

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUND-WATER CONSULTANTS

R. G. SLAYBACK
G. SIDNEY FOX
FRANK H. CRUM
MICHAEL R. BURKE
ROBERT LAMONICA

72 DANBURY ROAD
WILTON, CT 06897
203-762-1207
FAX 203-762-8062

WILLIAM K. BECKMAN
DAN C. BUZEA

DOUGLAS E. SIMMONS
JOHN NASO, JR.
W. PETER BALLEAU
DAVID SCOTT
LONNIE D. NORMAN
J. KEVIN POWERS

September 21, 1989

Mr. Terry Hughes
The Mearl Corporation
1057 Lower South Street
Peekskill, NY 10566

RE: Professional Engineer's Certification
Tanks Closure and Replacement
Buchanan Facility

Dear Mr. Hughes:

Between March 28 and July 24, 1989, Leggette, Brashears & Graham, Inc. (LBG) observed the removal of two underground storage tanks (one used to store hazardous waste and the other used to store n-butyl acetate) and the installation of three underground storage tanks (one used to store hazardous waste, one used to store n-butyl acetate and one used to store toluene) at the Mearl Corporation's Buchanan, New York facility (EPA ID No. NYDO46341400).

This facility formulates nacreous mother-of-pearl pigments, the majority of which consist of titanium dioxide coated mica flakes and bismuth oxychloride crystals, into various organic products. The production of the bismuth oxychloride pigments requires that a water solution be flushed with organic solvents. These water-organic solutions comprise the bulk waste for the facility. The water-organic waste consists of n-butyl acetate, toluene, glycol ether of propylene glycol, isopropyl alcohol and water. This waste is stored in an underground storage tank prior to being removed from the site. A commercial waste disposal firm, that recycles the waste for energy recovery, is retained to pump out the waste tank into a tank truck so that waste is not stored longer than 90 days. The n-butyl acetate and toluene is stored in underground storage tanks prior to being used in the manufacturing process.

The Buchanan facility has been in operation since 1974 and, as a hazardous waste generator, is subject to the Resource Conservation and Recovery Act (RCRA). The RCRA regulations stipulate that underground storage tanks must be

?

MIDLAND PARK, NEW JERSEY

ST. PAUL, MINNESOTA

ALBUQUERQUE, NEW MEXICO

TAMPA, FLORIDA

SIoux FALLS, SOUTH DAKOTA

EXTON, PENNSYLVANIA

FISHKILL, NEW YORK

PROFESSIONAL ENGINEER'S CERTIFICATION
OF ADHERENCE TO CLOSURE PLAN

PROFESSIONAL ENGINEER'S CERTIFICATION
OF ADHERENCE TO CLOSURE PLAN

The following documentation certifies that the plan for closure of the hazardous waste tank (Tank No. 2) and the n-butyl acetate tank (Tank No. 3) at The Mearl Corporation's Buchanan facility was followed. The plan, which was prepared by The Mearl Corporation and approved by the New York State Department of Environmental Conservation (NYSDEC), was most recently revised in May 1988.

Removal of Liquid from the Tanks

On March 28, 1989, a 5,000-gallon vacuum tanker truck owned by the Oldover Corporation (United States EPA ID. No. VAD040159436) received the contents of the hazardous waste tank, according to procedures outlined in the Closure Plan. The hazardous waste was pumped into the Oldover truck using the existing hazardous waste pump and discharge piping. When the fluid level was too low to continue pumping, the remainder of the waste was removed from the tank using the truck-mounted vacuum pump. Stick measurements of the tank indicated that 3,960 gallons of hazardous waste were in the tank prior to pumping. After pumping with the hazardous waste pump, 360 gallons of waste remained in the tank. Of this remaining volume, approximately 300 gallons were removed with the truck-mounted vacuum pump. The contents of the n-butyl acetate tank were removed, as much as possible, through normal production use prior to the beginning of closure.

Throughout the decommissioning of the hazardous waste tank, all portions of the Closure Plan were followed:

1. A sample of liquid from the hazardous waste tank was taken with a COLIWASA PVC sampler on March 27, 1989. The sample was analyzed by The Mearl Corporation for solids and organics. The results are listed in Appendix I.

2. The fluid level in the hazardous waste tank was determined with a dip stick immediately before transfer.

3. The truck was properly grounded and all equipment in the area was rated Class 1, Division 1, Group D. The truck engine was turned off during the entire transfer.

4. All loading of the truck was done during daylight hours when any leaks from the transfer lines could be seen. No leaks occurred during transfer.

5. Transfer of the waste was done with the existing hazardous waste vertical-turbine pump. The discharge piping was monitored throughout the pumping to make sure no leaks occurred.

6. The trailer of the tank truck was checked to insure the trailer was empty before the transfer of waste occurred.

7. The trailer documents were double-checked to insure all necessary federal and state permits were in order and that the facility receiving the waste was properly licensed. The Oldover Corporation Facility, State Route 652, Arvon, Virginia 23004 (United States EPA ID. NO. VAD098443443) received the hazardous waste.

8. Fire extinguishers, bags of clay absorbent, organic absorbent and a water supply were all on hand during the transfer, as per the Closure Plan.

9. After the truck was filled, the hazardous tank level was again checked with a dip stick to determine the volume of waste removed.

After the transfer was completed, the transfer pump was shut off, the material in the transfer lines was allowed to drain back into the hazardous waste tank. The flexible hose located in the trailer manhole was lifted out of the trailer, and the material in it was allowed to drain into the trailer while being lifted out. The trailer's vacuum pump was then used to remove more of the waste directly from the manhole of the hazardous waste tank. After this transfer was complete, the fill openings on the tank trailer were closed and fastened, the grounding cable was disconnected and the truck was given a general visual inspection. The truck was filled to within 1½ feet of capacity. The manifest was then signed and the truck left the site. The same tanker truck transported the contents of some hazardous waste drums from the Peekskill plant.

The turbine pumps for the hazardous waste tank and the n-butyl acetate tank were removed, along with the hazardous waste piping, the same day as the hazardous waste removal. The pumps and piping were temporarily stored in a warehouse at the Buchanan facility. The piping was cut up and washed in a caustic wash, using the pot washer at the Buchanan facility, and the pumps were reused in the replacement tanks.

Removal of Residual Material in the Tanks

On March 29, 1989, Inland Pollution Services, Inc. (IPSI) cleaned out the hazardous waste tank and the n-butyl acetate tank. Approximately 30 and 60 gallons had to be removed from the n-butyl acetate tank and the hazardous waste tank, respectively. The hazardous waste was put into drums marked "hazardous waste" and stored at the Peekskill facility, to be disposed of within 90 days. IPSI workers removed the liquid by entering the tank and shoveling the liquid into buckets.

The workers hand-cleaned the tanks with brushes and a 2 percent caustic solution called C-wash. A steam cleaner was used to remove the cleaning solution from the top and sides of the tanks. The solution collected in the bottom where it was pumped out using a compressed air-powered diaphragm pump. The rinse water was pumped into drums and transported to the Peekskill facility for disposal into the onsite treatment facility. Samples of the waste cleaning solution were taken and analyzed by The Mearl Corporation. The sample results are included in Appendix I.

After cleaning, the tanks were judged clean on the basis of both a visual inspection and an analysis of the air inside the tank by a MSA Model 361 explosimeter. A lower explosion level reading of 15 percent or lower, of the air inside the tanks was considered clean.

Removal of the Underground Storage Tanks

The concrete cap over the tanks was broken-up and removed on March 31, 1989 by the Crinetti and Wilson Construction Company of 3332 Old Compound Road, Yorktown Heights, New York. On April 5, 1989, the soil over the tanks and the last of the piping was removed. Most of the soil around the sides of the tanks was removed. Steel reinforcement was placed along the west side of the excavation, adjacent to the building, to prevent undermining of nearby manufacturing equipment. The soil was placed directly in a truck upon removal.

On April 7, 1989 the hold-down straps for the tanks were cut, and the tanks were lifted out of the ground by an excavator. The NYSDEC and the local fire marshal were notified prior to the tank removal. A number identifying each tank was spray-painted on the side of each tank immediately upon removal. The n-butyl acetate tank was removed first. Within two minutes after the tank was removed, a sample of the soil directly below the center of the tank was

collected. The same procedure was followed for the soil directly below the center of the hazardous waste tank. The excavator removed the soil at the east end of the pad enabling soil samples to be taken from one foot below the edge of the pad. The locations of the soil samples are shown in figure 1. On April 10, 1989, a soil sample was collected from one foot below the west edge of the pad. All of the samples were collected by LBG, and a field blank was collected on each day of sampling. The field blanks were obtained by pouring double-distilled water over the cleaned soil sampling equipment and collecting it in sample jars. The field blank was used to determine if contaminants could have entered the soil samples from the sampling equipment, the air at the sampling location or in the laboratory analyzing the samples. The samples were analyzed using EPA Method 624 for volatile organics by Envirotech Laboratories, Inc., 315 Fullerton Avenue, Newburgh, New York. The sample procedure and results are listed in Appendix II.

Disposal of Underground Storage Tanks

On April 7, 1989, after the tanks were removed from the ground, they were transported by truck, along with the excavated soil, to the Peekskill facility. The tanks and soil were stored in an open area away from buildings. Plastic sheeting was placed below and on top of the tanks and soil to prevent exposure to, and leaching by, rainwater.

On April 28, 1989, wipe samples of the hazardous waste tank and the n-butyl acetate tank were collected and analyzed using EPA Methods 602 and 624, respectively. The hazardous waste tank sample contained 10 ng/wipe (nanograms per wipe) of toluene. No other contaminants were detected. The wipe area was 1 square foot, and the wetted surface area for the tank is approximately 600 square feet. This means that 6 ug (micrograms) of toluene remain in the tank. The

New York State Ground-Water Standard for toluene is 50 ug/l (micrograms per liter), therefore, 6 ug in a large tank was not of environmental concern.

The n-butyl acetate tank sample contained 220 ng/wipe of n-butyl acetate. No other contaminants were detected. Again, the wipe area was 1 square foot, and the wetted surface area of the tank was approximately 600 square feet. Therefore, 132 ug of n-butyl acetate remain in the tank. There is no New York State Ground-Water Standard for n-butyl acetate and, therefore, 132 ug was also not considered an environmental concern.

The NYSDEC agreed that both tanks were not hazardous and allowed the Mearl Corporation to dispose of them as scrap metal. The wipe sample procedure and results are included in Appendix III.

Laboratory analysis of the soil samples taken from the excavation detected low concentrations of benzene, toluene, ethylbenzene and chloroform. However, these constituents were below the health-based maximum concentration values in terms of exposure potential, according to the NYSDEC guidelines. Furthermore, the chloroform concentration detected in the field blank was higher than the level in the soil. This indicates that the chloroform detected in the soil was probably not in the soil at the time of sampling. It may have come from contamination in the laboratory. Based on these facts, the NYSDEC allowed the excavated soil to be disposed of as clean fill at the Peekskill facility. Furthermore, no remediation or further excavation was required at the Buchanan facility. A letter to this affect is included in Appendix IV.

Certification

Based on observation by me or by staff working under my direct supervision, I hereby certify that closure of the hazardous waste and n-butyl acetate tanks at The Mearl Corporation facility in Buchanan, New York was

performed according to the Closure Plan provided by The Mearl Corporation and last revised in May 1988.

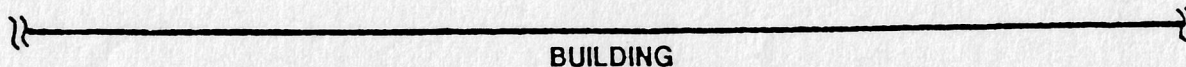
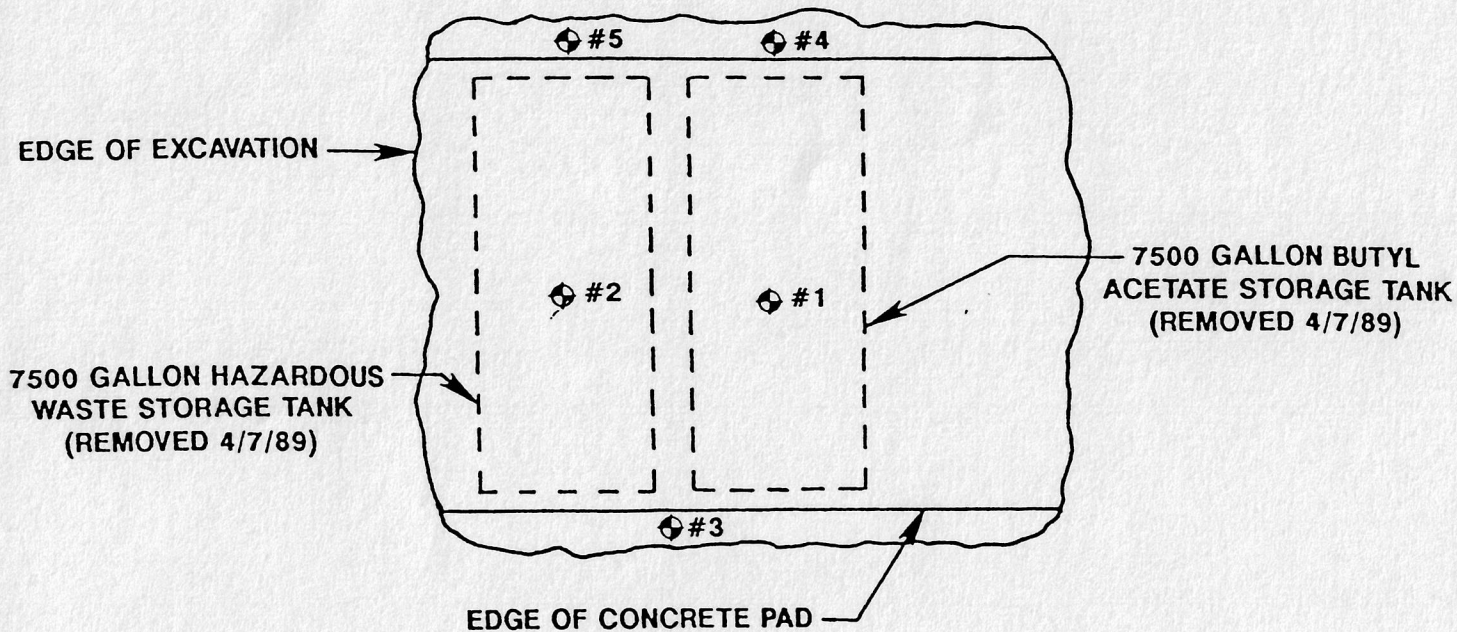
LEGGETTE, BRASHEARS & GRAHAM, INC.

William K Beckman

William K. Beckman, P.E.
Senior Associate



lab
September 21, 1989
89wkb2



LEGEND

#1 SOIL SAMPLE LOCATION

NOT TO SCALE

THE MEARL CORPORATION
16 WHITE STREET
BUCHANAN, NEW YORK

APPROXIMATE LOCATIONS OF SAMPLING COLLECTION POINTS

DATE	REVISED	PREPARED BY:
		 LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: 9/15/89

FIGURE 1

MODE = MEMORY TRANSMISSION

START=MAY-19 16:51

END=MAY-19 16:55

FILE NO.=297

STN NO.	COMM.	ABBR NO.	STATION NAME/TEL NO.	PAGES	DURATION
001	OK	8	17322056868	045/045	00:04:20

-ENGELHARD

***** -WESTCHESTER OPS - ***** 914 734 1929- *****

ENGELHARD

Change the nature of things.

Westchester Operations

Engelhard Corporation
1057 Lower South Street
Peekskill, NY 10566
Phone: (914) 737-2554
Fax: (914) 734-1929

FACSIMILE TRANSMITTAL SHEET

From: Bob McGinnis
Phone: (914) 737-2554 Ext.-221
E-mail: Bob_McGinnis@Engelhard.com

2
Date: May 19, 2003

To: Christopher McKenzie
Firm:BDLAW
Fax Number:212 702 5450

Regarding: This is a record on installation as well as ground testing at the time.

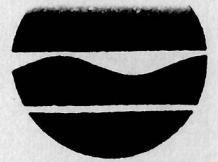
cc: S. Craggum

PART 2
3
4.

APPENDIX IV

State Approval for Soil Disposal

New York State Department of Environmental Conservation
202 Mamaroneck Avenue
White Plains, New York 10601



Thomas C. Jorling
Commissioner

July 19, 1989

Mr. Terry Hughes
Manager of Environmental Affairs
The Mearl Corporation
1057 Lower South Street
Peekskill, New York 10566

Re: Storage of Excavated Soil
Buchanan Facility - EPA ID #NYD046341400

Dear Mr. Hughes:

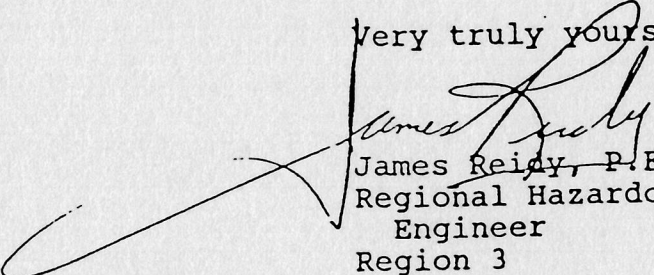
This is in response to your letters of June 22, 1989 and June 29, 1989 regarding the storage/disposal of the excavated soil from the above facility now stored at the Peekskill plant of the Mearl Corporation.

Based on a review of data submitted in your letters, the hazardous constituents present in the soil (toluene, chloroform, benzene and ethyl-benzene) appear to be below the health based maximum concentration values in terms of exposure potential indicated in draft regulatory agency guidelines. Therefore, the soil removed from the Buchanan former underground storage tanks does not need to be disposed at a licensed solid waste or hazardous waste disposal facility.

Please be advised that this determination does not refer to the contaminated soil excavated from the former underground tank farm of the Peekskill facility, which as agreed, must be disposed of off-site in an approved treatment/storage disposal facility.

If you have any questions, please call Wilfredo Palomino at 914-761-6660.

Very truly yours,


James Reidy, P.E.
Regional Hazardous Substances
Engineer
Region 3

JR:eh

cc: A. Klauss, New Paltz
J. Moran, Albany
W. Palomino, White Plains

PROFESSIONAL ENGINEER'S CERTIFICATION OF
DESIGN OF NEW STORAGE TANKS

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL ENGINEER'S CERTIFICATION OF
DESIGN OF NEW STORAGE TANKS

Three 7,700-gallon double-walled steel tanks were installed at The Mearl Corporation's Buchanan facility. The tanks, manufactured by the Clawson Tank Company of Clarkstown, Michigan, are identified as Haz-Tank (TM), Model No. W/T.C.,-ST1-86. The tanks were constructed in accordance with U.L. 58 for secondary containment tanks Type-1. The inner wall of the tanks is made from 316L stainless steel. The STI-P3 Corrosion Protection consists of: 1) electrical isolation of all openings; 2) a SSPC-SP-6 commercial sandblast of the exterior followed by one multi-pass coat of covocote coating applied to the heads at 15 MILS D.F.T. and to the shell at 10 MILS D.F.T.; and 3) a sacrificial zinc anode welded to each tank head. Design drawings of the tanks were reviewed prior to fabrication. To the extent possible by visual inspection, the construction of the tanks was confirmed upon their delivery to the site.

The design of the new storage tanks meet both New York State and Federal Standards. The proposed New York State Standards for constructing new hazardous substance storage facilities (GNYCRR 599) as well as the standards for storing and handling hazardous substances (GNYCRR 598) had not been published at the time of this report and, therefore, could not be used. The Federal Standards are found in 40 CFR 264.192 and 264.193. The design of the storage tanks for the Buchanan facility meets these standards.

Certification

Based on review of design plans and specifications and visual verification in the field by me or staff working under my direct supervision, I hereby certify that the

design of the three tanks installed at The Mearl Corporation facility in Buchanan, New York in April 1989 meets applicable Federal and New York State standards.

LEGGETTE, BRASHEARS & GRAHAM, INC.

William K. Beckman

William K. Beckman, P.E.
Senior Associate



lab
September 21, 1989
89wkb2

PROFESSIONAL ENGINEER'S CERTIFICATION OF THE
INSTALLATION OF THE NEW STEEL TANKS

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL ENGINEER'S CERTIFICATION OF THE
INSTALLATION OF THE NEW STEEL TANKS

The following documentation provides verification that new underground storage tanks were installed at The Mearl Corporation's Buchanan facility, and the installation was completed according to existing regulations and accepted industry standards and practices at the time of installation.

Tank Installation

On April 10, 1989, three double-walled steel tanks were delivered to the Mearl facility in Buchanan, New York. Two of the tanks are to be used for storage of organic chemicals used in the production process of the facility. The other tank is to be used for storage of the liquid hazardous wastes generated by the production process. The tanks were shipped with a vacuum of -8 psig (pounds per square inch-gage) in the interstitial space between the two tank walls. This vacuum was held on all of the tanks during installation, therefore, pressure testing of the outer walls was not necessary.

On April 12, the bedding was prepared and the tanks were installed. The bedding for the two tanks to be used for hazardous materials storage consisted of 14 inches of compacted sand overlying the concrete pad. The bedding for the tank to be used for hazardous waste storage consisted of 10 inches of pea gravel, overlain with 4 inches of compacted sand, placed over the concrete pad. The top of the bedding material was approximately 12 feet below grade. Tiedown anchors extended from the concrete pad through the bedding material. The tanks were inspected for weld breaks, punctures, scrapes in the protective coatings, cracks, corrosion and structural damage before a crane lowered them onto the

bedding. The tanks were then checked for plumbness, placement, levelness and strapped down to the tiedown anchors. The lower halves of the tanks were then buried in sand. Tarps were placed on the east side of the excavation to prevent native material from caving in and mixing with the fill.

On April 13, the upper halves of the tanks were buried with pea gravel, such that only the top few inches of the tanks were exposed. The tanks were pressure tested in ground at 5 psig of compressed air for 2 hours. None of the tanks lost pressure during this time, thus, passing the test. The conductivity lead wires were connected to the tank mounting lugs and run through a PVC conduit along the top of each tank to a terminal installed next to the tank manways. Plastic manholes were bolted to the tank manways. The tanks were then covered with an additional foot of gravel above which a concrete pad was poured. This procedure is consistent with the existing regulations (40 CFR 264.192 and 264.193) and the Steel Tank Institute recommended installation procedure.

Leak Detection Devices

The McIntosh Equipment Corporation of 15 Park Row, New York City, New York, installed a Warrick Model DMS 614 Monitoring System to detect leaks in the three tanks. The hazardous materials tanks were equipped with DSP-2 sensors to detect liquid between the tank walls. The sensors can differentiate between hydrocarbons and water. If the sensors detected hydrocarbons, it would indicate the inner wall was leaking. Similarly, if water was detected, the outer wall would be leaking.

The hazardous waste tank was equipped with a DLP-2 sensor. This sensor cannot differentiate between hydrocarbons and water. Because the hazardous waste has an aqueous phase, this differentiation is not necessary. If a

leak were detected, it would not be immediately known which wall leaked. The tank would have to be emptied and removed for servicing.

Liquid-Level Monitoring Devices

The hazardous materials tanks were equipped with Endress & Hauser LTC 1230 Continuous Capacity Level Measurement Systems. These systems are equipped with probes that continually monitor the liquid levels in the tanks. The systems were calibrated with dip-stick measurements to insure accurate readings.

Because of the viscosity and non-uniform properties of the hazardous waste, electronic liquid-level measurements are not possible. Therefore, the hazardous waste tank was equipped with a FE 2A3CDA steel float alarm to be used with the Warrick Monitoring System. The liquid level in the hazardous waste tank would not be continually monitored, but an alarm would sound if the tank were filled to 90 percent of capacity.

Certification

Based on observation of installation procedures for these tanks at The Mearl Corporation facility in Buchanan, New York during April 1989 by me or staff working under my direct supervision, I hereby certify that the three tanks were installed in accordance with applicable Steel Tank Institute Standards and currently accepted industry standards and practices.

LEGGETTE, BRASHEARS & GRAHAM, INC.

William K. Beckman

William K. Beckman, P.E.
Senior Associate



lab
September 21, 1989
89wkb2

LEGGETTE, BRASHEARS & GRAHAM, INC.

APPENDIX I

Hazardous Waste Laboratory Sample Results

HENRY L. MATTIN LABORATORIES

INTER-OFFICE CORRESPONDENCE

FROM D.M. Bollella

TO R.M. Juby
 RX: HAM, AMK, TH, MN

SUBJECT: Analysis of Buchanan Ignitable
 Waste Sample - Exp. #37

DATE March 30, 1989

A 2 oz. sample of Buchanan ignitable waste was received with the request for solvent analysis. The sample was comprised of two layers and both layers were yellow in color. The layers were isolated using a separatory funnel and each was weighed into a clean, tared jar. Each layer was analyzed individually by GC and the results are reported below.

<u>Solvent</u>	<u>Upper Layer</u>	<u>Lower Layer</u>
Water	1.5%	9.9%
Isopropanol	1.5	0.4
Arcosol PM	5.3	2.8
Toluene	27.0	0.1
nBuOAc	43.0	0.2
nBuOH	0.2	0.1
Total	78.5%	13.5%

*Buchanan
 Tank B-4
 Waste Pickup*

TS (as reported by RMJ) = 8.0%
 Total volatiles (by difference) = 92.0%
 Total 100.0%


D.M. Bollella

Andy,

The two samples brought over from Buchanan Pearl Plant from the cleaning of the underground tanks were both checked for compatibility with our wastewater treatment system, including material of construction and effect on flocculant and/or descalant. The washwater was checked for flashpoint to 150 degrees Fahrenheit, Pensky-Martens, closed cup. The wash was not checked at all since there was a material safety data sheet on the surfactant, which indicated this was not a straight inorganic cleaner, but an alkaline balanced organic surfactant.

Terry

HENRY L. MATTIN LABORATORIES

INTER-OFFICE CORRESPONDENCE

FROM D.M. Bollella

TO R.M. Ruby
 Xrx: HAM, AMK, TH, MN

SUBJECT: Analysis of Buchanan Ignitable Waste
 Samples: Exp. #38 and Exp. #39.

DATE March 31, 1989

Two samples of Buchanan ignitable waste were received with the request for solvent analysis. Both samples were comprised of two layers. The layers of each sample were isolated using a separatory funnel and were weighed into clean, tared jars. Each layer was analyzed individually by GC and the results are reported below.

Experiment #38

*Buchanan
Waste into
Truck Truck*

<u>Solvent</u>	<u>Upper Layer</u>	<u>Lower Layer</u>
Water	1.1%	13.7%
Isopropanol	1.2	0.5
nBuOH	0.2	--
Arcosolv PM	5.7	4.7
Toluene	26.4	0.1
nBuOAc	39.7	0.1
	<u>74.3%</u>	<u>19.1%</u>

TS (as reported by RMJ) = 6.6%
 Total Volatiles (by difference) = 93.4%
 Total 100.0%

*Andy:
This one
is actually
combination
of 2 trucks
Buchanan
& waste
truck.
Terry*

Experiment #39

<u>Solvent</u>	<u>Upper Layer</u>	<u>Lower Layer</u>
Water	1.1%	12.6%
Acetone	1.3	0.4
Isopropanol	1.9	0.6
nBuOH	0.4	---
Arcosolv PM	5.4	3.7
Toluene	27.1	0.1
nBuOAc	36.1	0.3
Amyl Acetates	1.1	---
	<u>74.4%</u>	<u>17.7%</u>

TS (as reported by RMJ) = 7.9%
 Total Volatiles (by difference) = 92.1%
100.0%

APPENDIX II

Soil Sample Laboratory Results

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Mearl Corporation

Lab Number: 74710-001

Project Name: PO#98838

Date Collected: 4/7/89

Sample Location: S1

Date Received: 4/7/89

Matrix: Soil

Date Analyzed: 4/14/89

Method: EPA 624

Report Date: 4/21/89

CAS NO.	COMPOUND	Detection Limit ug/kg	Conc. ug/kg	Data Qualifier
74-87-3	Chloromethane	10		U
74-83-9	Bromomethane	10		U
75-01-4	Vinyl chloride	10		U
75-00-3	Chloroethane	10		U
75-01-2	Methylene chloride	10		U
75-69-4	Trichlorofluoromethane	5.2		U
75-35-4	1,1-Dichloroethene	5.2		U
75-34-3	1,1-Dichloroethane	5.2		U
540-59-0	trans-1,2-Dichloroethene	5.2		U
67-66-3	Chloroform	5.2		U
107-02-2	1,2-Dichloroethane	5.2		U
71-55-6	1,1,1-Trichloroethane	5.2		U
56-23-5	Carbon tetrachloride	5.2		U
75-27-4	Bromodichloromethane	5.2		U
78-87-5	1,2-Dichloropropane	5.2		U
10061-01-5	cis-1,3-Dichloropropene	5.2		U
79-01-6	Trichloroethene	5.2		U
71-43-2	Benzene	5.2		U
124-48-1	Dibromochloromethane	5.2		U
10061-02-6	trans-1,3-Dichloropropene	5.2		U
79-00-5	1,1,2-Trichloroethane	5.2		U
100-75-8	2-Chloroethylvinyl ether	5.2		U
75-25-2	Bromoform	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	5.2		U
127-18-4	Tetrachloroethene	5.2		U
108-88-3	Toluene	5.2	2.3	U
108-90-7	Chlorobenzene	5.2		U
100-41-4	Ethylbenzene	5.2		U
541-73-1	1,3-Dichlorobenzene	5.2		U
95-50-1	1,2-Dichlorobenzene	5.2		U
106-46-7	1,4-Dichlorobenzene	5.2		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Hearl Corporation

Lab Number: 74710-002

Project Name: PO#9883

Date Collected: 4/7/89

Sample Location: S2

Date Received: 4/7/89

Matrix: Soil

Date Analyzed: 4/14/89

Method: EPA 624

Report Date: 4/21/89

CAS NO.	COMPOUND	Detection Limit ug/kg	Conc. ug/kg	Data Qualifier
74-87-3	Chloromethane	10		U
74-83-9	Bromomethane	10		U
75-01-4	Vinyl chloride	10		U
75-00-3	Chloroethane	10		U
75-09-2	Methylene chloride	10		U
75-69-4	Trichlorofluoromethane	5.2		U
75-35-4	1,1-Dichloroethane	5.2		U
75-34-3	1,1-Dichloroethane	5.2		U
540-59-0	trans-1,2-Dichloroethane	5.2	6.5	
67-66-3	Chloroform	5.2		U
107-02-2	1,2-Dichloroethane	5.2		U
71-55-6	1,1,1-Trichloroethane	5.2		U
56-23-5	Carbon tetrachloride	5.2		U
75-27-4	Bromodichloromethane	5.2		U
78-87-5	1,2-Dichloropropane	5.2		U
10061-01-5	cis-1,3-Dichloropropene	5.2		U
79-01-6	Trichloroethene	5.2		U
71-43-2	Benzene	5.2		U
124-48-1	Dibromochloromethane	5.2		U
10061-02-6	trans-1,3-Dichloropropene	5.2		U
79-00-5	1,1,2-Trichloroethane	5.2		U
100-75-8	2-Chloroethylvinyl ether	5.2		U
75-25-2	Bromoform	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	5.2		U
127-18-4	Tetrachloroethene	5.2	3.0	U
108-88-3	Toluene	5.2		U
108-90-7	Chlorobenzene	5.2		U
100-41-4	Ethylbenzene	5.2		U
541-73-1	1,3-Dichlorobenzene	5.2		U
95-50-1	1,2-Dichlorobenzene	5.2		U
106-46-7	1,4-Dichlorobenzene	5.2		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Mearl Corporation

Lab Number: 74744-001

Project Name:

Date Collected: 4/10/89

Sample Location: ^{SAMPLE #3} Saturated - clay to
rocky

Date Received: 4/10/89

Matrix: Water

Date Analyzed: 4/18/89

Method: EPA 624

Report Date: 4/24/89

CAS NO.	COMPOUND	Detection	Conc. ug/kg	Data Qualifier
		Limit ug/kg		
74-87-3	Chloromethane	13		U
74-83-9	Bromomethane	13		U
75-01-4	Vinyl chloride	13		U
75-00-3	Chloroethane	13		U
75-09-2	Methylene chloride	13		U
75-69-4	Trichlorofluoromethane	6.7		U
75-35-4	1,1-Dichloroethene	6.7		U
75-34-3	1,1-Dichloroethane	6.7		U
540-59-0	trans-1,2-Dichloroethane	6.7		U
67-66-3	Chloroform	6.7		U
107-02-2	1,2-Dichloroethane	6.7		U
71-55-6	1,1,1-Trichloroethane	6.7		U
56-23-5	Carbon tetrachloride	6.7		U
75-27-4	Bromodichloromethane	6.7		U
78-87-5	1,2-Dichloropropane	6.7		U
10061-01-5	cis-1,3-Dichloropropene	6.7		U
79-01-6	Trichloroethene	6.7		U
71-43-2	Benzene	6.7		U
124-48-1	Dibromochloromethane	6.7		U
10061-02-6	trans-1,3-Dichloropropene	6.7		U
79-00-5	1,1,2-Trichloroethane	6.7		U
100-75-8	2-Chloroethylvinyl ether	6.7		U
75-25-2	Bromoform	6.7		U
79-34-5	1,1,2,2-Tetrachloroethane	6.7		U
127-18-4	Tetrachloroethene	6.7		U
108-88-3	Toluene	6.7		U
108-90-7	Chlorobenzene	6.7	29	
100-41-4	Ethylbenzene	6.7		U
141-73-1	1,3-Dichlorobenzene	6.7	4.7	U
95-50-1	1,2-Dichlorobenzene	6.7		U
106-46-7	1,4-Dichlorobenzene	6.7		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Mearl Corporation

Lab Number: 74710-003

Project Name: PO#98838

Date Collected: 4/7/89

Sample Location: 84

Date Received: 4/7/89

Matrix: Soil

Date Analyzed: 4/14/89

Method: EPA 624

Report Date: 4/21/89

CAS NO.	COMPOUND	Detection Limit ug/kg	Conc. ug/kg	Data Qualifier
74-87-3	Chloromethane	10		U
74-83-9	Bromomethane	10		U
75-01-4	Vinyl chloride	10		U
75-00-3	Chloroethane	10		U
75-09-2	Methylene chloride	10		U
75-69-4	Trichlorofluoromethane	5.2		U
75-35-4	1,1-Dichloroethene	5.2		U
75-34-3	1,1-Dichloroethane	5.2		U
540-59-0	trans-1,2-Dichloroethene	5.2		U
67-66-3	Chloroform	5.2		U
107-02-2	1,2-Dichloroethane	5.2		U
71-55-6	1,1,1-Trichloroethane	5.2		U
56-23-5	Carbon tetrachloride	5.2		U
75-27-4	Bromodichloromethane	5.2		U
78-87-5	1,2-Dichloropropane	5.2		U
10061-01-5	cis-1,3-Dichloropropene	5.2		U
79-01-6	Trichloroethene	5.2		J
71-43-2	Benzene	5.2	1.9	U
124-48-1	Dibromochloromethane	5.2		U
10061-02-6	trans-1,3-Dichloropropene	5.2		U
79-00-5	1,1,2-Trichloroethane	5.2		U
100-75-8	2-Chloroethylvinyl ether	5.2		U
75-25-2	Bromoform	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	5.2		U
127-18-4	Tetrachloroethene	5.2	5.7	
108-88-3	Toluene	5.2		U
108-90-7	Chlorobenzene	5.2	200	
100-41-4	Ethylbenzene	5.2		U
541-73-1	1,3-Dichlorobenzene	5.2		U
95-50-1	1,2-Dichlorobenzene	5.2		U
106-46-7	1,4-Dichlorobenzene	5.2		

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Mearl Corporation

Lab Number: 74710-004

Project Name: PO#98838

Date Collected: 4/7/89

Sample Location: S5

Date Received: 4/7/89

Matrix: Soil

Date Analyzed: 4/14/89

Method: EPA 624

Report Date: 4/21/89

CAS NO.	COMPOUND	Detection Limit ug/kg	Conc. ug/kg	Data Qualifier
74-87-3	Chloromethane	12		U
74-83-9	Bromomethane	12		U
75-01-4	Vinyl chloride	12		U
75-00-3	Chloroethane	12		U
75-09-2	Methylene chloride	12		U
75-69-4	Trichlorofluoromethane	6.1		U
75-35-4	1,1-Dichloroethane	6.1		U
75-34-3	1,1-Dichloroethane	6.1		U
540-59-0	trans-1,2-Dichloroethene	6.1		U
67-66-3	Chloroform	6.1		U
107-02-2	1,2-Dichloroethane	6.1		U
71-55-6	1,1,1-Trichloroethane	6.1		U
56-23-5	Carbon tetrachloride	6.1		U
75-27-4	Bromodichloromethane	6.1		U
78-87-5	1,2-Dichloropropane	6.1		U
10061-01-5	cis-1,3-Dichloropropene	6.1		U
79-01-6	Trichloroethene	6.1		U
71-43-2	Benzene	6.1		U
124-48-1	Dibromochloromethane	6.1		U
10061-02-6	trans-1,3-Dichloropropene	6.1		U
79-00-5	1,1,2-Trichloroethane	6.1		U
100-75-8	2-Chloroethylvinyl ether	6.1		U
75-25-2	Bromoform	6.1		U
79-34-5	1,1,2,2-Tetrachloroethane	6.1		U
127-18-4	Tetrachloroethene	6.1		
108-88-3	Toluene	6.1	6.1	U
108-90-7	Chlorobenzene	6.1		
100-41-4	Ethylbenzene	6.1	15	U
541-73-1	1,3-Dichlorobenzene	6.1		U
95-50-1	1,2-Dichlorobenzene	6.1		U
106-46-7	1,4-Dichlorobenzene	6.1		

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Mearl Corporation

Lab Number: 74710-005

Project Name: PO#98838

Date Collected: 4/7/89

Sample Location: Field Blank

Date Received: 4/7/89

Matrix: Water

Date Analyzed: 4/14/89

Method: EPA 624

Report Date: 4/21/89

IAS NO.	COMPOUND	Detection	Conc. ug/l	Data Qualifier
		Limit ug/l		
74-87-3	Chloromethane	10		U
74-83-9	Bromomethane	10		U
75-01-4	Vinyl chloride	10		U
75-00-3	Chloroethane	10		U
75-09-2	Methylene chloride	10		U
75-69-4	Trichlorofluoromethane	5.0		U
75-35-4	1,1-Dichloroethene	5.0		U
75-34-3	1,1-Dichloroethane	5.0		U
540-59-0	trans-1,2-Dichloroethene	5.0		U
67-66-3	Chloroform	5.0	20	
107-02-2	1,2-Dichloroethane	5.0		U
71-55-6	1,1,1-Trichloroethane	5.0		U
56-23-5	Carbon tetrachloride	5.0		U
75-27-4	Bromodichloromethane	5.0		U
78-87-5	1,2-Dichloropropane	5.0		U
10061-01-5	cis-1,3-Dichloropropene	5.0		U
79-01-6	Trichloroethene	5.0		U
71-43-2	Benzene	5.0		U
124-48-1	Dibromochloromethane	5.0		U
10061-02-6	trans-1,3-Dichloropropene	5.0		U
79-00-5	1,1,2-Trichloroethane	5.0		U
100-75-8	2-Chloroethylvinyl ether	5.0		U
75-25-2	Bromoform	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	5.0		U
127-18-4	Tetrachloroethene	5.0		U
108-88-3	Toluene	5.0	1.5	J
108-90-7	Chlorobenzene	5.0		U
100-41-4	Ethylbenzene	5.0		U
541-73-1	1,3-Dichlorobenzene	5.0		U
95-50-1	1,2-Dichlorobenzene	5.0		U
106-46-7	1,4-Dichlorobenzene	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Hearl Corporation

Lab Number: 74744-002

Project Name:

Date Collected: 4/10/89

Sample Location: Field Blank

Date Received: 4/10/89

Matrix: Water

Date Analyzed: 4/18/89

Method: EPA 624

Report Date: 4/24/89

CAS NO.	COMPOUND	Detection	Conc. ug/l	Data Qualifier
		Limit ug/l		
74-87-3	Chloromethane	10		U
74-83-9	Bromomethane	10		U
75-01-4	Vinyl chloride	10		U
75-00-3	Chloroethane	10		U
75-09-2	Methylene chloride	10		U
75-69-4	Trichlorofluoromethane	5.0		U
75-35-4	1,1-Dichloroethene	5.0		U
75-34-3	1,1-Dichloroethane	5.0		U
540-59-0	trans-1,2-Dichloroethene	5.0		U
67-66-3	Chloroform	5.0	21	U
107-02-2	1,2-Dichloroethane	5.0		U
71-55-6	1,1,1-Trichloroethane	5.0		U
56-23-5	Carbon tetrachloride	5.0		U
75-27-4	Bromodichloromethane	5.0		U
78-87-5	1,2-Dichloropropane	5.0		U
10061-01-5	cis-1,3-Dichloropropene	5.0		U
79-01-6	Trichloroethane	5.0		U
71-43-2	Benzene	5.0		U
124-48-1	Dibromochloromethane	5.0		U
10061-02-6	trans-1,3-Dichloropropene	5.0		U
79-00-5	1,1,2-Trichloroethane	5.0		U
100-75-8	2-Chloroethylvinyl ether	5.0		U
75-25-2	Bromoform	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	5.0		U
127-18-4	Tetrachloroethene	5.0		U
108-88-3	Toluene	5.0		U
108-90-7	Chlorobenzene	5.0		U
100-41-4	Ethylbenzene	5.0		U
541-73-1	1,3-Dichlorobenzene	5.0		U
95-50-1	1,2-Dichlorobenzene	5.0		U
106-46-7	1,4-Dichlorobenzene	5.0		U

SOIL SAMPLING PROCEDURE
FOR
MEARL CORPORATION
BUCHANAN PEARL PLANT

For Samples Above the Concrete Pad

1. Use a clean garden trowel to uncover soil to be sampled.
2. Sample soil with the garden trowel and place directly into sample jar.
3. Wipe the jar mouth clean of sediment to provide complete seal with lid.
4. Firmly screw on jar lid and label jar.
5. Place jar in cooler containing freeze packs.
6. Initiate chain-of-custody form.
7. Deliver samples to laboratory the same day.

Notes:

- a) "Clean" or "decontaminated" refers to equipment that has been washed with detergent, rinsed with deionized water, rinsed with methanol, rinsed with hexane, rinsed with deionized water and allowed to air dry.
- b) Sample jars will be obtained for Envirotest Laboratories, Inc.
- c) The trip blank will be obtained from Envirotest Laboratories, Inc.

SOIL SAMPLING PROCEDURE
FOR
MEARL CORPORATION
BUCHANAN PEARL PLANT

For Samples Off Edge of Concrete Pad

1. Access to 1 foot beyond the edge of the concrete pad to be provided by contractor removing tanks.
2. Use a hand auger to drill to just above the sampling depth.
3. Decontaminate the auger.
4. Drill to the desired sampling depth and collect the soil sample.
5. Using a clean stainless-steel spatula, fill the sample jars with soil directly from the auger.
6. Wipe the jar mouth clean of sediment to provide complete seal with lid.
7. Firmly screw on jar lid and label jar.
8. Place jar in cooler containing freeze packs.
9. Initiate chain-of-custody form.
10. Deliver samples to laboratory the same day.

Notes:

- a) "Clean" or "decontaminated" refers to equipment that has been washed with detergent, rinsed with deionized water, rinsed with methanol, rinsed with hexane, rinsed with deionized water and allowed to air dry.
- b) Sample jars will be obtained for Envirotest Laboratories, Inc.
- c) The trip blank will be obtained from Envirotest Laboratories, Inc.

APPENDIX III

Wipe Sample Laboratory Results

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: Leggett, Brashears & Graham Lab Number: 75349-001
 Project Name: Mearl/Peekskill Date Collected: 4/28/89
 Sample Location: Tank 2 Date Received: 4/28/89
 Matrix: wipes Date Analyzed: 5/12/89
 Method: EPA 802 Report Date: 5/17/89

CAS NO.	COMPOUND	Detection Limit ng/wipe	Conc. ng/wipe	Data Qualifier
71-43-2	Benzene	1.0		U
108-88-3	Toluene	1.0	10	U
108-90-7	Chlorobenzene	1.0		U
100-41-4	Ethylbenzene	1.0		U
541-73-1	1,3-Dichlorobenzene	1.0		U
95-50-1	1,2-Dichlorobenzene	1.0		U
106-46-7	1,4-Dichlorobenzene	1.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Name: LEG/Hearl

Lab Number: 75349-002

Project Name:

Date Collected: 4/28/89

Sample Location: Tank #3

Date Received: 4/28/89

Matrix: Wipe

Date Analyzed: 5/16/89

Method: EPA 624

Report Date: 5/31/89

CAS NO.	COMPOUND	Detection	Conc. ng/wipe	Data Qualifier
		Limit ng/wipe		
123-86-4	Butyl acetate	100	220	

DATA REPORTING QUALIFIERS

VALUE - A value is reported if the result is greater than or equal to the detection limit.

- U** - Indicates that the compound was analyzed for but not detected. The value followed by the U (e.g. 10U) is the minimum detection limit for the sample based on necessary concentration or dilution action. This is not necessarily the instrument detection limit.
- J** - Indicates an estimated value. This qualifier is used when mass spectral data indicates the presence of a compound that meets the identification criteria and the result is $<$ than the specified detection limit but $>$ than zero.
- B** - This qualifier is used when the analyte is found in the blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- C** - This qualifier applies to pesticide parameters where the identification has been confirmed by gas chromatography/mass spectrometry.

SAMPLE COLLECTION PROCEDURE FOR
AREA SURFACE WIPES

This procedure is used as a qualitative estimate of particulate deposition on surfaces. An area of one square meter or less, measured accurately, is wiped with a piece of Whatman #40, 11.0cm diameter filter paper. The wipe is analyzed for the suspected contaminant.

Procedure

1. Measure accurately an area of one square meter or less.
2. Put on disposable gloves. Using one circle of filter paper, wipe the area in one direction, and then go over the same area, wiping perpendicular to the first direction.
3. Fold the filter paper so that the particulates are inside of the folded filter circle. Roll up the filter and push it into a screw-cap glass test tube. Label the tube with site identification and data collected.
4. Fill out a Tox 5 form for each wipe submitted.

5/18/82

*From State Department of Health
Albany, New York 12237*