PHASE II REPORT

August 1996

Purcell Oil Company Site
White River Junction, Vermont
Site #96-1947

Prepared for:

Mrs. Maxine Cummings
Fairfax, Virginia

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

100 State Street, Suite 600
Montpelier, Vermont 05602
802.229.4600/Fax 5876

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

August 15, 1996

Mr. Matt Moran
Sites Management Section
Vermont Department of Environmental Conservation
Agency of Natural Resources
103 South Main Street
Waterbury, VT 05671

Re: Purcell Oil, White River Junction, Vermont. DEC #Site 96-1947
JCO #3-0304-2 (042)

Dear Mr. Moran:

Enclosed is the report on our Phase II investigation performed on the Purcell Oil Site at 10 Main Street, White River Junction, Vermont. Please contact me should you have any questions or comments.

Sincerely,

THE JOHNSON COMPANY, INC.

By: Jim Bowes
James R. Bowes
Senior Scientist

attachment

cc: Maxine Purcell Cummings

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EXECUTIVE SUMMARY

The former Purcell Oil Company is located at 10 South Main Street, White River, Vermont. This site operated for approximately 60 years (beginning c.a. 1930) as a bulk petroleum fuel sales and distribution center. At the request of the current owner, Mrs. Maxine Purcell Cummings, The Johnson Company performed a Phase I and Phase II investigations on this property. The Phase I and Phase II Johnson Company investigations originated after we reviewed previous environmental site assessment reports performed by others on this property for the Federal Deposit and Insurance Corporation (FDIC) related to the FDIC's property transfer and acclamation procedures. An estimated $400,000 in remediation had been recommended by the consultant with respect to cleaning up petroleum related soils contamination discovered through the performance of the ESAs.

At the current owner's request, The Johnson Company performed a professional review of the ESA reports in October 1995 and recommended, based upon this review that a Phase I Investigation was in order, which we performed in January 1996. The Phase I investigation consisted of sampling the existing network of groundwater monitoring wells (installed in April 1994 by others) and submitting samples to an environmental test laboratory for analyses for volatile organic compounds (VOCs) and metals. Samples were also analyzed for the thirteen Priority Pollutant metals. As a result of our Phase I investigation, we identified two areas of concern associated with this Site: 1) the presence of light non-aqueous phase liquid (LNAPL) in monitoring well MW-1; and 2) concentrations of the metals lead, antimony and thallium that exceeded their respective Vermont Groundwater Enforcement Standard and/or Federal Maximum Contaminant Level (MCL). The Phase I report was submitted to the Sites Management Section (SMS) of the Vermont Waste Management Division. and MW-3.

The Phase II investigation was performed in June 1996 in order to further characterize the areas of concern delineated at this Site, and also, to sample for presence of SVOC in water as requested by the SMS. Of the locations tested, monitoring well MW-1 had the most reported SVOC compounds (10) in groundwater, which is not surprising given that this well has LNAPL in it. None of the detected compounds however, were present above their respective Enforcement Standards or MCLs. With the exception of monitoring well MW-3, SVOCs were not reported at any of the other monitoring wells above the limit of analytical detection (5 ppb), indicating that contamination with respect to SVOCs at this site is limited to monitoring well MW-1. No further testing is recommended for these compounds. I concur
The Johnson Company recommends the following in relation to further action at this Site:

- Continue with quarterly groundwater monitoring at MW-2, consisting of sampling and analyses for lead in water at this location only. Should lead concentrations be reported below the present Vermont PAL of 10 $\mu g/L$ for two successive sampling intervals, then monitoring could cease;
- Continue quarterly monitoring for presence of LNAPL in MW-1 and if detected, bail into 55 gallon drum installed for this purpose. Install an oil absorbant sock into this well to promote passive product recovery. If the LNAPL thickness is reduced to a thickness of less than or equal to 0.01 feet, then the quarterly monitoring could cease, and the site be designated Sites Management Activity Complete (SMAC).

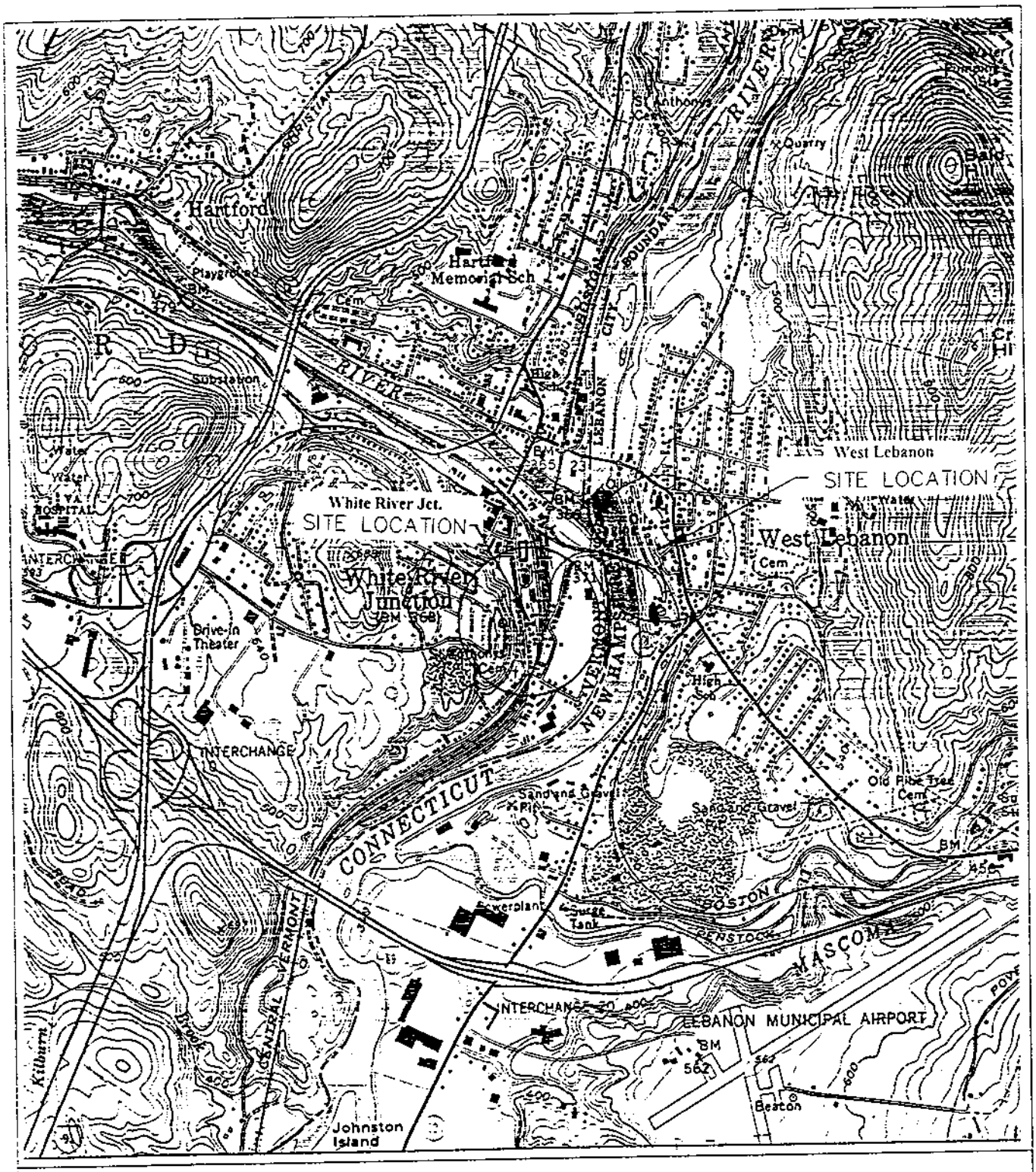
1.0 INTRODUCTION

A Phase II investigation has been performed by The Johnson Company, Inc., Montpelier, Vermont, for Mrs. Maxine Purcell Cummings, (Fairfax, Virginia) at the former Purcell Oil Company site located at 10 South Main Street, White River Junction Vermont (the Site). Figure 1 shows the location of the Site with respect to the regional surroundings.

2.0 BACKGROUND

This investigation was undertaken based upon the findings and recommendations made in a document titled "Phase I Report, Purcell Oil Company Site, White River, Vermont, Site #96-1947"(the Phase I report,) dated February 1996 by The Johnson Company. The Phase I report, which was submitted to the Sites Management Section (SMS) of the Vermont Department of Environmental Conservation Waste Management Division, described the results of laboratory analysis of groundwater samples collected from the existing network of groundwater monitoring wells on February 8, 1996. Analyses were performed for volatile organic compounds (VOCs) using EPA Method 8021 (aromatics only) and for the Priority Pollutant metals (PP13). None of the VOCs tested for were reported at concentrations exceeding their respective State and Federal guideline concentrations. Of the compounds tested for by the PP13 analyses, the metals lead, antimony and thallium were reported at concentrations exceeding their State and/or Federal guidelines. Light non-aqueous phase liquid (LNAPL) was measured in one location (MW-1) in the southeast corner of the Site (Figure 2).

The SMS concurred with the findings and recommendations presented in the Phase I report, and had the following comments: 1) if not previously analyzed, semi-volatile organic compounds (SVOCs) should be tested for at this Site; 2) the degree of remedial action required at this site should be based on the extent of risk presented by the product measured on groundwater at monitoring well MW-1; and, 3) although no Vermont Enforcement Standards are in effect for some of the compounds detected in groundwater at this site (thallium and antimony), there are presently Federal Maximum Contaminant levels (MCLs) for these compounds that the State uses for determining regulatory action.



BASE MAP : USGS 7.5 Minute Topographic Quadrangle: Hanover, NH photorevised 1959

FIGURE 1: Location Map
Purcell Oil Company
White River Junction, VT and W. Lebanon, NH

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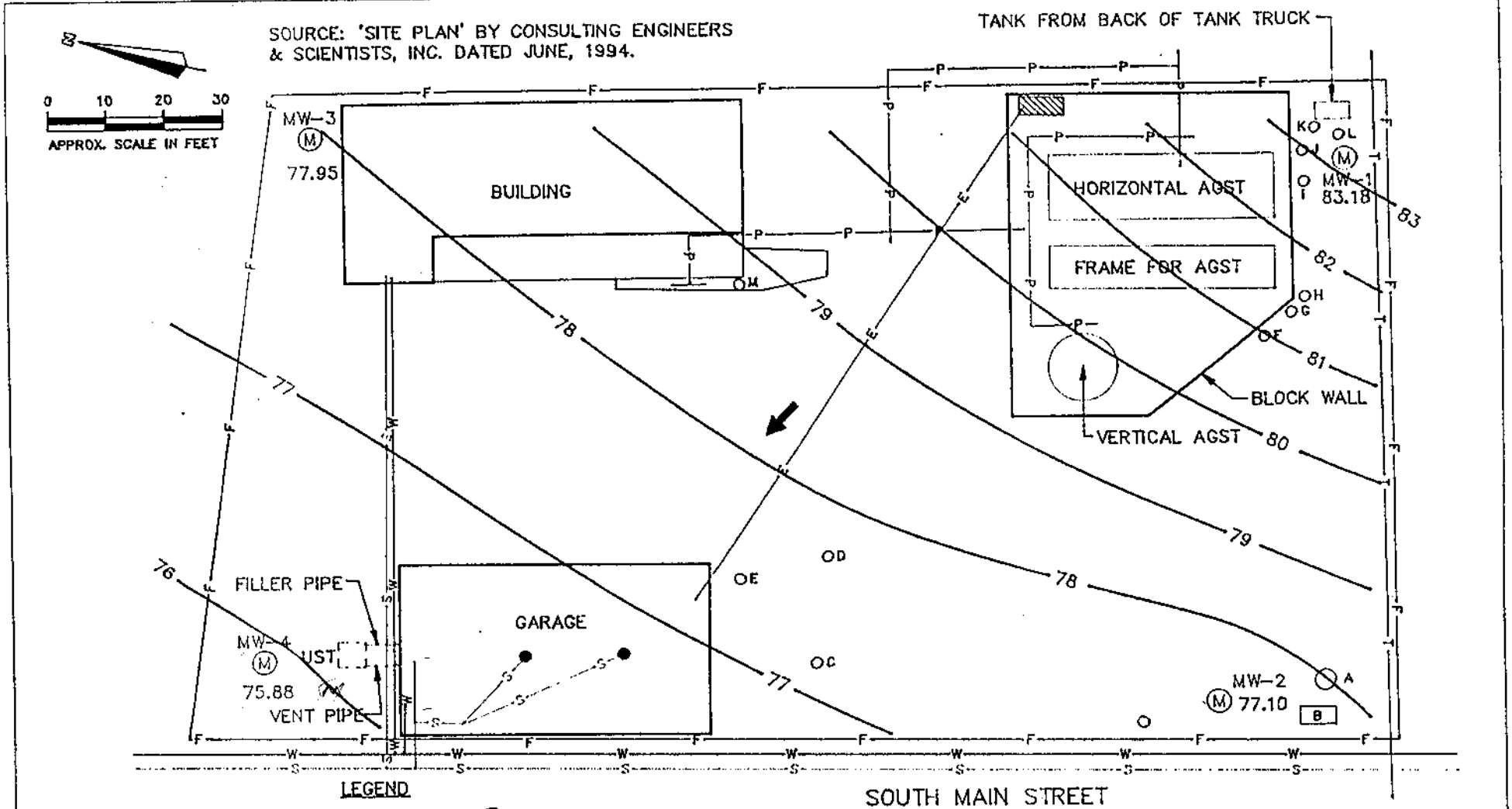

LEGEND

AGST	ABOVE GROUND STORAGE TANK
UST	UNDERGROUND STORAGE TANK
OA	DRUM OR TANK
●	FLOOR DRAIN
——S——	SEWER LINE
——W——	WATER LINE
——E——	ELECTRICAL LINE
——T——	TELEPHONE LINE
——F——	FENCELINE
——P——	PIPING FOR OIL TERMINAL
Ⓜ	MONITORING WELL LOCATION
75.88	6/6/96 GROUNDWATER ELEVATION (ft)
———	6/6/96 GROUNDWATER CONTOUR (ft)
➡	ESTIMATED GROUNDWATER FLOW DIRECTION

NOTES

1) ALL LOCATIONS ARE APPROXIMATE.

2) ELEVATIONS BASED ON A RELATIVE DATUM.

3-0304-2\GW020896.dwg

FIGURE 2 – GROUNDWATER CONTOUR MAP
PURCELL PROPERTY
WHITE RIVER JUNCTION, VERMONT

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A Phase II investigation was designed to 1) further test the groundwater for metals reported in exceedance of State and Federal guideline concentrations by the Phase I investigation, and 2) to test for the presence of SVOCs as requested by the SMS. Furthermore, the LNAPL in monitoring well MW-1 was investigated to formulate the most appropriate remedial action for reducing its thickness and persistence.

3.0 PHASE II METHODOLOGY

3.1 LNAPL TESTING AND REMEDIATION

LNAPL was first observed in monitoring well MW-1 located closest to the aboveground storage tanks (Figure 2) during the Phase I investigation performed by The Johnson Co. on January 4, 1996. Subsequent measurements have shown the LNAPL thickness to fluctuate from 0.03 to a thickness up to 0.16 feet recorded in this well. The fluctuations of the LNAPL thickness in MW-1 are summarized in the hydrograph in Figure 3.

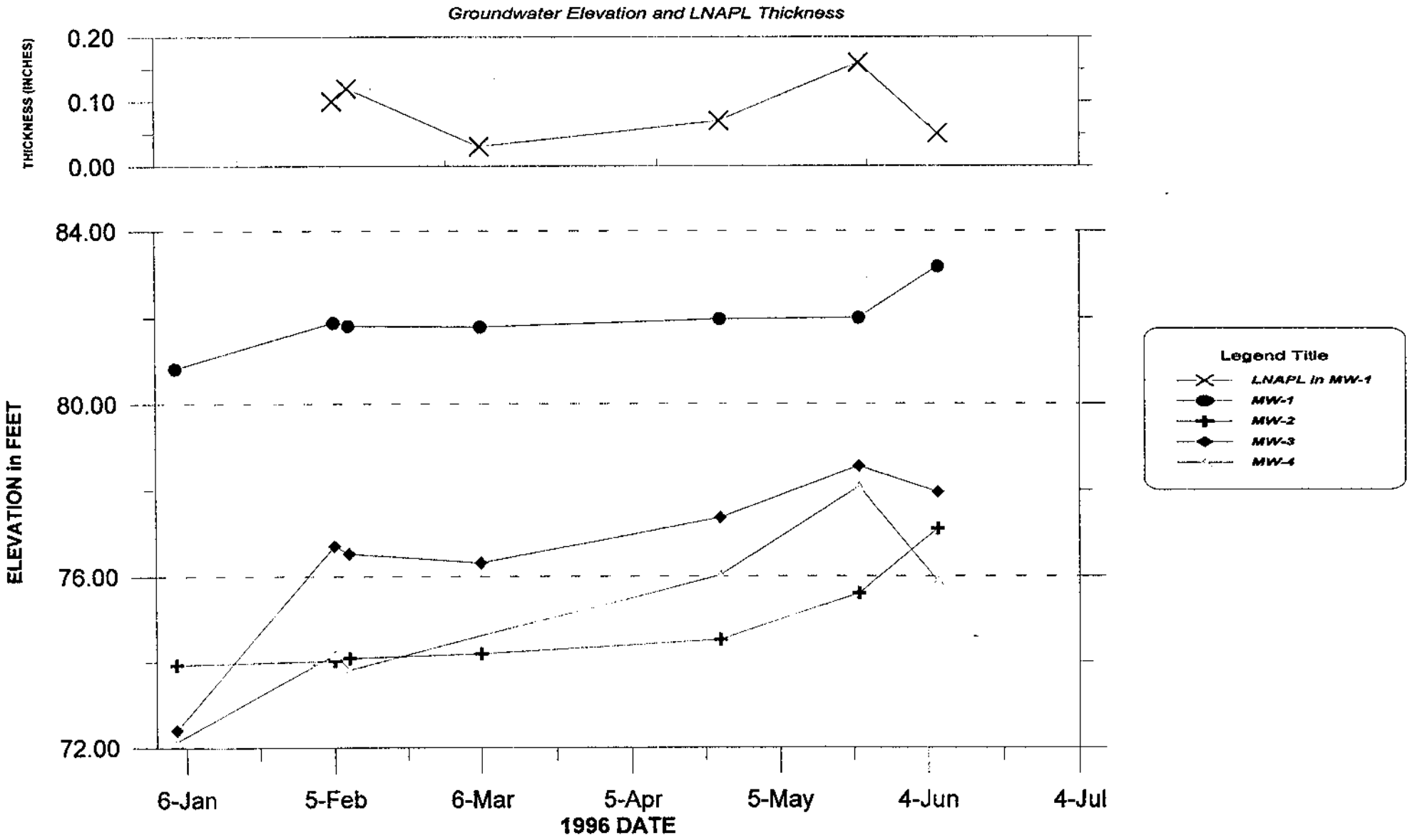
→ not a "hydrograph" - needs plot of discharge vs. time

A sample of the LNAPL was collected on March 6, 1996 by The Johnson Company and sent for laboratory analyses to Friedman and Bruya Inc., Environmental Chemists (FBI; Seattle, Washington). The analytical report is included as Attachment 1. The LNAPL sample was analyzed for the presence of hydrocarbons by capillary Gas Chromatography using a Flame Ionization Detector (GC/FID), and electron capture detector (GC/ECD). FBI reported that the product appeared to be either diesel or home heating oil. The product was estimated by FBI to be two to five years old, and had undergone considerable chemical/biological degradation (Attachment 1). Because of the thin nature of this LNAPL layer, FBI added that the material should continue to degrade at a moderate to high rate.

Based upon this analysis, and the fact that the LNAPL is localized at monitoring well MW-1 (none of the other wells have been indicated with LNAPL in them), The Johnson Company designed a "low-impact" remediation plan, incorporating manual product bailing to reduce the LNAPL layer. Upon measuring the thickness of the layer, the contents are bailed, and disposed of into a 55 gallon drum. Manual bailing of this well is continuing on an approximate monthly basis.

FILENAME: GWLEVL.GRF
PROJECT: 3-0304-2

FIGURE 3
PURCELL OIL COMPANY
WHITE RIVER, VERMONT



3.2 GROUNDWATER QUALITY SAMPLING

– was slow purge technique used @ w/ 2/9/96 event – Yes!

On June 6, 1996 the network of monitoring wells was re-sampled for the metals lead, thallium, and antimony, and for the presence of SVOCs using EPA Method 8270. The three metals were re-tested since they were reported previously at this site in concentrations exceeding their respective State and Federal guideline concentrations.

Prior to collecting the sample, depth to groundwater and non aqueous phase liquid (NAPL) measurements were made at each location using an ORS™ interface probe. These data were used to calculate water table elevations which were plotted as a hydrograph, and also contoured, for determination of the direction of groundwater flow and hydraulic gradient.

Groundwater samples were collected using modifications of the slow purge sampling techniques described in EPA Standard Operating Procedure (SOP)-GW-0001. The modifications were related to higher purging/sampling flow rates than was intended, and lack of turbidity data, due to problems with the sensor. A Grundfos Redi-Flo II™ pump and polyethylene (PE) tubing was used for sample collection, and a Hydrolab H2O® Multiprobe was the sensor used to monitor field parameters.

The pump, fittings and dedicated tubing were installed into each well following thorough decontamination of the pump and fittings. Individual lengths of PE tubing were dedicated to each sampling location. Each monitoring well was sampled by pH, temperature, and specific conductance as groundwater from each well was pumped at as slow a rate of flow as possible. The Hydrolab Multiprobe was connected to a laptop computer, which provided the display for reading the parameters. One of the key indicator parameters to monitor during slow purge sampling is turbidity. The sample should be collected during the purge process when the lowest and most stable turbidity readings are indicated. Problems with the turbidity sensor were encountered due to light interfering with the turbidity lamp chamber inside the flow cell, which caused sporadic and off-scale readings. Because turbidity readings were not available to indicate when the sample should be collected, once the pH, temperature and conductivity equilibrated, with three consecutive readings within 10% of each other, the conditions were considered stabilized and sampling commenced.

The flow rate was monitored manually. During purging it was anticipated that approximately 500 to 800 mL/min flow rate could be maintained without causing significant drawdown. The Grundfos pump could not operate at such low flow rates, however, and a higher than anticipated flow rate was required. However, the field indicator parameters showed sufficient stabilization such that a representative sample was collected at each location.

The groundwater samples were collected for SVOCs in one-liter amber glass jars, and for metals, in a one-liter plastic sample bottle, preserved with nitric acid (HNO^3). The bottles were stored chilled in an ice chest for same day delivery to Scitest Laboratory Services, Inc. Randolph, Vermont

4.0 RESULTS

4.1 GROUNDWATER HYDRAULICS

The groundwater measurements collected during the past six months by The Johnson Company demonstrated a highly transient groundwater flow regime, with flow reversals noted on more than one occasion. A summary of the water table fluctuations measured at the Site since January 1996 is depicted in the hydrograph of groundwater elevations and LNAPL thickness with time (Figure 3). An overall increase in the water table elevation is evident through the period of water level monitoring. Given the abnormally wet Vermont spring this year with an abundance of rainfall precipitation, there has been abundant groundwater recharge, which has contributed to higher water tables across the State.

→ may want a follow-up sampling round due to water elevation changes

Water level measurements collected on June 6, 1996 indicate a northwest groundwater flow direction at an estimated hydraulic gradient (slope) of 0.062 feet/foot. The gradient flattens significantly with distance from monitoring well MW-1 (Figure 2). Previous investigators have indicated this well is on a perched water table (Consulting Engineers & Scientists, Inc., 1994). The hydrograph in Figure 3 illustrates that water table fluctuations in monitoring well MW-1 are consistent with monitoring well MW-2 (located approximately 95 feet west), and without considering the data from monitoring well MW-1 (although the gradient is flatter) the groundwater flow direction is the same between locations monitoring wells MW-2, 3, and 4. Therefore the water table in monitoring well MW-1 appears to be connected, and should be considered as part of the overall groundwater flow regime .

The groundwater flow direction measured at this Site is not consistent with what would be expected, that is, the steeper topography to the west of the Site (Figure 1) would imply that the groundwater flow direction would be away from the relief and toward the Connecticut River (located approximately 1,000 feet east of the Site). However, the presence of a buried telephone utility line in the immediate vicinity of MW-1 (Figure 2) may provide a preferential pathway (i.e. crushed stone backfill) along which localized recharge occurs, causing mounding which creates a localized flow regime away from MW-1.

4.2 WATER QUALITY

Scitest's laboratory reports are included with this document as Attachment 2. As mentioned earlier in this report, one of the main objectives of this investigation was to compare groundwater quality data to the previous results obtained at this site. A summary of the groundwater sampling conditions/parameters is listed in Table 1. The results of the June 6, 1996 groundwater metals sampling are summarized in Table 2.

TABLE 1
Purcell Oil Company, White River Jct., Vermont
Groundwater Slow Purge Sampling Parameters
June 6, 1996

Location	Time	Purge Volume (mL)	Flow Rate ml/min	Turbidity (NTU)	Temp (c)	pH	Specific Conductance MicroMhos/cm
MW-1	13:53	4,000	3,200	(1)	N.M.(2)	N.M.	N.M.
MW-2	12:43	5,000	1,818	(1)	12.13	6.2	568
MW-3	11:46	3,000	1,200	(1)	10.54	6.9	617
MW-4	11:10	8,000	758	(1)	11.70	6.8	840

(1) Due to problems with sensor, turbidity was not able to be recorded.
(2) N.M. = Not Measured due to presence of LNAPL in well.

TABLE 2
Purcell Oil Company, White River, Vermont
Summary of Metal Concentrations in Groundwater
Concentration in milligrams per Liter

Location/Date	Metal		
	Antimony	Lead	Thallium
Standard	0.006 (1) (2)	0.015 (2)(3)	0.002 (1) (2)
MW-1			
4/21/94	0.011	0.12	<0.002
2/5/96	0.044	0.05	<.002
6/6/96	<0.003	0.005	<0.001
MW-2			
4/21/94	0.012	0.22	0.004
2/5/96	0.031	0.066	0.005
6/6/96	<.003	0.013	<.001
MW-3			
4/21/94	0.009	0.055	0.002
2/5/96	0.023	0.058	<.002
6/6/96	<.003	0.004	<.001
MW-4			
4/21/94	0.011	0.097	0.004
2/5/96	0.040	0.094	0.020
6/6/96	<.003	0.007	<.001

(1) Maximum contaminant level (MCL)
(2) Draft VT enforcement Standard
(3) Vermont Health Department Action Level

4.2.1 Metals

With regard to metals concentrations in groundwater tested on June 6, lead was reported in each well at concentrations ranging between 0.007 milligrams per liter (mg/L) to 0.013 mg/L. The State of Vermont Enforcement Standard for lead is 0.020 mg/L (note that the Vermont Health Department Action Level is the proposed enforcement standard of 0.015). The metals antimony and thallium which had been previously reported above DLs in the February sampling, were not reported above the limit of analytical detection (0.003 mg/L for antimony; 0.001 mg/L for thallium).

Based upon results of the three rounds of sampling, two which were performed by The Johnson Company, some preliminary trends are indicated. Antimony increased in concentration following the initial sampling in 1994 by CES (1994), then decreased sharply in June 1996. Lead in groundwater appears to be steadily declining, with the most recent analyses reporting lesser concentrations by an order of magnitude (except at MW-3). The sharp reduction in overall metals concentrations may be related to the variable groundwater flow regime indicated at this site, and in conjunction with the heavy recharge by rainfall precipitation this year.

4.2.2 Semi Volatile Organics

The SVOCs were tested using EPA Method 8270. Results of the M8270 analyses were reported by Scitest and have been summarized in Table 3. Scitest's analytical report is included as Attachment 2.

Table 3
Purcell Oil Co., White River, VT
Summary of Detected Semi Volatile Organics in Groundwater[1]
Concentration in Micrograms per Liter (μg/L)

Location	Compound	Concentration	Standard
MW-1	Acenapthene	5	NA[2]
	2-Methylnapthalene	21	NA
	Naphthalene	11	20[3]
	Phenol	27	NA
	3 and 4-Methylphenol	36	NA
	Diethylphthalate	8	NA
	N-Nitrosodiphenylamine	12	NA
	Flourene	8	NA
	Phenanthrene	6	NA
	2,4-Dinitrophenol	10	NA
MW-2	None reported		
MW-3	bis (2-Ethylhexyl)phthalate	23	NA
	di-n-Butylphthalate	11	NA
MW-4	None Reported		

(1) Sample date: June 6, 1996
(2) NA = Not Applicable. No present Vermont or Federal Standard for the compound
(3) Proposed VT Enforcement Standard (Proposed PAL is 10 μg/L)

As Table 3 summarizes, the results of the most recent round of sampling and analyses indicate low concentrations of SVOCs localized at MW-1, (Figure 2) which is understandable given the free product layer. Ten SVOCs were reported above detection limits at this location. The highest reported concentration in MW-1 was 3,4-Methylphenol, reported at 36 μg/L. There is presently no State or Federal Guideline concentration for this compound. Napthalene was reported in MW-1 at 11 μg/L, or slightly above the proposed Preventive Action Limit of 10 μg/L. The only other sampled well with SVOCs reported above DLs was MW-3 in which two compounds, both of them phthalate esters were reported at low concentrations, neither of which have a State or Federal guideline concentration.

5.0 SUMMARY AND RECOMMENDATIONS

A Phase II investigation was performed to further characterize the areas of concern identified with the Purcell Oil Site, and to comply with the requested analyses for SVOCs by the SMS. The network of monitoring wells was measured for the presence of LNAPL and sampled for the presence of SVOCs and the metals lead, antimony, and thallium (the metals which had been previously detected above their respective Enforcement Standard or MCL). During the period January 1996 to June 1996 groundwater at this site was investigated by The Johnson Company for the presence of volatile organic compounds, SVOCs, and metals. After two rounds of sampling using the slow purge sampling technique (which has been documented to best represent ambient groundwater conditions), it is apparent that groundwater contamination is localized in two wells, MW-1, and MW-2.

↳ not really...
VOCs + SVOCs in MW-3 not MW-2
Also, metals in all wells historically

5.1 SEMIVOLATILES SUMMARY

Of the locations tested, monitoring well MW-1 had the most reported SVOC compounds (10) in groundwater at this location. None of the compounds were present above their respective Enforcement Standards or MCLs. With the exception of monitoring well MW-3, SVOCs were not reported at any of the other monitoring wells above the limit of analytical detection (5 ppb), indicating that contamination with respect to SVOCs at this site is limited to monitoring well MW-1. No further testing is recommended for these compounds.

5.2 METALS SUMMARY

Based upon the results of re-sampling for the metals lead, antimony, and thallium, it is apparent that groundwater quality with respect to metal concentrations has improved at this site. Although lead was reported by Scitest above the limit of detection at all four locations, all detections were at far lesser concentrations than any of the previous analyses, and none exceeded the Vermont Groundwater Protection Rule and Strategy Enforcement Standard of 0.02 mg/L, or the Vermont Health Department Health Advisory of 0.015 mg/L. At monitoring well MW-2, the Preventive Action Limit (PAL) of 0.01 mg/L was exceeded (0.013 mg/L), however, the overall concentrations in this well have improved with each round of samples collected. This well historically has had the highest lead concentrations, and because the PAL has been exceeded for lead, we recommend continued groundwater monitoring for lead at this location.

An exceedance of the Federal Maximum Contaminant Level (MCL) of 0.006 mg/L antimony was reported in all wells from the February 1996 analyses. Antimony was not detected above the limit of detection with the June 1996 analyses, and as such, we are not recommending further testing for this compound or for thallium, which was previously detected above the MCL of 0.002 mg/L at MW-4 in February, 1996, but was not reported above the limit of detection of 0.001 during the June 1996 sampling and analyses. No further testing for antimony or thallium is recommended.

Hmm... if lead in MW-2 increases significantly, then all wells will need sampling for all 3 metals

5.3 LNAPL SUMMARY

Data collected during the previous measurements recorded indicate that LNAPL is being reduced in MW-1 by manual bailing. Figure 3 illustrates a sharp reduction in the LNAPL thickness from 0.16 feet on May 21, 1996 to 0.06 feet on June 6, 1996. This was following the removal of approximately two to three gallons of water/oil mixture from the well on May 21. We are recommending that LNAPL removal via manual bailing continues on an approximate quarterly basis, with an oil absorbant "sock" installed in it to promote passive NAPL recovery.

need data! removal and mods

installed - monthly

The Johnson Company recommends the following in relation to further action at this Site:

- Continue with quarterly groundwater monitoring at MW-2, consisting of sampling and analyses for lead in water at. Should lead concentrations be reported below the present Vermont PAL of 10 μg/L for two successive sampling intervals, then monitoring could cease;

- Continue quarterly monitoring for presence of LNAPL in MW-1 and if detected, bail into 55 gallon drum installed for this purpose. Install an oil absorbant sock into this well to promote passive product recovery. If the LNAPL thickness is reduced to a thickness of less than or equal to 0.01 feet, then the quarterly monitoring could cease, and the site be designated Sites Management Activity Complete (SMAC).

We are presently in the planning stages of the permanent closure of an underground fuel oil storage tank (located next to the driveway, near monitoring well MW-4 (Figure 2) and de-commissioning the two aboveground storage tanks (AST) and related equipment at this site. We will apprise the Underground Storage Tank section of the anticipated closure date, pursuant to the guidelines, and keep the Sites Management Section posted as to progress of the AST de-commissioning.

6.0 REFERENCES

Consulting Engineers and Scientists, Inc., 1994, Environmental Site Assessment, P.O. 94-00358-A-SV, REF 1330 LAMIS #439700361582190, South Main Street, Hartford, Vermont, Report date June 21, 1994.

Attachment 1

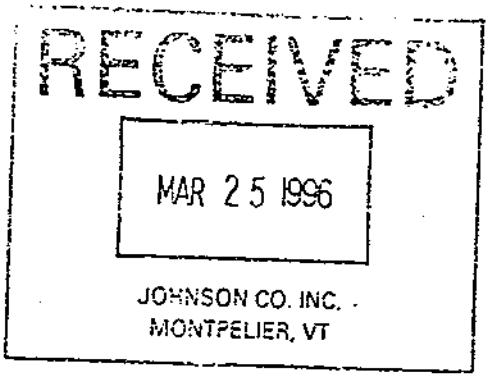
Freidman and Bruya, Inc.
Report dated March 19, 1996

FRIEDMAN & BRUYA, INC.
ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3012 16th Avenue West
Seattle, WA 98119-2029
FAX: (206) 283-5044

JRB



March 19, 1996

James Bowes, Project Manager
The Johnson Company
100 State Street
Montpelier, VT 05602

Dear Mr. Bowes:

Enclosed are the results for your Purcell Oil, VT project submitted on March 8, 1996. The identification of the product was determined to be either diesel #2 or home heating oil. This product has been weathered as indicated by the absence of the *n*-alkanes. The age of this product appears to most likely be two to five years old, although it may be slightly older.

The FID chromatogram of the sample indicated a lack of *n*-alkanes. This demonstrates considerable chemical/biological degradation. This sample has been impacted by rainfall and water table fluctuations of approximately four feet. The product layer was very thin. This combination would accelerate degradation to a moderate to high rate.

We appreciate this opportunity to be of service and hope you will call if you have any further questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kelley Wilt

Kelley Wilt
Chemist

keh
Enclosures
FAX: (802) 229-4600
TJC0319R.DOC

Date of Report: March 19, 1996
Date Received: March 8, 1996
Project: Purcell Oil, VT
Date Samples Extracted: March 8, 1996

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FINGERPRINT CHARACTERIZATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
MW-1 Product	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of diesel fuel or heating oil. The medium boiling compounds appeared as a ragged pattern of peaks eluting from *n*-C_6 to *n*-C_{25} showing a maximum near *n*-C_{15}. A lack of a dominant pattern of *n*-alkanes was seen. The material appears to have undergone chemical/biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second internal standard peak seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

NW HO

CHAIN OF CUSTODY RECORD

№ 3285

Client/Project Name	Project Location
Purcell Oil, VT 3.8.96 9:40	White River Junction, VT
Project No.	**Field Logbook No**
3-0304-2(042)	EHF2
Sampler: (Signature)	**Chain of Custody Tape No.**

ANALYSES: hydrocarbon scan please call Jim Bowles @ 802-229-4600 for details

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
MW1-PROD.	3.6.96	1355	66967	groundwater/product *hot*	X						product

	Date	Time		Date	Time
Relinquished by: (Signature)	3/7/96	1145	Received by: (Signature) (FHBI)	3.8.96	9:30
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

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

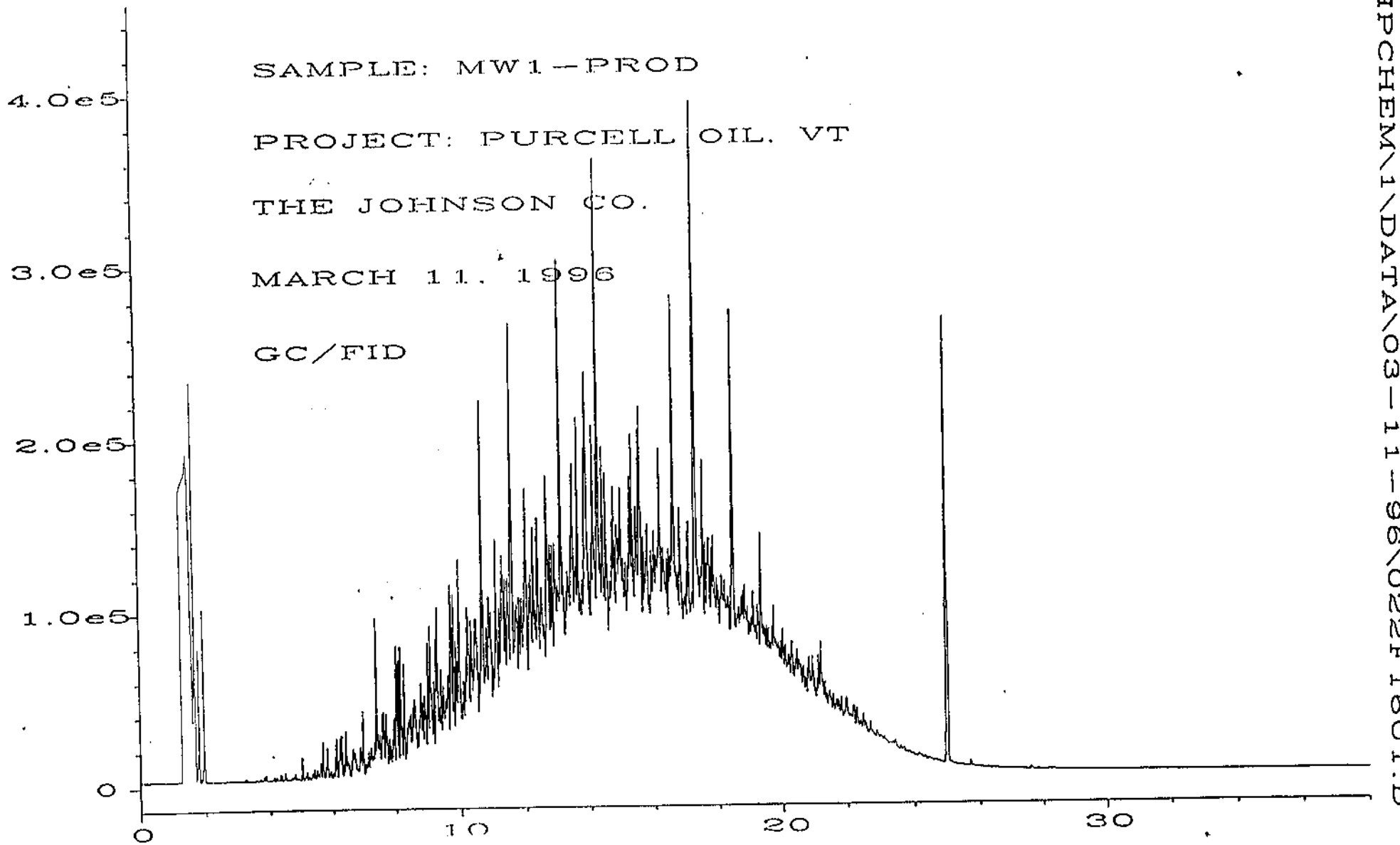
THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

Note: Please call Jim Bowles @ JCO for details

ANALYTICAL LABORATORY

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Attn: Jim Bruya

1114-1-84


SAMPLE: MW1—PROD
PROJECT: PURCELL OIL. VT
THE JOHNSON CO.
MARCH 11. 1996
GC/FID
4.0e5
3.0e5
2.0e5
1.0e5
0
0
10
20
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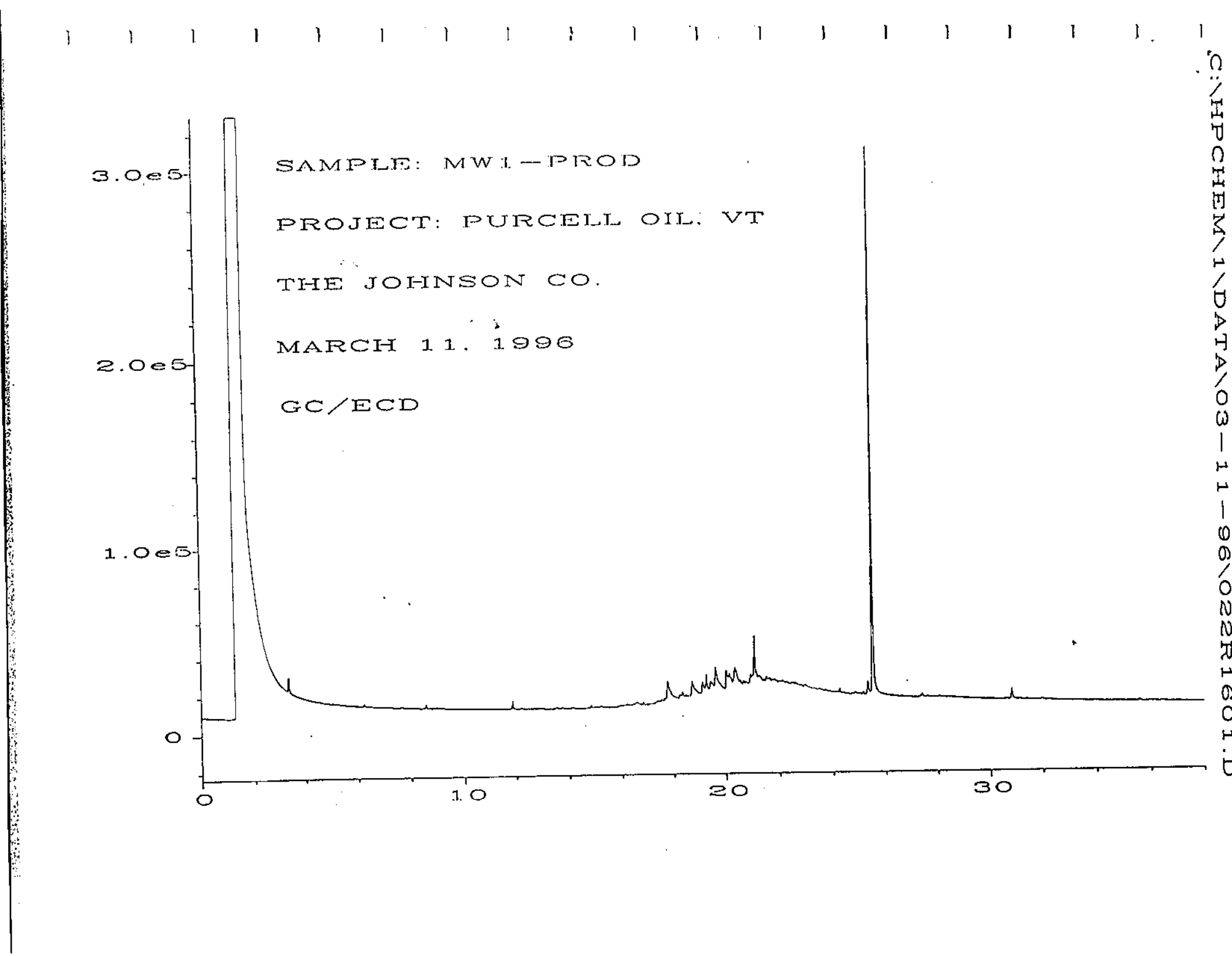
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THE JOHNSON CO.
MARCH 11, 1996
GC/ECD
3.0e5
2.0e5
1.0e5
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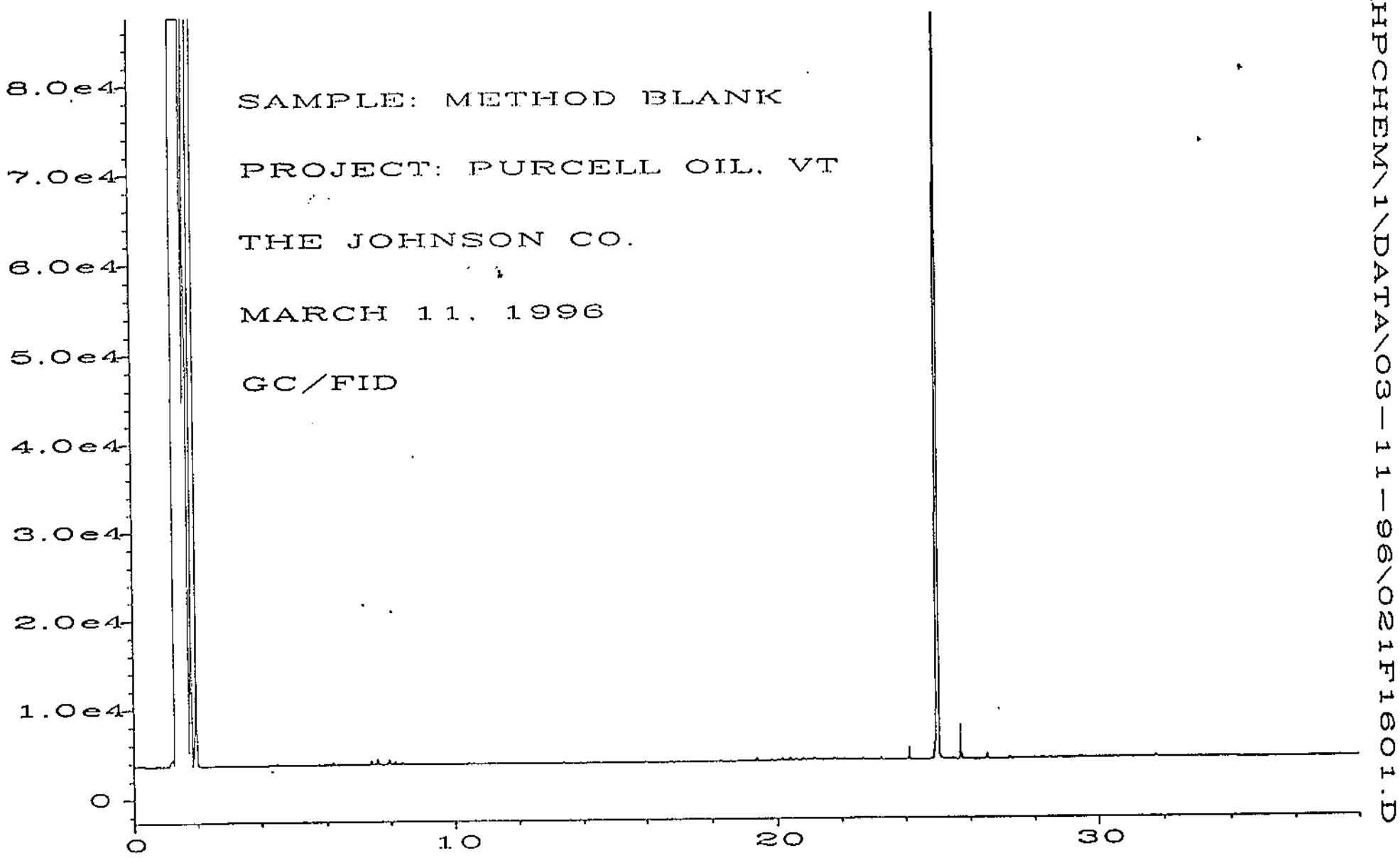
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PROJECT: PURCELL OIL, VT
THE JOHNSON CO.
MARCH 11, 1996
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5.0e4
4.0e3
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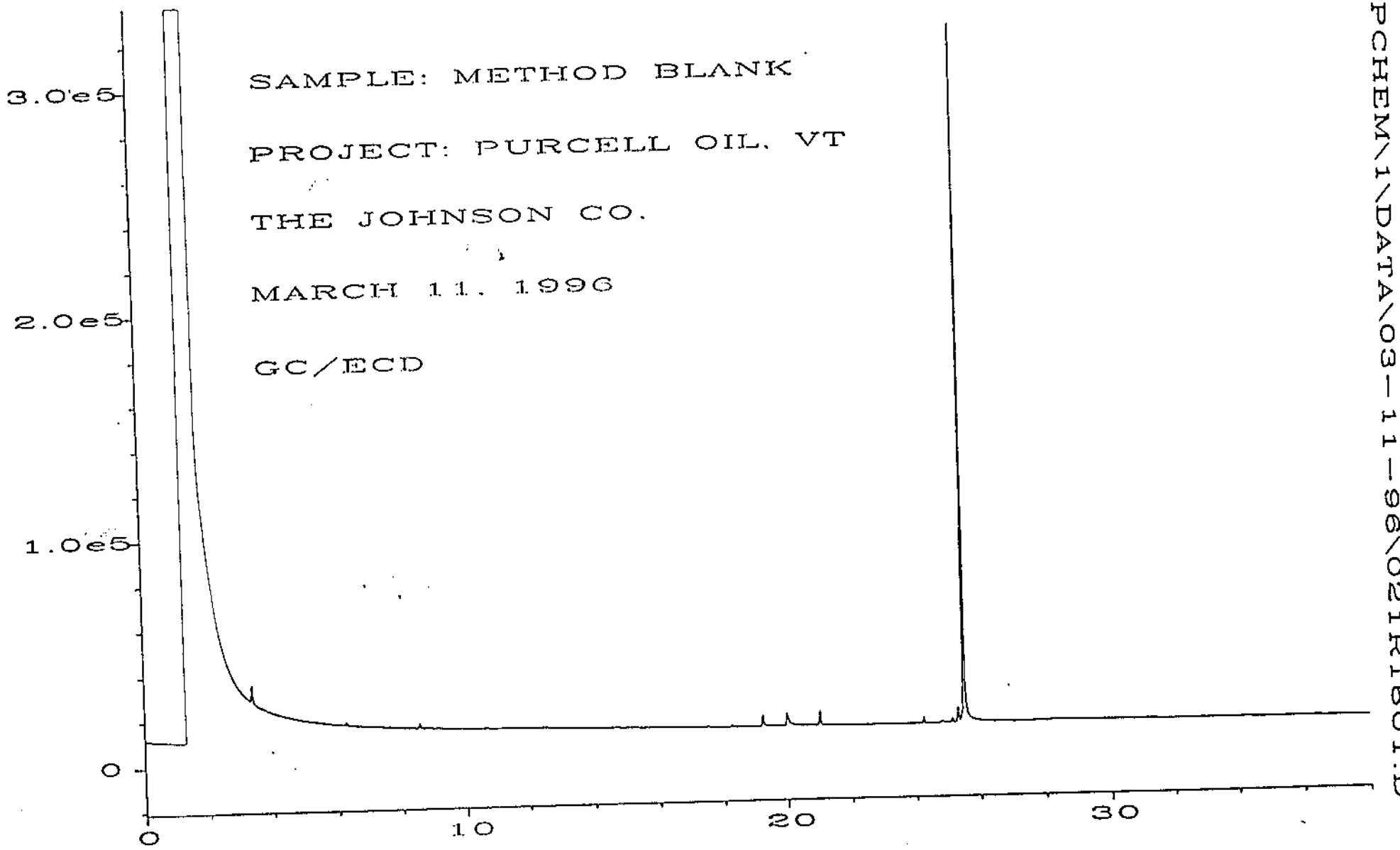
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PROJECT: PURCELL OIL, VT
THE JOHNSON CO.
MARCH 11, 1996
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0
10
20
30
C:\HPCHEM\1\DATA\03-11-96\021R1801.D

Attachment 2

Scitest Laboratory Services
Reports dated July 8, 1996

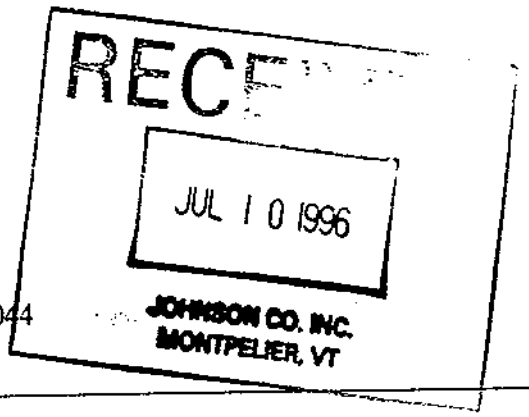
3-0304-2

SCITEST
LABORATORY SERVICES

JRB

ANALYTICAL REPORT

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313



The Johnson Company
100 State Street
Montpelier, VT 05602

Jim Bowes

Project Name: 3-0304-2-044
Customer Nos.: 078611

Work Order No.: 9606-01791

Date Received: 6/06/96
Date Reported: 7/08/96

Sample Desc.: JCO/Parcell's-MW 1
Sample Nos: 1

Sample Date: 6/06/96
Collection Time: 13:53

Test Performed	Method	Results	Units	Analyst	Analysis Date
Antimony, Acid Soluble	SM18 3113	< 0.003	mg/L	JSW	6/25/96
Lead, Acid Soluble	SM18 3113	0.005	mg/L	JSW	6/19/96
Thallium, Acid Soluble	SM18 3113	< 0.001	mg/L	JSW	6/25/96
Semi-volatile Organics	EPA 8270			RJS	7/03/96
Hexachlorocyclopentadiene	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chlorophenyl phenyl ether	EPA 8270	< 5	ug/L	RJS	7/03/96
4-Bromophenyl phenyl ether	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis(2-Chloroisopropyl)ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Bis (2-Chlorethoxy) Methane	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-Chloroethyl) Ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Pyrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Phenanthrene	EPA 8270	6	ug/L	RJS	7/03/96
Naphthalene	EPA 8270	11	ug/L	RJS	7/03/96
Indeno -(1,2,3-cd)- pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Fluorene	EPA 8270	8	ug/L	RJS	7/03/96
Fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Dibenzo [a,h]anthracene	EPA 8270	< 10	ug/L	RJS	7/03/96
Chrysene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo -[k]- fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [g,h,i] perylene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [b] fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [a] pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [a] anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthylene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthene	EPA 8270	5	ug/L	RJS	7/03/96
Di-n-Octylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-ethylhexyl)phthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Butyl benzyl phthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-butylphthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Diethylphthalate	EPA 8270	8	ug/L	RJS	7/03/96
Dimethylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 1
Sample Nos: 1

Sample Date: 6/06/96
Collection Time: 13:53

Test Performed	Method	Results	Units	Analyst	Analysis Date
Phenol	EPA 8270	27	ug/L	RJS	7/03/96
Pentachlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
3 and 4-Methylphenol	EPA 8270	36	ug/L	RJS	7/03/96
4-Chloro-3-methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodiphenylamine	EPA 8270	12	ug/L	RJS	7/03/96
N-Nitrosodi-n-propylamine	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
Isophorone	EPA 8270	< 5	ug/L	RJS	7/03/96
Nitrobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,6-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methyl-4,6-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4,5-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dimethylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrophenol	EPA 8270	10	ug/L	RJS	7/03/96
2-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachloroethane	EPA 8270	< 10	ug/L	RJS	7/03/96
1,2,4-Trichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,2-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,3-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,4-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
3,3-Dichlorobenzidine	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloraniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Chloronaphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
2-Chlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
Dibenzofuran	EPA 8270	< 5	ug/L	RJS	7/03/96
3-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylnaphthalene	EPA 8270	21	ug/L	RJS	7/03/96
Hexachlorobutadiene	EPA 8270	< 5	ug/L	RJS	7/03/96
Carbazole	EPA 8270	< 5	ug/L	RJS	7/03/96
Hexachlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,4,6-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pyridine	EPA 8270	< 10	ug/L	RJS	7/03/96

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 2
Sample Nos: 2

Sample Date: 6/06/96
Collection Time: 12:43

Test Performed	Method	Results	Units	Analyst	Analysis Date
Antimony, Acid Soluble	SM18 3113	< 0.003	mg/L	JSW	6/25/96
Lead, Acid Soluble	SM18 3113	0.013	mg/L	JSW	6/19/96
Thallium, Acid Soluble	SM18 3113	< 0.001	mg/L	JSW	6/25/96
Semi-volatile Organics	EPA 8270			RJS	7/03/96
Hexachlorocyclopentadiene	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chlorophenyl phenyl ether	EPA 8270	< 5	ug/L	RJS	7/03/96
4-Bromophenyl phenyl ether	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis(2-Chloroisopropyl)ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Bis (2-Chlorethoxy) Methane	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-Chloroethyl) Ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Pyrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Phenanthrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Naphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
Indeno -(1,2,3-cd)- pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Fluorene	EPA 8270	< 5	ug/L	RJS	7/03/96
Fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Dibenzo [a,h]anthracene	EPA 8270	< 10	ug/L	RJS	7/03/96
Chrysene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo -[k]- fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [g,h,i] perylene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [b] fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [a] pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [a] anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthylene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-Octylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-ethylhexyl)phthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Butyl benzyl phthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-butylphthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Diethylphthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Dimethylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Phenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pentachlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
3 and 4-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloro-3-methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodiphenylamine	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodi-n-propylamine	EPA 8270	< 10	ug/L	RJS	7/03/96

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 2
Sample Nos: 2
Sample Date: 6/06/96
Collection Time: 12:43

Test Performed	Method	Results	Units	Analyst	Analysis Date
2,4-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
Isophorone	EPA 8270	< 5	ug/L	RJS	7/03/96
Nitrobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,6-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methyl-4,6-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4,5-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dimethylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachloroethane	EPA 8270	< 10	ug/L	RJS	7/03/96
1,2,4-Trichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,2-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,3-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,4-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
3,3-Dichlorobenzidine	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloraniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Chloronaphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
2-Chlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
Dibenzofuran	EPA 8270	< 5	ug/L	RJS	7/03/96
3-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylnaphthalene	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachlorobutadiene	EPA 8270	< 5	ug/L	RJS	7/03/96
Carbazole	EPA 8270	< 5	ug/L	RJS	7/03/96
Hexachlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,4,6-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pyridine	EPA 8270	< 10	ug/L	RJS	7/03/96

Sample Desc.: JCO/Parcell's-MW 3
Sample Nos: 3
Sample Date: 6/06/96
Collection Time: 11:46

Test Performed	Method	Results	Units	Analyst	Analysis Date
Antimony, Acid Soluble	SM18 3113	< 0.003	mg/L	JSW	6/25/96
Lead, Acid Soluble	SM18 3113	0.004	mg/L	JSW	6/19/96
Thallium, Acid Soluble	SM18 3113	< 0.001	mg/L	JSW	6/25/96

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 3
Sample Nos: 3

Sample Date: 6/06/96
Collection Time: 11:46

Test Performed	Method	Results	Units	Analyst	Analysis Date
Semi-volatile Organics	EPA 8270			RJS	7/03/96
Hexachlorocyclopentadiene	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chlorophenyl phenyl ether	EPA 8270	< 5	ug/L	RJS	7/03/96
4-Bromophenyl phenyl ether	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis(2-Chloroisopropyl)ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Bis (2-Chlorethoxy) Methane	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-Chloroethyl) Ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Pyrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Phenanthrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Naphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
Indeno -(1,2,3-cd)- pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Fluorene	EPA 8270	< 5	ug/L	RJS	7/03/96
Fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Dibenzo [a,h]anthracene	EPA 8270	< 10	ug/L	RJS	7/03/96
Chrysene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo -[k]- fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [g,h,i] perylene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [b] fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [a] pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [a] anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthylene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-Octylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-ethylhexyl)phthalate	EPA 8270	23	ug/L	RJS	7/03/96
Butyl benzyl phthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-butylphthalate	EPA 8270	11	ug/L	RJS	7/03/96
Diethylphthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Dimethylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Phenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pentachlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
3 and 4-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloro-3-methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodiphenylamine	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodi-n-propylamine	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrotoluene	EPA 8270	< 5	ug/L	RJS	7/03/96
Isophorone	EPA 8270	< 5	ug/L	RJS	7/03/96
Nitrobenzene					

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 3
Sample Nos: 3
Sample Date: 6/06/96
Collection Time: 11:46

Test Performed	Method	Results	Units	Analyst	Analysis Date
2,6-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methyl-4,6-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4,5-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dimethylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachloroethane	EPA 8270	< 10	ug/L	RJS	7/03/96
1,2,4-Trichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,2-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,3-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,4-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
3,3-Dichlorobenzidine	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloraniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Chloronaphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
2-Chlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
Dibenzofuran	EPA 8270	< 5	ug/L	RJS	7/03/96
3-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylnaphthalene	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachlorobutadiene	EPA 8270	< 5	ug/L	RJS	7/03/96
Carbazole	EPA 8270	< 5	ug/L	RJS	7/03/96
Hexachlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,4,6-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pyridine	EPA 8270	< 10	ug/L	RJS	7/03/96

Sample Desc.: JCO/Parcell's-MW 4
Sample Nos: 4
Sample Date: 6/06/96
Collection Time: 11:10

Test Performed	Method	Results	Units	Analyst	Analysis Date
Antimony, Acid Soluble	SM18 3113	< 0.003	mg/L	JSW	6/25/96
Lead, Acid Soluble	SM18 3113	0.007	mg/L	JSW	6/19/96
Thallium, Acid Soluble	SM18 3113	< 0.001	mg/L	JSW	6/25/96
Semi-volatile Organics	EPA 8270			RJS	7/03/96
Hexachlorocyclopentadiene	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chlorophenyl phenyl ether	EPA 8270	< 5	ug/L	RJS	7/03/96

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 4
Sample Nos: 4

Sample Date: 6/06/96
Collection Time: 11:10

Test Performed	Method	Results	Units	Analyst	Analysis Date
4-Bromophenyl phenyl ether	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis(2-Chloroisopropyl)ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Bis (2-Chlorethoxy) Methane	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-Chloroethyl) Ether	EPA 8270	< 5	ug/L	RJS	7/03/96
Pyrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Phenanthrene	EPA 8270	< 5	ug/L	RJS	7/03/96
Naphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
Indeno -(1,2,3-cd)- pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Fluorene	EPA 8270	< 5	ug/L	RJS	7/03/96
Fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Dibenzo [a,h]anthracene	EPA 8270	< 10	ug/L	RJS	7/03/96
Chrysene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo -[k]- fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [g,h,i] perylene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [b] fluoranthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Benzo [a] pyrene	EPA 8270	< 10	ug/L	RJS	7/03/96
Benzo [a] anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Anthracene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthylene	EPA 8270	< 5	ug/L	RJS	7/03/96
Acenaphthene	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-Octylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Bis (2-ethylhexyl)phthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Butyl benzyl phthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Di-n-butylphthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Diethylphthalate	EPA 8270	< 5	ug/L	RJS	7/03/96
Dimethylphthalate	EPA 8270	< 10	ug/L	RJS	7/03/96
Phenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pentachlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
3 and 4-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloro-3-methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodiphenylamine	EPA 8270	< 10	ug/L	RJS	7/03/96
N-Nitrosodi-n-propylamine	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
Isophorone	EPA 8270	< 5	ug/L	RJS	7/03/96
Nitrobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,6-Dinitrotoluene	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methyl-4,6-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4,5-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96

ANALYTICAL REPORT

Project Name: 3-0304-2-044
Project No.: 078611

Work Order No.: 9606-01791

Sample Desc.: JCO/Parcell's-MW 4
Sample Nos: 4

Sample Date: 6/06/96
Collection Time: 11:10

Test Performed	Method	Results	Units	Analyst	Analysis Date
2,4-Dichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dimethylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2,4-Dinitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylphenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitrophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachloroethane	EPA 8270	< 10	ug/L	RJS	7/03/96
1,2,4-Trichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,2-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,3-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
1,4-Dichlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
3,3-Dichlorobenzidine	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Chloraniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Chloronaphthalene	EPA 8270	< 5	ug/L	RJS	7/03/96
2-Chlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
Dibenzofuran	EPA 8270	< 5	ug/L	RJS	7/03/96
3-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
4-Nitroaniline	EPA 8270	< 10	ug/L	RJS	7/03/96
2-Methylnaphthalene	EPA 8270	< 10	ug/L	RJS	7/03/96
Hexachlorobutadiene	EPA 8270	< 5	ug/L	RJS	7/03/96
Carbazole	EPA 8270	< 5	ug/L	RJS	7/03/96
Hexachlorobenzene	EPA 8270	< 5	ug/L	RJS	7/03/96
2,4,6-Trichlorophenol	EPA 8270	< 10	ug/L	RJS	7/03/96
Pyridine	EPA 8270	< 10	ug/L	RJS	7/03/96

Authorized by: Frank Lamotte