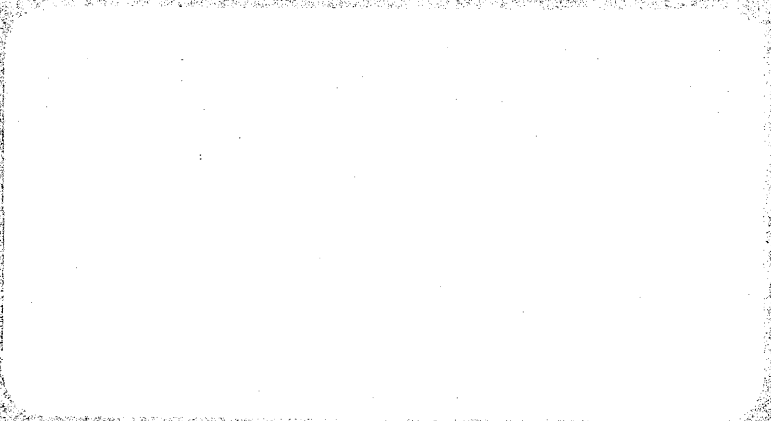


**CDM**



Camp Dresser & McKee

**REPORT ON RESULTS  
NEW STREET DUMP SITE  
COMPREHENSIVE MONITORING  
PROGRAM  
Phase II**

July 1985

Prepared for: City of Cambridge  
by  
Camp Dresser & McKee Inc.



environmental engineers, scientists,  
planners, & management consultants

CAMP DRESSER & McKEE INC.

One Center Plaza  
Boston, Massachusetts 02108  
617 742-5151

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September 24, 1985

Mr. Everett Kennedy  
Commissioner  
Department of Public Works  
147 Hampshire Street  
Cambridge, MA 02139

RE: New Street Dump Site  
Results of Phase II  
Monitoring Program

Dear Mr. Kennedy:

We are pleased to submit the results of our Phase II monitoring program for the New Street dump site. The purposes of the Phase II monitoring program were two-fold: 1) to confirm our previous results; and 2) to expand our analysis to include both air and water quality sampling. Our results show that little has changed in the area since we issued our Phase I Report in January 1984. The major conclusions of our Phase II work are:

- o Conditions at the site are indicative of a landfill with diminishing internal activity. These conditions include dilute leachate and low-level methane production.
- o The methane vent trench around the dump is functioning properly. Methane detected at the trench surface quickly dissipates to non-detectable levels three feet above the ground surface.
- o Groundwater flow is from the dump towards Alewife Brook. The New Street Pump Station continues to cause localized drawdowns in the immediate vicinity of the dump, and to act as an interceptor well for diluted leachate from the dump.
- o Analyses at Wells C1 and C5 show no contamination. Well C1 is situated between the dump and Fresh Pond; Well C5 is situated between the dump and Alewife Brook.
- o Contamination at Well C2 and the New Street Pump Station was reconfirmed. The concentrations of contaminants measured were at or near the analytical detection limits and should pose no significant threat to human health.
- o The Fresh Pond sediment sample analysis showed the presence of PCB-1248 at a concentration of 5 ppm. Although the concentration of the PCB encountered is low enough so that it does not pose a significant health concern, we recommend additional sediment samples be collected to evaluate this contamination. No PCBs were detected in the Fresh Pond water column, or at any of the groundwater sampling locations in and around the dump.

- o Conditions at the landfill have not changed appreciably since Phase I. We recommend continued monitoring of the site to ensure that conditions remain stabilized. A proposed schedule for further monitoring is presented later in this report.
- o We conclude that the Cambridge dump poses no significant environmental or health related threat. The Cambridge dump is relatively "clean" when compared to many other municipal landfills.

Specifically addressing the Phase II work task by task:

#### TASK I - Air Quality Monitoring and Analysis

Air quality in the vicinity of the vent trench and in the gas monitoring well casings was evaluated using an Organic Vapor Analyzer (OVA), an HNU 101 photoionization gas analyzer and a Johnson-Williams Gas pointer.

#### Methane Concentrations at Vent Trench

A summary of the combustible gas data collected in Phase II is presented in Table 1. General air quality sampling was conducted in a walkover of the entire site. Key observation points identified in Table 1 are located on Figure 1. In general, the methane vent trench that surrounds the Cambridge dump is functioning properly. The greatest amounts of methane are being vented in the south and southeastern sections of the dump. Little to no methane is being vented in the western and northern ends of the dump. Further, no volatile organics were detected in the vent trench vapors at any location. Siltation and disturbance of the vent trench was observed at several locations during the monitoring program. It is recommended that the vent trench be repaired and monitored to insure its efficiency.

Concentrations exceeding 1000 ppm (but less than 0.5% methane) were measured directly at the ground surface at the southern end of the dump (observation points 1, W1, 2, W13, and 3) and in the vicinity of the Bristol Arms Apartments (Observation points W5A, W5, 4, S, and W16). Concentrations of methane measured three feet above the ground surface were less than 1 ppm, showing that methane dissipates quickly once introduced into the ambient surroundings. None of the measured methane concentrations would pose a health or safety hazard to on-site personnel or nearby residents. The Lower Explosion Limit (LEL) for methane is in excess of 5% (50,000 PPM).

#### Composition of Landfill Gas

Air quality was evaluated at the vent trench and at the landfill surface and the New Street pump station to assess the composition of gases within the landfill. The first samples were collected to differentiate between the methane and non-methane components of the landfill gas. The results of the analysis are presented in Table 2. In general, total hydrocarbons (which include methane) ranged from 60 ppm to 300 ppm. The corresponding non-methane components ranged from 0 ppm to 60 ppm. Both the total and non-methane hydrocarbon values are within the normal range expected at an urban location.

To better evaluate the composition of the non-methane portion of the landfill gas, CDM collected gas samples from casings at selected wells in the landfill for further analysis. These samples were analyzed to determine whether volatile organics typically found at landfills were present in the vapors vented at the Cambridge dump. The results showed no volatile organic - solvent emissions in the landfill gas.

We recommend follow-up monitoring to identify and quantify the non-methane hydrocarbons at the New Street pump station which was not done as part of this study.

Finally, a general site walkover was conducted with survey instruments to evaluate the presence of any surface emissions at any other locations. The general site walkover indicated the absence of any non-methane hydrocarbons.

#### TASK 2 - Monitoring Groundwater Levels

The results of the Phase II monitoring of groundwater levels are presented in Table 3 and Figure 2. We have included the Phase I results in the table as well, for purposes of comparison. As the most recent levels indicate, groundwater moving through the dump would travel towards Alewife Brook, or be drawn into the New Street pumps. The New Street Pump Station continues to cause localized drawdowns in the immediate vicinity of the landfill. These results verify our previous understanding of groundwater movement in the area.

Of interest is that even with the below average rainfall of the last six to eight months, the Phase II groundwater levels are in almost every case higher than the lowest of the previous readings. In other words, even though rainfall has been below normal for a good portion of the year, present May levels do not vary significantly from previous May readings, indicating the slow response of subsurface waters to dramatic changes in recharge. This finding suggests that we can expect the lowest groundwater levels to occur -- once again -- in late summer or early fall. We recommend that groundwater levels be measured again in early fall because they should be at their lowest levels in some time. This should give us a picture of one extreme condition of the groundwater system -- the condition when groundwater levels are at their lowest.

#### TASK 3 - Groundwater Sampling and Analysis

We sampled wells C1 (shallow), C2, and C5, the New Street Pump Station, and Fresh Pond for volatile organics, characteristic anions, total iron, and specific conductance. In addition, we conducted a full priority pollutant scan at the New Street Pump Station, and wells C2 and C5. Our results verify the previously detected low-level contamination at the New Street Pump Station and well C2 and show Fresh Pond, Well C1, and Well C5 to be free of contamination.

Note that Well C1 is located between the dump and Fresh Pond; Well C5, between the dump and Alewife Brook. The absence of contamination at both of these sites confirms: 1) The groundwater flow near Well C1 is predominantly away from Fresh Pond; and 2) Contamination from the dump either has not reached, or has been diluted to such an extent that no contamination is detectable. Of the latter, we believe that contamination has not reached Well C5. Given the mild slope of the groundwater table towards Alewife Brook, and representative values for hydraulic conductivity and porosity, we estimate that it would take from 30 to 100 years for contamination at the edge of the landfill to reach well C5.

### Volatile Organics

Concentrations of volatile organics detected during the Phase II sampling program are presented in Appendix A. Fresh Pond, as well as Wells C1 (shallow) and C5, show no volatile organic contamination. Organics were detected again at the two locations where organics were previously detected: New Street Pump Station and Well C2. In the Phase I sampling program, only benzene (15ppb) was detected at Well C2. Phase II sampling confirms the presence of benzene, as well as toluene and vinyl chloride. All the concentrations measured during Phase II, however, were at less than 10 ppb.

Phase I sampling results at the New Street Pump Station showed the presence of trans-1,2-dichloroethylene (33 ppb), 1,1,1 trichloroethane (16 ppb) and 1,1 dichloroethane (25 ppb). None of these compounds were detected in the Phase II sampling results. Rather, the Phase II results show vinyl chloride, toluene and chlorobenzene to be present, although at concentrations less than 10 ppb.

Benzene commonly comes from petroleum products. It is found in gasoline in concentrations ranging from trace amounts to as much as 30% concentration in some countries. It is a concern as it is a known human carcinogen.

Toluene is also commonly obtained from petroleum products, and is present in gasoline and many petroleum solvents. It is used as a solvent in paints and coatings, for rubber oils, and resins, and as a raw material for the manufacture of benzene. It is chemically similar to benzene.

Chlorobenzene is used as a solvent, and is an intermediate in the manufacture of other chemicals.

Vinyl Chloride is a recognized human carcinogen. The chief use of vinyl chloride is as a raw material for the manufacture of polyvinyl chloride resins. Vinyl Chloride has been demonstrated to be a degradation product of more complex chlorinated hydrocarbons in landfill environments.

The presence of benzene and toluene at both Well C2 and the New Street Pump Station is understandable. The parking lot surrounding the New Street Pump Station inlet is now used as an ambulance storage yard. Medical technicians informed us that it is not uncommon to change the oil in the ambulances on-site. Numerous oil spots and blotches were observed on the parking lot surface adjacent to the pump station at the time the samples were taken. Storm runoff from the parking lot could also be washing benzene and toluene from the surface to the New Street Pump Station catchment. Similarly, well C2 is adjacent to the Fresh Pond Shopping Mall parking lot, and within 30 feet of an underground oil storage tank which is currently in use. This tank should be inspected to ensure that it is not contributing to the perceived groundwater contamination in Well C2 and the New Street Pump Station.

Vinyl chloride and chlorobenzene are intermediate compounds formed as a result of the decomposition of more complex compounds. Their source is most probably from materials contained in the dump. The presence of these compounds may be indicative of the age of the Cambridge dump. Chemicals dumped years ago are --over time-- breaking down into simpler compounds.

The concentrations of the volatile organics detected at the New Street Pump Station and Well C2 are very low, and pose no threat to human health under the existing water use scheme. In fact, the U.S. EPA has developed drinking water criteria for all of the detected compounds, and in every case, the concentrations detected are below these criteria. We conclude that the Cambridge dump poses no significant environmental or health related threat. The Cambridge dump is relatively "clean" when compared to many other municipal landfills.

#### Acid and Base/Neutral Extractable Compounds

Acid and base/neutral extractable compounds sampling results are presented in Appendix A. Acid extractable compounds were not detected at any sampling sites. The only location where base neutral extractable compounds were detected was at the New Street Pump Station. The detected compounds are usually associated with wood preserving and other petroleum distillate or wood processes. Their presence at the pump station is not surprising given the numerous railroad ties found around and within the dump site, and the proximity of the major railroad lines and other sources of petroleum hydrocarbons.

#### Chlorinated Pesticides and Polychlorinated Biphenyls

No chlorinated pesticides or polychlorinated biphenyls (PCBs) were detected at any of the well sampling locations.

#### pH and Specific Conductance

Measurements of pH and specific conductance are presented in Appendix A. In every case measurements are consistent with previous measurements obtained during the Phase I sampling program; pH ranged from 6.5 to 7.5 and specific conductance ranged from 220 mhos at the pond to 220 mhos at the New Street Pump Station.

### Heavy Metals

Heavy metal measurements are presented in Appendix A. Wells were sampled for both iron and beryllium during the Phase I efforts. The concentrations of these two metals measured during Phase II are consistent with measurements taken during Phase I. Concentrations of the remaining metals are typical of landfill leachate and are not in excess of typical levels found in nature, and should pose no significant threat to public health.

### Sediment Sample Analysis

CDM personnel collected a sediment sample from the bottom of Fresh Pond and analyzed it for a total priority pollutant scan as an indicator of long-term contamination. The composited sample was taken from the center of the pond at what is believed to be its deepest point. The results of the sample analysis show the presence in trace concentrations of several polyaromatic hydrocarbons (PAHs), including benzo(a)anthracene, benzo(b)pyrene, chrysene, phenathrene and pyrene, among others.

Although reported as present, the concentrations of all of these compounds were below the reportable detection limits of the analytical procedure (5 ppb). The constituents are associated with most petroleum distillation products and are most resistant to biodegradation. This so-called "organic debris" is commonly found in urban environments such as the Fresh Pond area. Their presence in the sediments in the trace quantities found should have no significant impact on the Cambridge water supply.

The pesticide/PCB analysis showed the bottom sediments to be uncontaminated, except for the presence of one constituent, PCB-1248, which was found at a concentration of 5 ppm. PCBs are found in transformer fluids, synthetic rubbers, plasticizers, flame retardants, floor tiles, printer's ink, coatings for paper and fabric, brake linings, paints, automobile body sealants, asphalt, adhesives, and similar products. As with PAHs, PCBs are quite resistant to biodegradation and, unfortunately, quite ubiquitous. Sediment samples taken from other urban lakes in Massachusetts also show PCBs to be present. For example, PCBs were found in almost all of the urban ponds and lakes in the City of Lynn: Flax Pond (0.9 ppm), Floating Bridge Pond (0.1 ppm), Sluice Pond (0.8 ppm), and Bartlett Pond (0.1 ppm).

PCBs were not found in the Fresh Pond water column, or at any of the sampling locations in and around the dump. Although the concentrations of the PCB found in the sediments are higher than that of the PAHs encountered, even at these levels the PCB contamination should not pose a threat to the Cambridge water supply due to the low solubility of the compound. We do recommend, however, that additional sediment samples be collected to better understand the extent of the PCB contamination in the bottom sediments. Additional sediment samples, possibly composited, should be collected at various locations in Fresh Pond to confirm the presence of PCBs in the bottom sediments. We recommend collecting the additional sediment samples in the fall, at the same time as the scheduled groundwater sampling.

Finally, sediment sample results also indicate significant concentrations of some metals, predominantly lead and zinc, which are prevalent in urban environments, but were not detected in the water column.

The presence of PAHs and PCBs in the sediment will be the focus of our next sampling program as outlined in the next section.

#### Conclusions and Recommendations

The results of the Phase I and Phase II studies are consistent, and confirm that conditions at Fresh Pond are unchanged. We conclude that water in Fresh Pond -- which our sampling confirms to be of high quality-- is not currently adversely affected by groundwater from the dump site. The Cambridge Water Department continues to monitor water quality in Fresh Pond on a monthly basis. Given that we did not detect any air quality problems, that upwards of 5 to 40 feet of fill caps the site, and that there are no local surface expressions of groundwater, we believe that the City can proceed with plans to develop the site as a park without causing adverse environmental or public health impacts. As a precaution, we recommend that monitoring continue to observe any significant changes in present conditions. To this end, we recommend the following:

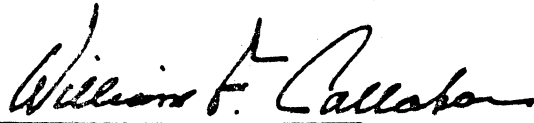
1. Measure groundwater levels again in late September - early October when, because of the lack of rainfall, groundwater should probably be at its lowest level in some time.
2. Measure methane concentrations in the well casings and at the vent trench at the same time as the groundwater levels are measured in (1).
3. Identify and quantify the non-methane components detected during the air quality survey at the New Street Pump Station.
4. Sample annually for volatile organics, characteristic anions, total iron, and specific conductance at New Street Pump Station and Wells C1, C2, and C5. The next sampling should be conducted in Spring 1986.
5. Sample air quality in and around the New Street Pump Station to assess the non-methane component encountered at this location during the field investigations.
6. Collect additional sediment samples from Fresh Pond at several locations and analyze for a total priority pollutant scan to assess the possible presence of PCBs and other compounds. Although the concentration of the PCB detected in the Phase II sediment sample was so low (5 ppm) that no significant health threat exists, we would like to better understand the nature and extent of the effects that the urban environment is having on the pond. We recommend collecting the additional sediment samples in the fall, at the same time as the scheduled groundwater sampling.

Page 8 of 8

We look forward to meeting with you to discuss our results. Please call us if you have any questions, or require additional information.

Sincerely,

CAMP DRESSER & MCKEE

A handwritten signature in black ink, reading "William F. Callahan". The signature is written in a cursive style with a prominent initial "W".

William F. Callahan  
Senior Vice President

WFC:ls  
Attachments

TABLE I  
 COMBUSTIBLE GAS DATA  
 SUMMARY OF FIELD OBSERVATION  
 CAMBRIDGE CITY DUMP  
 31 MAY 1985

EQUIPMENT	OBSERVATION POINT											
	(1)	W1	(2)	W13	(3)	(4)	WSA	W5	W16	(5)	W11	W19
OVA Trench 2' Above	>1000 1		200 to 500	>1000	<1	>1000 >1000	>1000	*				
LEL Hydrocarbon (ppm)	200									Present		
Methane	<DL	60 to 100		60		25	<DL	<DL	40		<DL	<DL
JW Gas Pointer %LEL %Total	<DL	40			8 to 10		<DL	<DL			<DL	

NOTES

See Plan for Point Locations

DL = Detection Limit

OVA, LEL Provided/Operated by CDM

\*OVA Inoperable Due to Intake of Water

TABLE 2  
WELL CASING SAMPLING RESULTS  
APRIL 25, 1985

<u>Well Location</u>	<u>Total Hydrocarbons (1) (Including Methane)</u>	<u>Hydrocarbons (2) (Not Including Methane)</u>
C1 - (Shallow)	60 ppm	0.4 ppm
C-2	200 ppm	1.0 ppm
C-5	100-200 ppm	0.4 ppm
New St.	300 ppm	14.0 ppm
Fresh Pond	0	0
W1	250 ppm	60 ppm
W5	200 ppm	0
W5A	200 ppm	0
W11	200 ppm	0
W13	200 ppm	60 ppm
W19	250 ppm	0

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Footnotes:

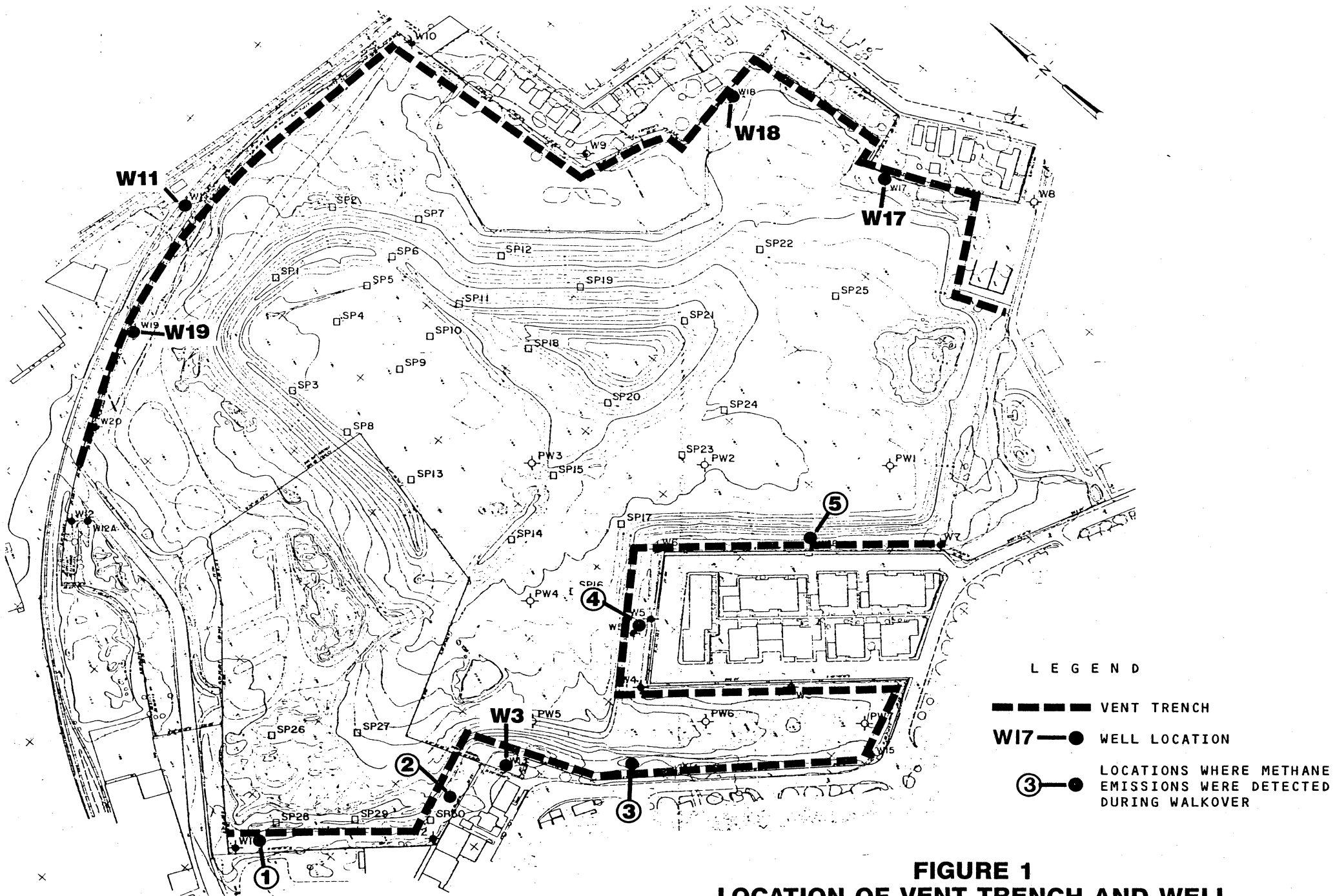
(1) From OVA Measurements

(2) From HNU Measurements

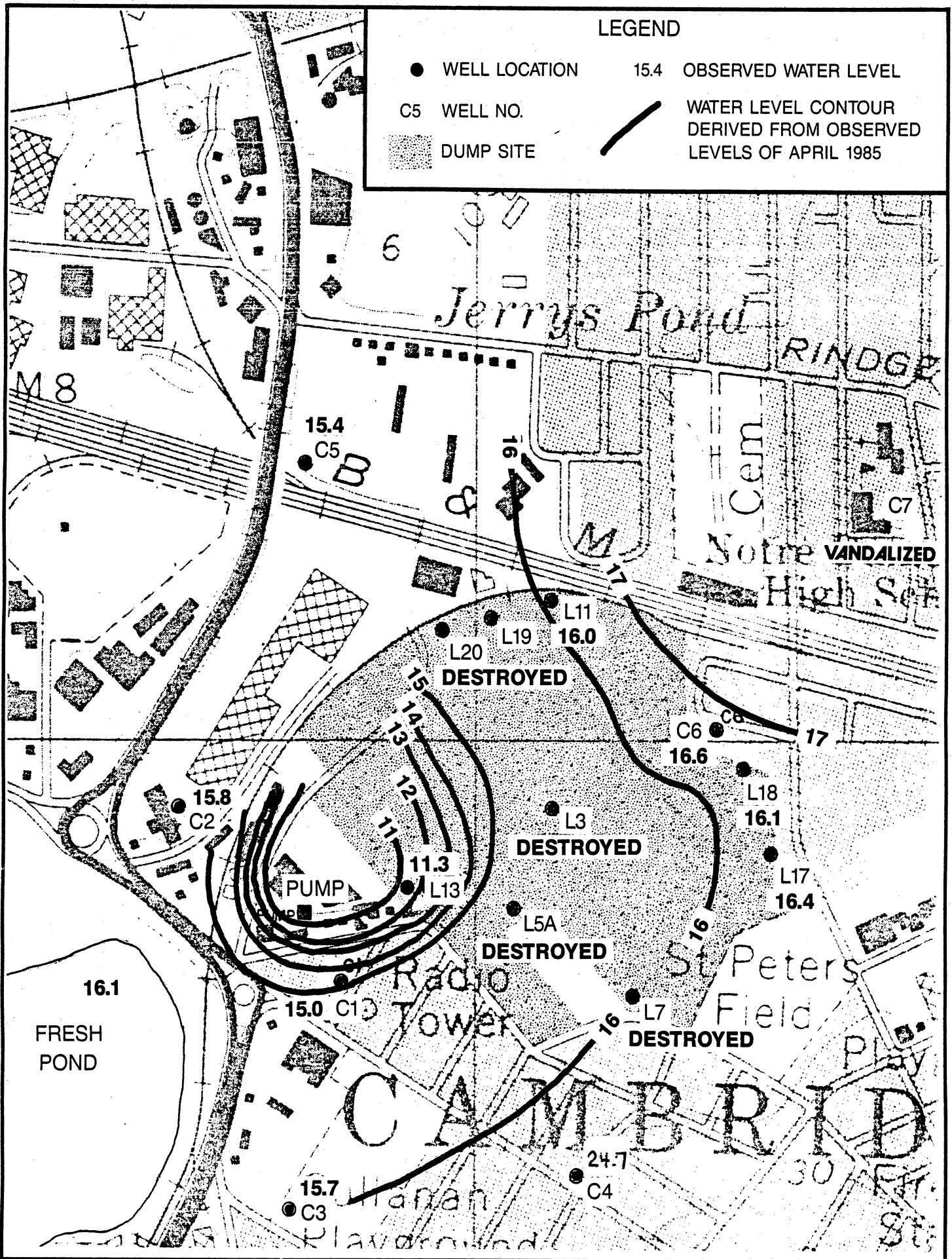
WELL NO.	DATE OF SAMPLE								PHASE II
	←-----PHASE I----->								
	5/19/83	5/25/83	6/1/83	6/14/83	7/11/83	8/19/83	10/14/83	4/25/85	
C1 Deep	17.33	17.34	17.43	17.14	16.37	-	16.36	16.82	
C1 Shallow	15.64	15.46	15.64	15.23	14.48	13.98	14.98	15.25	
C3	16.29	16.23	16.27	16.25	15.76	15.44	15.34	15.66	
C4	25.65	25.05	24.82	24.20	20.30	-	-	24.70	
C5	16.81	16.56	16.62	16.32	15.54	15.21	14.91	15.41	
C6	17.25	17.13	17.88	16.65	15.58	14.80	15.77	16.60	
LW-11	-	16.74	17.05	16.53	15.69	14.85	15.25	16.05	
LW-13	-	12.35	12.70	12.16	-	-	11.60	11.30	
LW-17	-	17.11	17.15	16.97	16.67	16.23	16.55	16.40	
LW-18	-	16.13	16.35	16.02	15.66	-	15.90	16.10	
Fresh Pond	15.3	15.3	14.5	14.5	14.0	10.6	11.0	16.10	

TABLE 3

Results of Phase I and Phase II Groundwater Level Monitoring Program



**FIGURE 1  
LOCATION OF VENT TRENCH AND WELL  
CASING SAMPLING LOCATIONS**



**FIGURE 2**  
**GROUNDWATER MOVEMENT**  
**PHASE II MONITORING PROGRAM**

# **APPENDIX A**

# **VOLATILE ORGANICS** **RESULTS**

VOLATILE ORGANICS

- ALL VALUES REPORTED AS µG/L -

CODES	
ND	- NOT DETECTED
P	- PRESENT

SAMPLE DESCRIPTION:	NEW ST. PUMP STA.	WELL C-2	WELL C-5	FRESH POND
CDM LAB NO:	16033	16034	16035	16036

CHLOROMETHANE	ND	ND	ND	ND
BROMOMETHANE	ND	ND		
VINYL CHLORIDE	<10,P	<10,P		
CHLOROETHANE	ND	ND		
METHYLENE CHLORIDE				
TRICHLOROFLUOROMETHANE				
1,1-DICHLOROETHYLENE				
1,1-DICHLOROETHANE				
TRANS-1,2-DICHLOROETHYLENE				
CHLOROFORM				
1,2-DICHLOROETHANE				
1,1,1-TRICHLOROETHANE				
CARBON TETRACHLORIDE				
BROMODICHLOROMETHANE				
1,2-DICHLOROPROPANE				
TRANS-1,3-DICHLOROPROPENE				
TRICHLOROETHYLENE				
DIBROMOCHLOROMETHANE				
CIS-1,3-DICHLOROPROPENE				
1,1,2-TRICHLOROETHANE		↓		
BENZENE		<10,P		
2-CHLOROETHYL VINYLETHER		ND		
BROMOFORM				
1,1,2,2-TETRACHLOROETHYLENE				
1,1,2,2-TETRACHLOROETHANE	↓	↓		
TOLUENE	<10,P	<10,P		
CHLOROBENZENE	<10,P	ND		
ETHYL BENZENE	ND	ND	↓	↓

VOLATILE ORGANICS

- ALL VALUES REPORTED AS µG/L -

CODES	
ND	- NOT DETECTED
P	- PRESENT

SAMPLE DESCRIPTION:	NEW ST. PUMP STA. DUP.	WELL C-1	FIELD BLANK
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CDM LAB NO:	16037	16038	16039
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	16037	16038	16039
CHLOROMETHANE	ND	ND	ND
BROMOMETHANE	ND		
VINYL CHLORIDE	<10,P		
CHLOROETHANE	ND		
METHYLENE CHLORIDE			
TRICHLOROFLUOROMETHANE			
1,1-DICHLOROETHYLENE			
1,1-DICHLOROETHANE			
TRANS-1,2-DICHLOROETHYLENE			
CHLOROFORM			
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
CARBON TETRACHLORIDE			
BROMODICHLOROMETHANE			
1,2-DICHLOROPROPANE			
TRANS-1,3-DICHLOROPROPENE			
TRICHLOROETHYLENE			
DIBROMOCHLOROMETHANE			
CIS-1,3-DICHLOROPROPENE			
1,1,2-TRICHLOROETHANE			
BENZENE			
2-CHLOROETHYL VINYLETHER			
BROMOFORM			
1,1,2,2-TETRACHLOROETHYLENE			
1,1,2,2-TETRACHLOROETHANE			
TOLUENE	↓		
CHLOROBENZENE	<10,P		
ETHYLBENZENE	ND	↓	↓

# **ACID COMPOUNDS AND BASE/NEUTRAL COMPOUNDS**

CLIENT Camp, Dresser and McKee  
 CLIENT ID 16033  
 ERCO ID 13-15849  
 SAMPLE RECEIVED 4/30/85  
 ANALYSIS COMPLETED 5/8/85  
 RESULTS IN ug/l (ppb)

ERCO / A Division of ENSECO

SUMMARY OF  
ORGANIC PRIORITY POLLUTANT ANALYSIS

ACID COMPOUNDS

21A	2,4,6-trichlorophenol	ND
22A	p-chloro-m-cresol	ND
24A	2-chlorophenol	ND
31A	2,4-dichlorophenol	ND
34A	2,4-dimethylphenol	ND
57A	2-nitrophenol	ND
58A	4-nitrophenol	ND
59A	2,4-dinitrophenol	ND
60A	4,6-dinitro-o-cresol	ND
64A	pentachlorophenol	ND
65A	phenol	ND

BASE/NEUTRAL COMPOUNDS

42B	bis(2-chloroisopropyl)ether	ND
43B	bis(2-chloroethoxy)methane	ND
52B	hexachlorobutadiene	ND
53B	hexachlorocyclopentadiene	ND
54B	isophorone	ND
55B	naphthalene	ND
56B	nitrobenzene	ND
61B	N-nitrosodimethylamine	ND
62B	N-nitrosodiphenylamine	ND
63B	N-nitrosodi-n-propylamine	ND
66B	bis(2-ethylhexyl)phthalate	----- *
67B	butyl benzyl phthalate	ND
68B	di-n-butylphthalate	ND
69B	di-n-octylphthalate	ND
70B	diethyl phthalate	ND
71B	dimethyl phthalate	ND
72B	benzo(a)anthracene	----- *
73B	benzo(a)pyrene	----- 50
74B	3,4-benzofluoranthene)	----- 80 <sup>a</sup>
75B	benzo(k)fluoranthene)	----- 54
76B	chrysene	----- 54
77B	acenaphthylene	ND
78B	anthracene	----- *
79B	benzo(ghi)perylene	----- *
80B	fluorene	----- *
81B	phenanthrene	----- 53
82B	dibenzo(a,h)anthracene	ND
83B	ideno(1,2,3-cd)pyrene	----- *
84B	pyrene	----- 170
129B	2,3,7,8-tetrachlorodibenzo-p-dioxin	ND

BASE/NEUTRAL COMPOUNDS

1B	acenaphthene	----- *
5B	benzidine	ND
8B	1,2,4-trichlorobenzene	ND
9B	hexachlorobenzene	ND
12B	hexachloroethane	ND
18B	bis(2-chloroethyl)ether	ND
20B	2-chloronaphthalene	ND
25B	1,2-dichlorobenzene	ND
26B	1,3-dichlorobenzene	ND
27B	1,4-dichlorobenzene	ND
28B	3,3-dichlorobenzidine	ND
35B	2,4-dinitrotoluene	ND
36B	2,6-dinitrotoluene	ND
37B	1,2-diphenylhydrazine	ND
39B	fluoranthene	----- 98
40B	4-chlorophenyl phenyl ether	ND
41B	4-bromophenyl phenyl ether	ND

ND = None detected above the average reporting limit of 50 ppb for acids and for B/N.

\*Trace concentrations detected below the average reporting limit.

<sup>a</sup>Coelute.

Reported by: PD  
 Checked by: KIN

NEW ST. PUMP  
CDM #16003

ORGANICS ANALYSIS DATA SHEET

ERCO / A DIVISION OF ENSECO, INC.

CLIENT Camp, Dresser and McKee

CLIENT ID 16033

ERCO ID 13-15849

COMPOUND NAME	FRACTION	SCAN NO. OR RETENTION TIME	ESTIMATED CONCENTRATION ( $\mu\text{g}/\text{l}$ )
$\text{C}_{12}\text{H}_{26}$ , pentamethylheptane isomer	BNA	541	25
$\text{C}_{11}\text{H}_{24}$ , ethylmethyloctane isomer	BNA	551	65
$\text{C}_{10}\text{H}_{22}$ , dimethyloctane isomer	BNA	573	80
$\text{C}_{10}\text{H}_{22}$ , dimethyloctane isomer	BNA	586	40
$\text{C}_{13}\text{H}_{28}$ , probably 4-methyl dodecane	BNA	598	40
$\text{C}_{13}\text{H}_{28}$	BNA	612	25
$\text{C}_{13}\text{H}_{28}$ , probably a trimethyl- decane isomer	BNA	650	35
Trimethylhexanoic acid isomer	BNA	680	70
$\text{C}_{15}\text{H}_{32}$ , probably a trimethyl- dodecane isomer	BNA	692	70
N,N,4-trimethylbenzenesulfonamide	BNA	1111	35

CLIENT Camp, Dresser and McKee  
 CLIENT ID 16034  
 ERCO ID 13-15850  
 SAMPLE RECEIVED 4/30/85  
 ANALYSIS COMPLETED 5/8/85  
 RESULTS IN ug/l (ppb)

ERCO / A Division of ENSECO

SUMMARY OF  
ORGANIC PRIORITY POLLUTANT ANALYSIS

ACID COMPOUNDS

21A	2,4,6-trichlorophenol	ND
22A	p-chloro-m-cresol	ND
24A	2-chlorophenol	ND
31A	2,4-dichlorophenol	ND
34A	2,4-dimethylphenol	ND
57A	2-nitrophenol	ND
58A	4-nitrophenol	ND
59A	2,4-dinitrophenol	ND
60A	4,6-dinitro-o-cresol	ND
64A	pentachlorophenol	ND
65A	phenol	ND

BASE/NEUTRAL COMPOUNDS

42B	bis(2-chloroisopropyl)ether	ND
43B	bis(2-chloroethoxy)methane	ND
52B	hexachlorobutadiene	ND
53B	hexachlorocyclopentadiene	ND
54B	isophorone	ND
55B	naphthalene -----	*
56B	nitrobenzene	ND
61B	N-nitrosodimethylamine	ND
62B	N-nitrosodiphenylamine	ND
63B	N-nitrosodi-n-propylamine	ND
66B	bis(2-ethylhexyl)phthalate -----	*
67B	butyl benzyl phthalate	ND
68B	di-n-butylphthalate	ND
69B	di-n-octylphthalate	ND
70B	diethyl phthalate	ND
71B	dimethyl phthalate	ND
72B	benzo(a)anthracene -----	*
73B	benzo(a)pyrene -----	*
74B	3,4-benzofluoranthene)-----	*a
75B	benzo(k)fluoranthene)	
76B	chrysene	ND
77B	acenaphthylene	ND
78B	anthracene -----	*
79B	benzo(ghi)perylene	ND
80B	fluorene -----	*
81B	phenanthrene -----	*
82B	dibenzo(a,h)anthracene	ND
83B	ideno(1,2,3-cd)pyrene	ND
84B	pyrene -----	*
129B	2,3,7,8-tetrachlorodibenzo-p-dioxin	ND

BASE/NEUTRAL COMPOUNDS

1B	acenaphthene	ND
5B	benzidine	ND
8B	1,2,4-trichlorobenzene	ND
9B	hexachlorobenzene	ND
12B	hexachloroethane	ND
18B	bis(2-chloroethyl)ether	ND
20B	2-chloronaphthalene	ND
25B	1,2-dichlorobenzene	ND
26B	1,3-dichlorobenzene	ND
27B	1,4-dichlorobenzene	ND
28B	3,3-dichlorobenzidine	ND
35B	2,4-dinitrotoluene	ND
36B	2,6-dinitrotoluene	ND
37B	1,2-diphenylhydrazine	ND
39B	fluoranthene -----	*
40B	4-chlorophenyl phenyl ether	ND
41B	4-bromophenyl phenyl ether	ND

ND = None detected above the average reporting limit of 50 ppb for acids and for B/N.

\*Trace concentrations detected below the average reporting limit.

<sup>a</sup>Coelute.

Reported by: PD  
Checked by: KIN

WELL C-2  
CDM #16034

ORGANICS ANALYSIS DATA SHEET

ERCO / A DIVISION OF ENSECO, INC.

CLIENT Camp, Dresser and McKee

CLIENT ID 16034

ERCO ID 13-15850

COMPOUND NAME	FRACTION	SCAN NO. OR RETENTION TIME	ESTIMATED CONCENTRATION ( $\mu\text{g}/\text{l}$ )
2(3H)-benzothiazolone	BNA	1123	21
sulfur, mol. (S8)	BNA	1372	1000

WELL C5  
CDM #16035

ERCO / A Division of ENSECO

CLIENT Camp, Dresser and McKee  
 CLIENT ID 16035  
 ERCO ID 13-15851  
 SAMPLE RECEIVED 4/30/85  
 ANALYSIS COMPLETED 5/8/85  
 RESULTS IN ug/l (ppb)

SUMMARY OF  
ORGANIC PRIORITY POLLUTANT ANALYSIS

ACID COMPOUNDS

21A 2,4,6-trichlorophenol ND  
 22A p-chloro-m-cresol ND  
 24A 2-chlorophenol ND  
 31A 2,4-dichlorophenol ND  
 34A 2,4-dimethylphenol ND  
 57A 2-nitrophenol ND  
 58A 4-nitrophenol ND  
 59A 2,4-dinitrophenol ND  
 60A 4,6-dinitro-o-cresol ND  
 64A pentachlorophenol ND  
 65A phenol ND

BASE/NEUTRAL COMPOUNDS

42B bis(2-chloroisopropyl)ether ND  
 43B bis(2-chloroethoxy)methane ND  
 52B hexachlorobutadiene ND  
 53B hexachlorocyclopentadiene ND  
 54B isophorone ND  
 55B naphthalene ND  
 56B nitrobenzene ND  
 61B N-nitrosodimethylamine ND  
 62B N-nitrosodiphenylamine ND  
 63B N-nitrosodi-n-propylamine ND  
 66B bis(2-ethylhexyl)phthalate ----- 87  
 67B butyl benzyl phthalate ND  
 68B di-n-butylphthalate ND  
 69B di-n-octylphthalate ND  
 70B diethyl phthalate ND  
 71B dimethyl phthalate ND  
 72B benzo(a)anthracene ND  
 73B benzo(a)pyrene ND  
 74B 3,4-benzofluoranthene ND  
 75B benzo(k)fluoranthene ND  
 76B chrysene ND  
 77B acenaphthylene ND  
 78B anthracene ND  
 79B benzo(ghi)perylene ND  
 80B fluorene ND  
 81B phenanthrene ND  
 82B dibenzo(a,h)anthracene ND  
 83B ideno(1,2,3-cd)pyrene ND  
 84B pyrene ND  
 129B 2,3,7,8-tetrachlorodibenzo-  
 p-dioxin ND

BASE/NEUTRAL COMPOUNDS

1B acenaphthene ND  
 5B benzidine ND  
 8B 1,2,4-trichlorobenzene ND  
 9B hexachlorobenzene ND  
 12B hexachloroethane ND  
 18B bis(2-chloroethyl)ether ND  
 20B 2-chloronaphthalene ND  
 25B 1,2-dichlorobenzene ND  
 26B 1,3-dichlorobenzene ND  
 27B 1,4-dichlorobenzene ND  
 28B 3,3-dichlorobenzidine ND  
 35B 2,4-dinitrotoluene ND  
 36B 2,6-dinitrotoluene ND  
 37B 1,2-diphenylhydrazine ND  
 39B fluoranthene ND  
 40B 4-chlorophenyl phenyl ether ND  
 41B 4-bromophenyl phenyl ether ND

ND = None detected above the average reporting limit  
of 10 ppb for acids and for B/N.

Reported by: PJ

Checked by: KIN

WELL C5  
CDM #16035

ORGANICS ANALYSIS DATA SHEET

ERCO / A DIVISION OF ENSECO, INC.

CLIENT Camp, Dresser and McKee

CLIENT ID 16035

ERCO ID 13-15851

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COMPOUND NAME	FRACTION	SCAN NO. OR RETENTION TIME	ESTIMATED CONCENTRATION ( $\mu\text{g}/\text{l}$ )
sulfur, mol. (S8)	BNA	1369	110

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CLIENT Camp, Dresser and McKee  
 CLIENT ID 16036  
 ERCO ID 13-15852  
 SAMPLE RECEIVED 4/30/85  
 ANALYSIS COMPLETED 5/8/85  
 RESULTS IN ug/l (ppb)

SUMMARY OF  
ORGANIC PRIORITY POLLUTANT ANALYSIS

<u>ACID COMPOUNDS</u>		<u>BASE/NEUTRAL COMPOUNDS</u>		
21A	2,4,6-trichlorophenol	ND	42B bis(2-chloroisopropyl)ether	ND
22A	p-chloro-m-cresol	ND	43B bis(2-chloroethoxy)methane	ND
24A	2-chlorophenol	ND	52B hexachlorobutadiene	ND
31A	2,4-dichlorophenol	ND	53B hexachlorocyclopentadiene	ND
34A	2,4-dimethylphenol	ND	54B isophorone	ND
57A	2-nitrophenol	ND	55B naphthalene	ND
58A	4-nitrophenol	ND	56B nitrobenzene	ND
59A	2,4-dinitrophenol	ND	61B N-nitrosodimethylamine	ND
60A	4,6-dinitro-o-cresol	ND	62B N-nitrosodiphenylamine	ND
64A	pentachlorophenol	ND	63B N-nitrosodi-n-propylamine	ND
65A	phenol	ND	66B bis(2-ethylhexyl)phthalate	ND
			67B butyl benzyl phthalate	ND
			68B di-n-butylphthalate	ND
			69B di-n-octylphthalate	ND
			70B diethyl phthalate	ND
			71B dimethyl phthalate	ND
			72B benzo(a)anthracene	ND
			73B benzo(a)pyrene	ND
			74B 3,4-benzofluoranthene	ND
			75B benzo(k)fluoranthene	ND
			76B chrysene	ND
			77B acenaphthylene	ND
			78B anthracene	ND
			79B benzo(ghi)perylene	ND
			80B fluorene	ND
			81B phenanthrene	ND
			82B dibenzo(a,h)anthracene	ND
			83B ideno(1,2,3-cd)pyrene	ND
			84B pyrene	ND
			129B 2,3,7,8-tetrachlorodibenzo-p-dioxin	ND

ND = None detected above the average reporting limit  
of 10 ppb for acids and for B/N.

Reported by: PD  
Checked by: KIN

FRESH POND  
CDM #16036

ORGANICS ANALYSIS DATA SHEET

ERCO / A DIVISION OF ENSECO, INC.

CLIENT Camp, Dresser and McKee

CLIENT ID 16036

ERCO ID 13-15852

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COMPOUND NAME	FRACTION	SCAN NO. OR RETENTION TIME	ESTIMATED CONCENTRATION ( $\mu\text{g}/\text{l}$ )
unknown	BNA	1978	6

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**CHLORINATED PESTICIDES AND  
POLYCHLORINATED BIPHENYLS  
(PCBs)**

INCOMPATIBLE ORGANICS DATA SUMMARY FORM

Sampling Location: FRESH POND Code: \_\_\_\_\_  
 CDM Lab No: 16036 Sample Type: Wastewater ( ) Sludge ( )

CHLORINATED PESTICIDES AND POLYCHLORINATED BIPHENYLS (PCB's)

- All Values Reported as µg/l -

<u>COMPOUND</u>	<u>(STORET NO.)</u>	<u>REPORTED VALUES</u>
<i>alpha</i> -BHC	(39337)	ND
Lindane ( <i>gamma</i> -BHC)	(39340)	
<i>beta</i> -BHC	(39338)	
Heptachlor	(39410)	
<i>delta</i> -BHC	(39259)	
Aldrin	(39330)	
Heptachlor Epoxide	(39410)	
Endosulfan I	(34361)	
p,p'-DDE	(39320)	
Dieldrin	(39380)	
Endrin	(39390)	
p,p'-DDD	(39310)	
Endosulfan II	(34356)	
p,p'-DDT	(39300)	
Endrin Aldehyde	(34366)	
Endosulfan Sulfate	(34351)	↓
Chlorodane*	(39350)	ND
Toxaphene*	(39400)	
PCB-1016*	(34671)	
PCB-1221*	(39488)	
PCB-1232*	(39492)	
PCB-1242*	(39496)	
PCB-1248*	(39500)	
PCB-1254*	(39504)	
PCB-1260*	(39508)	↓

\*compounds are mixtures of various isomers

INCOMPATIBLE ORGANICS DATA SUMMARY FORM

Sampling Location: WELL C-5 Code: \_\_\_\_\_  
 CDM Lab No: 16035 Sample Type: Wastewater ( ) Sludge ( )

CHLORINATED PESTICIDES AND POLYCHLORINATED BIPHENYLS (PCB's)

- All Values Reported as  $\mu\text{g/l}$  -

<u>COMPOUND</u>	<u>(STORET NO.)</u>	<u>REPORTED VALUES</u>
<i>alpha</i> -BHC	(39337)	ND
Lindane ( <i>gamma</i> -BHC)	(39340)	
<i>beta</i> -BHC	(39338)	
Heptachlor	(39410)	
<i>delta</i> -BHC	(39259)	
Aldrin	(39330)	
Heptachlor Epoxide	(39410)	
Endosulfan I	(34361)	
p,p'-DDE	(39320)	
Dieldrin	(39380)	
Endrin	(39390)	
p,p'-DDD	(39310)	
Endosulfan II	(34356)	
p,p'-DDT	(39300)	
Endrin Aldehyde	(34366)	
Endosulfan Sulfate	(34351)	↓
Chlorodane*	(39350)	ND
Toxaphene*	(39400)	
PCB-1016*	(34671)	
PCB-1221*	(39488)	
PCB-1232*	(39492)	
PCB-1242*	(39496)	
PCB-1248*	(39500)	
PCB-1254*	(39504)	
PCB-1260*	(39508)	↓

\*compounds are mixtures of various isomers

INCOMPATIBLE ORGANICS DATA SUMMARY FORM

Sampling Location: WELL C-2 Code: \_\_\_\_\_  
 CDM Lab No: 16034 Sample Type: Wastewater ( ) Sludge ( )

CHLORINATED PESTICIDES AND POLYCHLORINATED BIPHENYLS (PCB's)

- All Values Reported as  $\mu\text{g/l}$  -

<u>COMPOUND</u>	<u>(STORET NO.)</u>	<u>REPORTED VALUES</u>
<i>alpha</i> -BHC	(39337)	ND
Lindane ( <i>gamma</i> -BHC)	(39340)	
<i>beta</i> -BHC	(39338)	
Heptachlor	(39410)	
<i>delta</i> -BHC	(39259)	
Aldrin	(39330)	
Heptachlor Epoxide	(39410)	
Endosulfan I	(34361)	
p,p'-DDE	(39320)	
Dieldrin	(39380)	
Endrin	(39390)	
p,p'-DDD	(39310)	
Endosulfan II	(34356)	
p,p'-DDT	(39300)	
Endrin Aldehyde	(34366)	
Endosulfan Sulfate	(34351)	↓
Chlorodane*	(39350)	ND
Toxaphene*	(39400)	
PCB-1016*	(34671)	
PCB-1221*	(39488)	
PCB-1232*	(39492)	
PCB-1242*	(39496)	
PCB-1248*	(39500)	
PCB-1254*	(39504)	
PCB-1260*	(39508)	↓

\*compounds are mixtures of various isomers

INCOMPATIBLE ORGANICS DATA SUMMARY FORM

Sampling Location: NEW ST. PUMP Code: \_\_\_\_\_  
 CDM Lab No: 16033 Sample Type: Wastewater ( ) Sludge ( )

CHLORINATED PESTICIDES AND POLYCHLORINATED BIPHENYLS (PCB's)

- All Values Reported as  $\mu\text{g/l}$  -

<u>COMPOUND</u>	<u>(STORET NO.)</u>	<u>REPORTED VALUES</u>
<i>alpha</i> -BHC	(39337)	ND
Lindane ( <i>gamma</i> -BHC)	(39340)	
<i>beta</i> -BHC	(39338)	
Heptachlor	(39410)	
<i>delta</i> -BHC	(39259)	
Aldrin	(39330)	
Heptachlor Epoxide	(39410)	
Endosulfan I	(34361)	
p,p'-DDE	(39320)	
Dieldrin	(39380)	
Endrin	(39390)	
p,p'-DDD	(39310)	
Endosulfan II	(34356)	
p,p'-DDT	(39300)	
Endrin Aldehyde	(34366)	
Endosulfan Sulfate	(34351)	
Chlorodane*	(39350)	ND
Toxaphene*	(39400)	
PCB-1016*	(34671)	
PCB-1221*	(39488)	
PCB-1232*	(39492)	
PCB-1242*	(39496)	
PCB-1248*	(39500)	
PCB-1254*	(39504)	
PCB-1260*	(39508)	

\*compounds are mixtures of various isomers

# **SEDIMENT SAMPLE RESULTS**

Sample Received: 5/23/85  
 Analysis Completed: 6/4/85  
 All Results in: ng/g (ppb)  
 Reported by: WAM  
 Checked by: AS  
 Client: Camp, Dresser & McKee

ERCO / A Division of ENSECO  
 VOLATILE ORGANICS ANALYSIS  
 BY EPA METHOD 624  
 - Data Report -  
 Page 1 of 2

JACIE M. AND  
 ELI STEW  
 KWON 6

Compounds	Minimum Reporting Limit	Client ID: ERCO ID:	F.P. Sediment 16431
Chloromethane	5		ND
Bromomethane	5		ND
Vinyl chloride	5		ND
Chloroethane	5		ND
Methylene chloride	5		ND
Acetone	25		ND
Carbon disulfide	2		ND
1,1-dichloroethene	2		ND
1,1-dichloroethane	2		ND
Trans-1,2-dichloroethene	2		ND
Chloroform	2		ND
1,2-dichloroethane	2		ND
2-Butanone	10		ND
1,1,1-trichloroethane	2		ND
Carbon tetrachloride	2		ND
Vinyl acetate	2		ND
Bromodichloromethane	2		ND
1,2-dichloropropane	2		ND
Trans-1,3-dichloropropene	2		ND
Trichloroethene	2		ND
Dibromochloromethane	2		ND
1,1,2-trichloroethane	2		ND
Benzene	2		ND
Cis-1,3-dichloropropene	2		ND
2-Chloroethylvinylether	2		ND
Bromoform	2		ND
2-Hexanone	10		ND
4-Methyl-2-pentanone	10		ND
Tetrachloroethene	2		ND
1,1,2,2-Tetrachloroethane	2		ND
Toluene	2		ND
Chlorobenzene	2		ND
Ethylbenzene	2		ND
Styrene	2		ND
Total xylenes	2		ND

RECEIVED  
 JUN 25 1985  
 CDM ENVIRONMENTAL  
 ENGINEERING/LABORATORY

ND = Not detected.

ERCO / A Division of ENSECO

VOLATILE ORGANICS ANALYSIS

BY EPA METHOD 624

- Data Report -

Page 2 of 2

Client: Camp, Dresser & McKee

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COMPOUNDS	Minimum Reporting Limit	Client ID: ERCO ID:	F.P. Sediment 16431
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Additional Compounds

---

None detected

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Dilution factor: 1.7

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Multiply minimum reporting limit by dilution factor to obtain true minimum limit.

CLIENT Camp, Dresser & McKee  
 CLIENT ID F.P. Sediment  
 ERCO ID 13-16431  
 SAMPLE RECEIVED 5/23/85  
 ANALYSIS COMPLETED 6/13/85  
 RESULTS IN µg/kg (ppb)

ERCO / A Division of ENSECO

SUMMARY OF  
 ORGANIC PRIORITY POLLUTANT ANALYSIS

ACID COMPOUNDS

21A 2,4,6-trichlorophenol ND  
 22A p-chloro-m-cresol ND  
 24A 2-chlorophenol ND  
 31A 2,4-dichlorophenol ND  
 34A 2,4-dimethylphenol ND  
 57A 2-nitrophenol ND  
 58A 4-nitrophenol ND  
 59A 2,4-dinitrophenol ND  
 60A 4,6-dinitro-o-cresol ND  
 64A pentachlorophenol ND  
 65A phenol ND

BASE/NEUTRAL COMPOUNDS

1B acenaphthene ND  
 5B benzidine ND  
 8B 1,2,4-trichlorobenzene ND  
 9B hexachlorobenzene ND  
 12B hexachloroethane ND  
 18B bis(2-chloroethyl)ether ND  
 20B 2-chloronaphthalene ND  
 25B 1,2-dichlorobenzene ND  
 26B 1,3-dichlorobenzene ND  
 27B 1,4-dichlorobenzene ND  
 28B 3,3-dichlorobenzidine ND  
 35B 2,4-dinitrotoluene ND  
 36B 2,6-dinitrotoluene ND  
 37B 1,2-diphenylhydrazine ND  
 39B fluoranthene ----- \*  
 40B 4-chlorophenyl phenyl ether ND  
 41B 4-bromophenyl phenyl ether ND

BASE/NEUTRAL COMPOUNDS

42B bis(2-chloroisopropyl)ether ND  
 43B bis(2-chloroethoxy)methane ND  
 52B hexachlorobutadiene ND  
 53B hexachlorocyclopentadiene ND  
 54B isophorone ND  
 55B naphthalene ----- \*  
 56B nitrobenzene ND  
 61B N-nitrosodimethylamine ND  
 62B N-nitrosodiphenylamine ND  
 63B N-nitrosodi-n-propylamine ND  
 66B bis(2-ethylhexyl)phthalate ----- \*  
 67B butyl benzyl phthalate ND  
 68B di-n-butylphthalate ND  
 69B di-n-octylphthalate ND  
 70B diethyl phthalate ND  
 71B dimethyl phthalate ND  
 72B benzo(a)anthracene ----- \*  
 73B benzo(a)pyrene ----- \*  
 74B 3,4-benzofluoranthene ----- \*a  
 75B benzo(k)fluoranthene ND  
 76B chrysene ----- \*  
 77B acenaphthylene ND  
 78B anthracene ----- \*  
 79B benzo(ghi)perylene ----- \*  
 80B fluorene ND  
 81B phenanthrene ----- \*  
 82B dibenzo(a,h)anthracene ND  
 83B ideno(1,2,3-cd)pyrene ND  
 84B pyrene ----- \*  
 129B 2,3,7,8-tetrachlorodibenzo-p-dioxin ND

ND = None detected above the average reporting limit of 1,900 ppb for acids and for B/N.

\*Trace concentrations detected below the average reporting limit.

aCoelution.

Reported by: KIN  
 Checked by: PD

ORGANICS ANALYSIS DATA SHEET

ERCO / A DIVISION OF ENSECO, INC.

CLIENT Camp, Dresser & McKee

CLIENT ID F.P. Sediment

ERCO ID 13-16431

---

COMPOUND NAME	FRACTION	SCAN NO. OR RETENTION TIME	ESTIMATED CONCENTRATION ( $\mu\text{g}/\text{kg}$ )
Aliphatic hydrocarbons	BNA	1112	1,400
Tetradecanoic acid	BNA	1158	770
Unknown, probably an alcohol	BNA	1208	1,800
Hexadecanoic acid	BNA	1292	4,400
Sulfur ( $\text{S}_8$ )	BNA	1343	53,000
Unknown	BNA	1385	7,700
Unknown, probably an alcohol	BNA	1398	2,300
Unknown, probably a carboxylic acid	BNA	1411	750

---

Sample Received: 5/23/85  
Analysis Completed: 6/12/85  
All Results in: µg/g (ppm) dry wt.  
Reported by: TR  
Checked by: RGW

ERCO / A DIVISION OF ENSECO, INC.

INORGANIC ANALYSIS

- Data Report -

Client: Camp, Dresser & McKee Inc.

ERCO ID	CLIENT ID	Total Cyanide	Total Phenolics	Total Solids
16431	F.P. Sediment	<0.25	7.1	9.4%

If customer has any questions regarding analysis, refer to sample in question by its ERCO ID#.

Sample Received: 5/23/85  
Analysis Completed: 6/18/85  
All Results in: µg/g (ppm) dry weight  
Reported by: JPM  
Checked by: CAK

ERCO / A DIVISION OF ENSECO, INC.

INORGANIC ANALYSIS

- Data Report -

Client: Camp, Dresser & McKee

ERCO ID	CLIENT ID	Ag	As	Be	Cd	Cr	Cu	Hg	Ni
16431	F.P. Sediment	<0.94	11	1.6	<0.93	70	60	0.22	30

If customer has any questions regarding analysis, refer to sample in question by its ERCO ID#.

Sample Received: 5/23/85  
 Analysis Completed: 6/18/85  
 All Results in: µg/g (ppm) dry weight  
 Reported by: JPM  
 Checked by: CAK  
 Client: Camp, Dresser & McKee

ERCO / A DIVISION OF ENSECO, INC.

INORGANIC ANALYSIS

- Data Report -

ERCO ID	CLIENT ID	Pb	Sb	Se	Tl	Zn
16431	F.P. Sediment	110 Z	<4.7	<4.7	<4.7	190 Z

If customer has any questions regarding analysis, refer to sample in question by its ERCO ID#.

Sample Received: 5/23/85  
Analysis Completed: 6/12/85  
All Results in: µg/g (ppm)  
Reported by: EK  
Checked by: JP

ERCO / A DIVISION OF ENSECO, INC.

PESTICIDE ANALYSIS

- Data Report -

Client: Camp-Dresser-McKee

Client ID: F.P. Sediment  
ERCO ID: 16431

89P	aldrin	ND
90P	dieldrin	ND
91P	chlordane	ND
92P	4,4'-DDT	ND
93P	4,4'-DDE	ND
94P	4,4'-DDD	ND
95P	alpha-endosulfan	ND
96P	beta-endosulfan	ND
97P	endosulfan sulfate	ND
98P	endrin	ND
99P	endrin aldehyde	ND
100P	heptachlor	ND
101P	heptachlor epoxide	ND
102P	alpha-BHC	ND
103P	beta-BHC	ND
104P	gamma-BHC	ND
105P	delta-BHC	ND
106P	PCB-1242	ND
107P	PCB-1254	ND
108P	PCB-1221	ND
109P	PCB-1232	ND
110P	PCB-1248	5.
111P	PCB-1260	ND
112P	PCB-1016	ND
113P	toxaphene	ND

Flonil

GC/only

7/9/85  
reconfirmed

ND = Not detected at or above reporting limit of 0.5 ppm.

# **OTHER CONSTITUENTS**

PRIORITY POLLUTANT METALS, CYANIDE, PHENOL

SAMPLE DESCRIPTION:	NEW ST. PUMP	WELL C-2	WELL C-5	FRESH POND
CDM LAB NO:	16033	16034	16035	16036
TOTAL ANTIMONY	<0.025	<0.025	<0.025	<0.025
TOTAL ARSENIC	<0.010	<0.010	<0.060	<0.010
TOTAL BERYLLIUM	<0.02	<0.02	<0.02	<0.02
TOTAL CADMIUM	<0.005	<0.005	<0.005	<0.005
TOTAL CHROMIUM	<0.05	<0.05	<0.05	<0.05
TOTAL COPPER	<0.05	0.21	<0.05	<0.05
TOTAL LEAD	0.058	1.6	0.038	<0.005
TOTAL MERCURY	<0.0008	<0.0008	<0.0008	<0.0008
TOTAL NICKEL	<0.10	<0.10	<0.10	<0.10
TOTAL SELENIUM	<0.050	<0.050	<0.050	<0.050
TOTAL SILVER	<0.05	<0.05	<0.05	<0.05
TOTAL THALLIUM	<0.025	<0.025	<0.025	<0.025
TOTAL ZINC	0.13	1.6	0.07	<0.01
CYANIDE, TOTAL	<0.010	<0.010	<0.010	<0.010
PHENOL	<0.010	<0.010	0.015	<0.010
TOTAL IRON	52.	74.	69.	<0.05

ALL VALUES ARE REPORTED AS MG/L

<u>CDM LAB #</u>	<u>DESCRIPTION</u>	<u>TOTAL IRON, MG/L</u>
16037	NEW ST. PUMP (DUP)	44.
16038	WELL C-1	58.

**EPA METHOD 300.**  
**-all concentrations in mg/L-**

Sample Description:	NEW ST. PUMP	WELL C-2.	WELL C-5	FRESH POND	NEW ST. PUMP (DUP)	WELL C-1
CDM Laboratory No.:	16033	16034	16035	16036	16037	16038
<b>ANION:</b>						
Flouride	0.8	1.	0.8	<0.5	1.	<0.5
Chloride	300	570	100	61.	380	25.
Nitrite	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Ortho-P	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromide	1.	<0.5	<0.5	<0.5	0.9	<0.5
Nitrate	<0.5	<0.5	<0.5	1.	<0.5	<0.5
Sulphate	1.	13.	100	19.	0.9	3.

**Analytical Notes:**

**Chromatographic Conditions:**

Unit: Dionex 2000i  
 Anion Column: P/N 035311 (AS-4)  
 Guard Column: P/N 035310 (AG-4)  
 Detector: Conductivity  
 Eluent: 0.0028M NaHCO<sub>3</sub>/ 0.0022M NaCO<sub>3</sub>  
 Range: 30. uS  
 Pump Volume: 2.0 ml/min.  
 Sample Loop: 100 µL (APPROX.)

CAMBRIDGE DUMP  
4/25/85

FIELD DATA SUMMARY

SAMPLE LOCATION	WELL C-2	WELL C-5	WELL C-1	NEW STREET PUMP STATION	FRESH POND
Sample #	CAM-OW-01-001	CAM-OW-02-002	CAM-OW-03-003	CAM-OW-04-004	CAM-SW-01-001
Date	4/25/85	4/25/85	4/25/85	4/25/85	4/25/85
Weather	Cloudy 75°-Cool	Sun Out	Sunny & Warm	Sunny	Sunny
Time	10:30 AM	11:30 AM	1:00 PM	1:30 PM	3:45 PM
Water Quality					
Conductivity umbos	1400	1100	500	2200	220
pH	7.4	6.6	6.7	7.0	7.4
Temp °C	13.0	14.0	12.5	17.0	15.0

**CDM.**

*environmental engineers, scientists,  
planners, & management consultants*



CITY OF CAMBRIDGE

CAMBRIDGE, MASSACHUSETTS 02139  
TEL. 498-9011

EXECUTIVE DEPARTMENT  
ROBERT W. HEALY  
City Manager

RICHARD C. ROSSI  
DEPUTY CITY MANAGER

October 7, 1985

To the Honorable, the City Council:

Enclosed please find copy of the Final Report of the Phase II  
Monitoring Program for the New Street Dump Site as submitted by Camp  
Dresser & McKee Inc.

Very truly yours,

Robert W. Healy  
City Manager

RWH/mbf  
Enc.

Agenda Item No. 6

S-728

Re: enclosed copy of the Final Report of  
Phase II Monitoring Program for the New  
Street Dump Site as submitted by Camp, Dresser  
& McKee, Inc.

In City Council,

October 7, 1985

10/7/85

Placed on File -