJS	4/13/99
Surrogate:				RJS	4/13/99
Bromofluorobenzene		95	% Recovery	RJS	4/13/99

Sample Desc.: Field Blank
Sample Nos: 002

Sample Date: 4/07/99
Collection Time: 11:25

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/18/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/L	JPM	4/18/99
Benzene	EPA 8021B	< 0.5	ug/L	JPM	4/18/99
Toluene	EPA 8021B	< 1.0	ug/L	JPM	4/18/99
Ethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/18/99

SCITEST
LABORATORY SERVICES

ANALYTICAL REPORT

Project Name: Masland - EPA 524.2 Analysis
Project No.: 078611

Work Order No.: 9904-01306

Sample Desc.: Field Blank
Sample Nos: 002

Sample Date: 4/07/99
Collection Time: 11:25

Test Performed	Method	Results	Units	Analyst	Analysis Date
Total Xylenes	EPA 8021B	< 1.0	ug/L	JPM	4/18/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/18/99
1,2,4-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/18/99
Naphthalene	EPA 8021B	< 1.0	ug/L	JPM	4/18/99
Surrogate: 8021B				JPM	4/18/99
***Bromofluorobenzene-8021B		86	% Recovery	JPM	4/18/99

Authorized by: Joann Silbood

SCITEST
LABORATORY SERVICES

1-1391-1

SCITEST
LABORATORY SERVICES

ANALYTICAL REPORT

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313
(802) 728-6044 (fax)
http://www.scitestlabs.com

Johnson Company (The)
100 State Street
Montpelier, VT 05602

RECEIVED
APR 30 1999
JOHNSON CO INC.
MONTPELIER, VT

Work Order No.: 9904-01456

Project Name: Masland
Customer Nos.: 078611

Date Received: 4/14/99
Date Reported: 4/29/99

Sample Desc.: Laundry Sink
Sample Nos: 001

Sample Date: 4/15/99
Collection Time: 8:20

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatile Organics by GC/MS	EPA 524.2			RJS	4/22/99
Bromodichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromoform	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dibromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chloroform	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chloromethane	EPA 524.2	0.0006	mg/L	RJS	4/22/99 — E 0.0030 mg/L
2-Chlorotoluene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
4-Chlorotoluene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2-Dichlorobenzene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dibromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dichlorodifluoromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,3-Dichlorobenzene (meta)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
cis 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
trans 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
2,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,3-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
cis 1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Fluorotrichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Ethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Styrene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,1,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,2,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,2-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Tetrachloroethene (PCE)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,3-Trichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Toluene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99

ANALYTICAL REPORT

Project Name: Masland
Project No.: 078611

Work Order No.: 9904-01456

Sample Desc.: Laundry Sink
Sample Nos: 001

Sample Date: 4/15/99
Collection Time: 8:20

Test Performed	Method	Results	Units	Analyst	Analysis Date
m/p-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
o-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,4-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
n-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
sec-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
tert-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Hexachlorobutadiene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Isopropylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Naphthalene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Propylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,3-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,4-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,3,5-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Benzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Carbontetrachloride	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
P-Isopropyltoluene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,4-Dichlorobenzene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
trans-1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,1-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Trichloroethene (TCE)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Vinyl Chloride	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Xylenes, Total	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Total Trihalomethanes	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Methyl tertiary Butyl Ether	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Surrogate:				RJS	4/22/99
Bromofluorobenzene		90	% Recovery	RJS	4/22/99

VOC NOTE: Non-target compound Acetone was detected in sample -001 at 0.011 mg/L.

Sample Desc.: Field Blank
Sample Nos: 002

Sample Date: 4/15/99
Collection Time: 8:25

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/20/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/L	JPM	4/20/99

ANALYTICAL REPORT

Project Name: Masland
Project No.: 078611

Work Order No.: 9904-01456

Sample Desc.: Field Blank
Sample Nos: 002

Sample Date: 4/15/99
Collection Time: 8:25

Test Performed	Method	Results	Units	Analyst	Analysis Date
Benzene	EPA 8021B	< 0.5	ug/L	JPM	4/20/99
Toluene	EPA 8021B	< 1.0	ug/L	JPM	4/20/99
Ethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/20/99
Total Xylenes	EPA 8021B	< 1.0	ug/L	JPM	4/20/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/20/99
1,2,4-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/20/99
Naphthalene	EPA 8021B	< 1.0	ug/L	JPM	4/20/99
Surrogate: 8021B				JPM	4/20/99
***Bromofluorobenzene-8021B		92	% Recovery	JPM	4/20/99

Authorized by: Patrick Lamotte

SCITEST
LABORATORY SERVICES

Masland

Scitest, Inc.
P.O. Box 339
Route 66 Professional Center, Randolph, VT 05060
Phone: (802)728-6313 Fax: (802)728-6044

Sample Logged in By: AWH
Anomaly Sheet: Y ____ N ✓

Preservative Check:
Temperature Check: cdc

Client: JCO
Address:

Contact
Phone Nos

Customer Nos:
Project:
Job Template:

Date requested:
Date scheduled:

CHAIN OF CUSTODY

*Sampled by:**	Date	Time	*Print Name Here:**	Date	Time
Relinquished by:			*Accepted by:*		
Relinquished by:			*Received by Scitest:* Amy Hendrickson Rod	4/14/99	16:35

Item Nos	Client ID or Description	Sample Date	Sample Time	Matrix	Preservative	Container Material	Container Volume	Containers per Sample	Parameters
1	Laundry Sink	4/14/99	8:20						524.2
2	Field Blank	14/4/99	8:25						8021B

SAMPLES MUST REACH THE LAB within ____ of sampling time to meet all holding times.

Parameters are correct as listed Client Initial: ____*
Please fill in ALL areas marked with an asterisk (*). Thank you.
Additional instruction if applicable are attached.

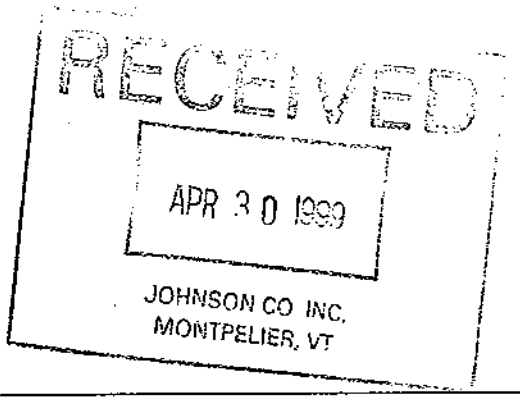
Scitest Work Order: 9904-01456

DMM 1-1391-1

SCITEST
LABORATORY SERVICES

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313
(802) 728-6044 (fax)
http://www.scitestlabs.com

ANALYTICAL REPORT



Johnson Company (The)
100 State Street
Montpelier, VT 05602

Work Order No.: 9904-01530

Project Name: Masland
Customer Nos.: 078611

Date Received: 4/21/99
Date Reported: 4/29/99

Sample Desc.: Laundry Sink
Sample Nos: 001

Sample Date: 4/21/99
Collection Time: 13:10

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatile Organics by GC/MS	EPA 524.2			RJS	4/22/99
Bromodichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromoform	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dibromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chloroform	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Chloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
2-Chlorotoluene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
4-Chlorotoluene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2-Dichlorobenzene (ortho)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dibromomethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dichlorodifluoromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,3-Dichlorobenzene (meta)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
cis 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
trans 1,2-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Dichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
2,2-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,3-Dichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
cis 1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Fluorotrichloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Ethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Styrene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,1,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,2,2-Tetrachloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,2-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Tetrachloroethene (PCE)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,3-Trichloropropane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Toluene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99

ANALYTICAL REPORT

Project Name: Masland
Project No.: 078611

Work Order No.: 9904-01530

Sample Desc.: Laundry Sink
Sample Nos: 001

Sample Date: 4/21/99
Collection Time: 13:10

Test Performed	Method	Results	Units	Analyst	Analysis Date
m/p-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
o-Xylene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,4-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromochloromethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
n-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
sec-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
tert-Butylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Hexachlorobutadiene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Isopropylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Naphthalene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Propylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,3-Trichlorobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2,4-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,3,5-Trimethylbenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Benzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Bromobenzene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Carbontetrachloride	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,2-Dichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
P-Isopropyltoluene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,4-Dichlorobenzene (para)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1-Dichloroethene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
trans-1,3-Dichloropropene	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
1,1,1-Trichloroethane	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Trichloroethene (TCE)	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Vinyl Chloride	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Xylenes, Total	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Total Trihalomethanes	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Methyl tertiary Butyl Ether	EPA 524.2	<0.0005	mg/L	RJS	4/22/99
Surrogate:				RJS	4/22/99
Bromofluorobenzene		94	% Recovery	RJS	4/22/99

Sample Desc.: Trip Blank
Sample Nos: 002

Sample Date: 4/21/99
Collection Time: 12:30

Test Performed	Method	Results	Units	Analyst	Analysis Date
Volatiles, BTEX	EPA 8021B			JPM	4/26/99
Methyl tertiary-Butyl Ether	EPA 8021B	< 1.0	ug/L	JPM	4/26/99
Benzene	EPA 8021B	< 0.5	ug/L	JPM	4/26/99
Toluene	EPA 8021B	< 1.0	ug/L	JPM	4/26/99
Ethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/26/99

ANALYTICAL REPORT

Project Name: Masland
Project No.: 078611

Work Order No.: 9904-01530

Sample Desc.: Trip Blank
Sample Nos: 002

Sample Date: 4/21/99
Collection Time: 12:30

Test Performed	Method	Results	Units	Analyst	Analysis Date
Total Xylenes	EPA 8021B	< 1.0	ug/L	JPM	4/26/99
1,3,5-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/26/99
1,2,4-Trimethylbenzene	EPA 8021B	< 1.0	ug/L	JPM	4/26/99
Naphthalene	EPA 8021B	< 1.0	ug/L	JPM	4/26/99
Surrogate: 8021B				JPM	4/26/99
***Bromofluorobenzene-8021B		99	% Recovery	JPM	4/26/99

Authorized by: Patricia Smith

SCITEST
LABORATORY SERVICES

Scitest, Inc.
P.O. Box 339
Route 66 Professional Center, Randolph, VT 05060
Phone: (802)728-6313 Fax: (802)728-6044

Sample Logged In By: _____ Preservative Check:
Anomaly Sheet: Y____ N____ Temperature Check: cold

Client: ~~AA~~ THE JOHNSON COMPANY
Address: 100 State St, Suite 600
Montpelier VT 05602

Contact Don Maynard
Phone Nos 229-4600
Fax ~~229~~-5876

Customer Nos: 1-1391-1
Project: MASLAND
Job Template:

Date requested:
Date scheduled:

CHAIN OF CUSTODY

Sampled by:*	Date	Time	Print Name Here:* Don MAYNARD	Date	Time
Relinquished by:	4-2-99	8:32	Accepted by:		
Relinquished by:			Received by Scitest: Anne Bouchia	4/2/99	8:32

Item Nos	Client ID or Description	Sample Date	Sample Time	Matrix	Preservative	Container Material	Container Volume	Containers per Sample	Parameters
1	SOIL-19	4-1-99	16:10	SOIL	ICE	Glass	500 ML	1	Limited. TPH 8100 Fuel Oil #2
2	SOIL-19	4-1-99	16:10	SOIL	ICE	Glass	300ML	1	8021B VOCs - 7 DAY Turnaround time

SAMPLES MUST REACH THE LAB within _____ of sampling time to meet all holding times.

Parameters are correct as listed Client Initial: _____*
Please fill in ALL areas marked with an asterisk (*). Thank you.
Additional instruction if applicable are attached.

Scitest Work Order:

CHAIN OF CUSTODY RECORD

№ 2462

Client/Project Name	Project Location
MASLAND SMS#961945	CALAIS, VT
Project No. 1-1391-1	**Field Logbook No.** DMM#23A
Sampler: (Signature) [signature]	**Chain of Custody Tape No.**

ANALYSES: EPA 524.2 - 72 hr TAT; 8021B - normal TAT

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA 524.2 - 72 hr TAT	8021B - normal TAT					REMARKS
MASLAND-IN	3-30-99	12:27		water 2 VOAS							Pre-treatment
MASLAND-OUT	3-31-99	16:11		↓	✓						Post treatment
MASLAND-OUT-D	3-31-99	16:12		↓		✓					post treatment
F. BLANK	3-31-99	16:14		↓		✓					
						✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	4-1-99	8:02	[signature]	4/1/[illegible]	[illegible]
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
Sample Disposal Method:			Disposed of by: (Signature)	Date	Time

SAMPLE COLLECTOR

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
5 State Street
Montpelier, VT 05602
(802) 229-4600
Fax: (802) 229-5876

ANALYTICAL LABORATORY Scitest

Results + invoice to Don Maynard
FAX 802-229-5876
72 hr turn-around time on 524.2
normal TAT on 8021B

1974-3-84

WHITE - To accompany sample to the lab and returned to the Johnson Co. YELLOW - Lab copy PINK - Transporter copy ORANGE - Sampler copy

Scitest, Inc.
P.O. Box 339
Route 66 Professional Center, Randolph, VT 05060
Phone: (802)728-6313 Fax: (802)728-6044

Sample Logged in By: AMH
Anomaly Sheet: Y ___ N ___
Preservative Check:
Temperature Check: (cold)

Client: MASLAND
Address: CALAIS, VT

Contact: Don Maynard
Phone Nos: 229-4600

Customer Nos: 1-1391-1
Project: MASLAND
Job Template:

Date requested:
Date scheduled:

CHAIN OF CUSTODY

	Date	Time	Print Name Here:*	Date	T
Sampled by:* Bob Osborne					
Relinquished by: Bob Osborne	4/5/99	16:30	Accepted by:	4-5-99	4
Relinquished by:	4-5-99	16:30	Received by Scitest: Amy Hunterschlue	4/6/99	1

Item Nos	Client ID or Description	Sample Date	Time	Matrix	Preservative	Container Material	Container Volume	Containers per Sample	Parameters
1	28-(3-4)	4/5/99	16:00	SOIL	ICE	GLASS	250mL	1	8021B FOR VOCS
	VM 4/26/99			water	HCl	GLASS	40 ML	2	8021B FOR VOCS TR

SAMPLES MUST REACH THE LAB [illegible] correct as listed Client Initial: ___
eas marked with an asterisk (*). Thank you.
on if applicable are attached.

Scitest Work Order: 9904-01272

Post-it® Fax Note 7671 | Date 4/27/99 | # of pages ▶ 3
To Don Maynard | From Amy
Co./Dept Johnson Co. | Co. Scitest
Phone # | Phone # 802-728-6313
Fax # 802-229-5876 | Fax #

RECEIVED
APR 27 1999

Page __ of __

P. 1
FAX NO. 8027286044
APR-27-99 TUE 8:46 AM SCITEST

CHAIN OF CUSTODY RECORD

№ 1827

Client/Project Name	Project Location
Maslant	North Montpelier, VT
Project No.	**Field Logbook No.**
1-1391-1	TFO-4
Sampler: (Signature)	**Chain of Custody Tape No.**
[signature]	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES: EPA 524.2	ANALYSES: 8021B	REMARKS
Laundry Rm sink	4/7/99	11:20		Water	2		
Field Blank	"	11:25		DI water		2	← Analyze only for VOCs Detected in Sample

	Date	Time		Date	Time
Relinquished by: (Signature) [signature]	4/7/99	13:25	Received by: (Signature) [signature]	4/7/99	13:25
Relinquished by: (Signature) [signature]	4/8/99	7:48	Received by: (Signature)		
Relinquished by: (Signature)			Received for Laboratory: (Signature) [signature]	04-08-99	7:50
Sample Disposal Method:			Disposed of by: (Signature)		

SAMPLE COLLECTOR

5 State Street
Montpelier, VT 05602
(802) 229-4600
Fax: (802) 229-5876

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

ANALYTICAL LABORATORY SCITEST

RESULTS + INVOICE TO
DON MAYNARD
THE JOHNSON CO.

1974-3-84

WHITE - To accompany sample to the lab and returned to the Johnson Co. YELLOW - Lab copy PINK - Transporter copy ORANGE - Sampler copy

CHAIN OF CUSTODY RECORD

No. 1836

Client/Project Name	Project Location
Masland	North Montpelier, VT
Project No.	**Field Logbook No.**
1-1391-1	TRO-5
Sampler: (Signature)	**Chain of Custody Tape No.**

ANALYSES: EPA 524.2; 8021B

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
Laundry Sink	4/14/99	8:20	—	Grd Water	2						
Field Blank	4/14/99	8:25	—	DI Water		2					~~Analyze only~~

	Date	Time		Date	Time
Relinquished by: (Signature)	4/14/99	13:00	Received by: (Signature)	4/14/99	13:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	4/14/99	16:40	Received for Laboratory: (Signature)	04/14/99	1635
Sample Disposal Method:			Disposed of by: (Signature)	Date	Time

SAMPLE COLLECTOR

5 State Street
Montpelier, VT 05602
(802) 229-4600
Fax: (802) 229-5876
THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

ANALYTICAL LABORATORY

Results + invoice
TO Don Maymards

1974-3-84

WHITE - To accompany sample to the lab and returned to the Johnson Co. YELLOW - Lab copy PINK - Transporter copy ORANGE - Sampler copy

CHAIN OF CUSTODY RECORD

No. 1829

Client/Project Name	Project Location
Masland	North Montpelier, VT
Project No.	**Field Logbook No.**
1-1391-1	TRO-5
Sampler: (Signature)	**Chain of Custody Tape No.**

ANALYSES: 524.2; 8021B

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
Laundry Sink	4/21/99	13:10	—	well water	2						
Trip Blank	4/21/99	12:30	—	DI water		1					

	Date	Time		Date	Time
Relinquished by: (Signature)	4/21/99	14:00	Received by: (Signature)	4/21/99	14:00
Relinquished by: (Signature)	4/21/99	16:01	Received by: (Signature)		
Relinquished by: (Signature)			Received for Laboratory: (Signature)	4/21/99	16:00
Sample Disposal Method:			Disposed of by: (Signature)		

SAMPLE COLLECTOR

5 State Street
Montpelier, VT 05602
(802) 229-4600
Fax: (802) 229-5876

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

ANALYTICAL LABORATORY

Sci Test
RESULTS TO DON MAYNARD

1974-3-84

WHITE - To accompany sample to the lab and returned to the Johnson Co. YELLOW - Lab copy PINK - Transporter copy ORANGE - Sampler copy

Scitest, Inc.
P.O. Box 339
Route 66 Professional Center, Randolph, VT 05060
Phone: (802)728-6313 Fax: (802)728-6044

Sample Logged in By: AW
Anomaly Sheet: Y ____ N ✓

Masland

Preservative Check:
Temperature Check: cold

Client: Johnson Company, Inc.
Address:

Contact
Phone Nos

Customer Nos:
Project:
Job Template:

Date requested:
Date scheduled:

CHAIN OF CUSTODY

Sampled by:*	Date	Time	Print Name Here:*	Date	Time
Relinquished by:			Accepted by:		
Relinquished by:			Received by Scitest: Amy Ventrachka	4/21/99	16:00

Item Nos	Client ID or Description	Sample Date	Sample Time	Matrix	Preservative	Container Material	Container Volume	Containers per Sample	Parameters
1	Laundry Sink	4/21/99	13:10	GW	HCl	Glass	40ml	2	EPA 524.2
2	Trip Blank	4/21/99	12:30	WA	HCL	Glass	40ml	1	EPA 8021B

SAMPLES MUST REACH THE LAB within _____ of sampling time to meet all holding times.

Parameters are correct as listed Client Initial: _____*
Please fill in ALL areas marked with an asterisk (*). Thank you.
Additional instruction if applicable are attached.

Scitest Work Order: 9904-01530

Attachment 3

Cost Estimates

Petroleum Site Corrective Action at the Masland Site, Calais, Vermont, SMS Site #96-1945
Scope of Work Including Rough Cost Estimates
Prepared by The Johnson Company, Inc.

4/20/99 corr-cst.wb2 DMM

Items	Personel/ Equipment	Billing Rate/Unit	Number of Units	Estimated Cost	
Corrective Action Plan, Cost Comparisons and Scheduling					
	Senior Scientist	$67.00	6 hours	$402	
	Staff Scientist	$50.00	6 hours	$300	
	Secretary	$35.00	1 hour	$35	
	Sr. Draftsperson	$54.00	1 hours	$54	
	Supplies	$40.00	1 misc.	$40	
		Subtotal Cost			$831
Soil Removal, Testing, and Off-site Disposal					
Supervise Excavation	Senior Scientist	$67.00	10 hours	$670	
Supervise Loading for Transport	Staff Scientist	$50.00	4 hours	$200	
	Mileage	$0.35	50 miles	$18	
	PID/MGI	$105.00	1 days	$105	
	Photographs	$0.56	24 photos	$13	
	PPE and Decon. Supplies	$25.00	1 unit	$25	
Soil confirmation testing	EPA Methods 8021B/8100	$140.00	3 samples	$420	
	polyethylene for temporary storage	$75.00	1 roll	$75	
	Rough Estimate- dump truck	$45.00	4 hours	$180	
Soil Excavation/loading	Rough Estimate-Back hoe/operator	$75.00	10 hours	$750	
Soil Disposal/treatment	Rough Estimate	$25.00	5 tons	$125	
Soil Transport	Rough Estimate	$500.00	1 load	$500	
		Subtotal Cost			$3,081
Water Supply Well Cleaning					
	Senior Scientist	$67.00	8 hours	$536	
	Staff Scientist	$50.00	16 hours	$800	
	Mileage	$0.35	50 miles	$18	
	PID	$75.00	2 days	$150	
Dedicated pump for well cleaning	Rough Estimate	$150.00	2 days	$300	
	PPE and Decon. Supplies	$50.00	1 item	$50	
	Steam Cleaner	$75.00	2 days	$150	
Activated carbon drum and disposal	Rough Estimate	$600.00	1 drum	$600	
Well pump pipe and wire replacement	Johnson's Artesian Well drilling	$350.00	1 item	$350	
		Subtotal Cost			$2,954
Water Supply Well Water Quality Monitoring					
	Senior Scientist	$67.00	1 hours	$67	
	Staff Scientist	$50.00	8 hours	$400	
	Mileage	$0.35	125 miles	$44	
	Disposable bailers	$12.00	5 bailers	$60	
	PID	$75.00	5 days	$375	
	PPE and Decon. Supplies	$20.00	5 days	$100	
	EPA Method 524.2	$165.00	9 samples	$1,485	
	EPA Method 8021B	$65.00	9 blanks	$585	
		Subtotal Cost			$3,116
Report Preparation	Senior Scientist	$67.00	12 hours	$804	
	Staff Scientist	$50.00	12 hours	$600	
	Sr. Draftsperson	$54.00	1 hours	$54	
	Secretary	$35.00	1 hours	$35	
	Office Supplies	$30.00	1 misc.	$30	
	Administration	$67.00	1 hours	$67	
		Subtotal Cost			$1,590
				TOTAL	$11,571