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Other - Building  
103 Characterization  
Report

**Final Report**

# **Bldg. 103 Characterization Report**

Robert Bosch Corporation  
South Bend, Indiana

December 2000

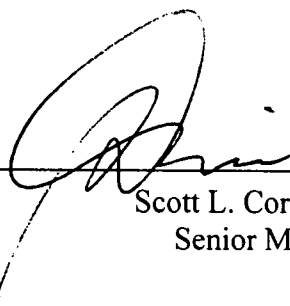


**O'BRIEN & GERE**  
ENGINEERS, INC.

# Final Report

## Bldg. 103 Characterization Report

*Robert Bosch Corporation  
South Bend, Indiana*



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DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT  
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## Contents

List of Tables .....	ii
List of Figures .....	ii
List of Appendices .....	ii
<b>1. Introduction .....</b>	<b>1</b>
1.1. Objective .....	1
1.2. Scope of services.....	1
1.3. Building 103 Background .....	2
1.4. Photographs.....	2
<b>2. Sampling and analysis.....</b>	<b>3</b>
2.1. Sample collection methodology .....	3
2.1.1. Wipe samples .....	3
2.1.2. Bulk asbestos samples .....	3
2.1.3. Grab samples.....	4
2.1.5. Paint chip samples .....	4
2.2. Sample analytical parameters.....	4
2.2.1. Wipe samples .....	5
2.2.2. Bulk asbestos sampling.....	5
2.2.3 Residual material and oil samples.....	5
2.2.4. Paint chip .....	5
2.3. Quality Assurance/quality control.....	5
<b>3. Analytical results .....</b>	<b>7</b>
3.1. Polychlorinated biphenyls .....	7
3.1.1. Wipe samples .....	8
3.1.2. Liquid samples.....	8
3.2. Asbestos containing materials.....	8
3.3. Lead-based paint .....	9
3.4. SVOCs, cyanide, and metals .....	9
3.4.1. Wipe samples .....	9
<b>4. Field findings .....</b>	<b>11</b>
4.1. Lighting and ballasts .....	11
4.2. Electrical, HVAC, and process equipment .....	11
4.3. Chlorofluorocarbons (CFCs).....	12
4.4. Emergency lighting/exit signs.....	12
4.5. Tanks.....	12
4.6. Mercury switches .....	12
<b>5. Summary .....</b>	<b>13</b>

## List of Tables

1. Sample Locations
2. Polychlorinated Biphenyls Analytical Data
3. Asbestos Analytical Data
4. Lead-Based Paint Analytical Data
5. Metals/SVOC Wipe Sample Analytical Data
6. Material Summary

## List of Figures

1. Interior sample locations
2. Roof sample locations
3. Building 103 Items
4. Electrical equipment locations

## List of Appendices

- A. Sampling and Analysis Plan
- B. Photographs
- C. Laboratory Analytical Data Sheets

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## 1. Introduction

O'Brien & Gere Engineers, Inc. (O'Brien & Gere) was retained by Robert Bosch Corporation (Bosch) to assist in the characterization and assessment of Building 103 at the South Bend, Indiana complex for decommissioning and demolition. This chapter summarizes O'Brien & Gere's Scope of Work, work completed under this scope, and a brief history of Building 103.

### 1.1. Objective

The overall project objective is to safely and cost-effectively decommission and demolish Building 103. To meet this objective, an environmental assessment and characterization phase was completed to evaluate current conditions, the need for decontamination, proper transport and disposal options, personnel monitoring requirements, and address construction related issues.

### 1.2. Scope of services

To meet the objective described in Section 1.1, a three part Scope of Work was developed and implemented.

- **Site visit.** An initial site visit was completed October 31, 2000 through November 2, 2000. The purpose of the visit was to:
  - review site files and records to determine site history and past / current Building 103 uses;
  - evaluate the current conditions of Building 103; and
  - gather information to be used for the development of a sampling and analysis plan (SAP).

- **Develop and implement SAP.** Information obtained during the initial site visit was used in the development of a SAP. The SAP (text is attached as Appendix A) presents the proposed sampling locations and protocols, analytical procedures, and health and safety guidelines for the environmental assessment of Building 103. The objective of the SAP was to characterize above-grade environmental areas of potential concern (APCs) to evaluate if decontamination or further investigation is warranted prior to demolition.

Following delivery of the SAP to Bosch personnel, SAP implementation was performed between November 7 and 10, 2000. SAP implementation is discussed in Section 2 of this report.

- **Building characterization report.** Upon receipt of analytical results, a Building Characterization Report (this document) was prepared and presented to Bosch personnel.

### 1.3. Building 103 Background

Building 103 is a part of the original Bendix Corporation industrial complex that began with construction of the first manufacturing building in 1923. In 1983, Allied Corporation purchased the Bendix Corporation. In 1987, Allied Corporation and Signal Corporation merged to form AlliedSignal Corporation. In 1996, the Robert Bosch Corporation purchased the Braking Systems Divisions of AlliedSignal, and the portion of the original Bendix Complex operated by Braking Systems was leased to Robert Bosch. In September 2000, The City of South Bend purchased the building from AlliedSignal (renamed Honeywell), and in turn leased those buildings back to Robert Bosch. Honeywell retains ownership of the property, and responsibility for remediation of soil and groundwater contamination present throughout the complex. As a result of that transaction, Robert Bosch is beginning a large-scale renovation of its buildings, which will include some demolition of Building 103.

### 1.4. Photographs

A photolog of typical APCs has been included as Appendix B.

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## 2. Sampling and analysis

During the sampling and analysis phase, 90 samples were collected to identify APCs in Building 103. The sample breakdown is:

- Twenty-four wipe samples from equipment surfaces, piping and ductwork
- Forty-three bulk asbestos samples
- Six grab samples of residual materials
- Seventeen paint chip samples

Sampling locations are shown on Figures 1 and 2, and are described in Table 1.

### 2.1. Sample collection methodology

The following methods outline the sample collection activities implemented during this assessment.

#### 2.1.1. Wipe samples

Wipe samples for PCB, metal, SVOC and cyanide analyses were collected from non-porous surfaces (e.g., inside ductwork, on equipment, on piping) throughout the building. In addition, wipe sampling was performed on surfaces where residue was suspected, but there was insufficient material to collect a grab sample.

Sampling procedures were as follows: Hexane-soaked gauze pads were utilized for PCB sampling, distilled water-soaked gauze pads were utilized for metal sampling, and dry gauze pads were utilized for SVOC and cyanide sampling. Samples were collected by wiping an area using a horizontal motion, and then flipping the gauze over and wiping the area with a vertical motion. Following sample collection, the gauze pad was placed into a laboratory-provided jar and the chain-of-custody form was filled out. Latex gloves were worn during sampling activities. Following collection of each sample, latex gloves were placed in a plastic trash bag that was tied closed.

#### 2.1.2. Bulk asbestos samples

Bulk asbestos samples were collected by an Indiana accredited asbestos inspector from areas where presumed asbestos containing materials (PACMs) were identified during the initial site visit. PACM samples collected were placed in individual sample containers. Each container



was labeled, recorded in a field log, and chain of custody forms were initiated.

### **2.1.3. Grab samples**

Grab samples of oil reservoirs were collected to evaluate if PCBs are present. Oil reservoirs associated with the elevator and the transformers located outside Building 103 were also sampled.

- **Oil samples.** The sample bottles were removed from the transport containers and prepared for receiving samples. Bottles were checked for appropriate sample identification and labeling. Sample bottles were kept with their caps on until ready to receive the sample. The method used for collecting oil samples from the transformer area was to remove the drain plugs allowing oil to drain into the sample container. Oil that was sampled from the elevator house was retrieved using a turkey baster to remove the oil from the pan and then it was placed in a laboratory-supplied jar, labeled, placed in a cooler and transported to the laboratory via overnight delivery. Following sample collection, the sample location was recorded in the field log.

### **2.1.5. Paint chip samples**

Seventeen paint chip samples were collected throughout the building to determine if the paint material contains lead. Paint chips on the floors, walls, windowsills and ceiling were collected. Each paint chip sample was a full-depth sample to represent layers present in that designated sample location. One paint chip sample was collected from each homogeneous material using a razor blade/utility knife. Following collection, the sample was placed directly into the laboratory-supplied container, the chain-of-custody record was initiated, and the sample location was recorded in the field log.

## **2.2. Sample analytical parameters**

Following completion of the sampling activities, the wipe, grab and paint chip samples were placed into two coolers, packaged with the chain-of-custody forms, and sent via overnight delivery to Fire & Environmental Consulting Laboratories, Inc. (FECL).

Asbestos samples were collected and analyzed by ACM Environmental, Inc., South Bend, Indiana.

### 2.2.1. Wipe samples

Twenty-four wipe samples were submitted for laboratory analysis. Thirteen of the wipe samples were analyzed for PCBs by EPA method 8082. Eleven samples were analyzed for metals (arsenic, cadmium, chromium, lead, nickel, and zinc) by method 6000/7000 series, eight samples were analyzed for semi-volatile organic compounds (SVOCs) by method 8270, and nine samples were analyzed for cyanide by EPA method 9020.

### 2.2.2. Bulk asbestos sampling

Forty-three PACM samples were collected throughout the building and analyzed for the presence of asbestos containing materials (ACM) by standard polarized light microscopy (PLM) method (USEPA Method 600/R-93-116).

### 2.2.3 Residual material and oil samples

Six oil samples were collected from the elevator and transformer reservoirs and were analyzed for PCBs by method 8082.

### 2.2.4. Paint chip

Paint chips on the floors, walls, windowsills and slats and ceiling were collected and analyzed for total lead by EPA method 6020.

## 2.3. Quality Assurance/quality control

Specific QA/QC procedures were followed during the Building 103 assessment. These procedures are summarized below:

**Sample preservation.** Sample containers for the specific sample matrix and analytical procedures were prepared with the appropriate preservative by the laboratory prior to the fieldwork. Each sample collected for analysis was placed in an ice chest for delivery to a certified laboratory.

**Sample shipping.** Samples were transported to the laboratory within the standard holding times. A Chain-of-Custody record form was filled out and accompanied every sample shipment for analytical analysis.

**Sample containers.** Appropriate precleaned sample containers for the specific sample matrix and analytical procedures were supplied by the certified laboratory.

**Certified laboratory.** ACM Environmental, Inc. was used to analyze asbestos samples and FECL, Inc. was used for laboratory analysis on the remaining samples collected. Analytical procedures were conducted in accordance with USEPA methods. Data quality was assessed by method blanks, field duplicates, preparation blanks, and matrix spikes to evaluate potential interferences and laboratory repeatability.



### 3. Analytical results

The findings of the sampling activities are reported by parameter and cleanup criteria (as defined below) as follows:

- Polychlorinated Biphenyls
- Asbestos containing materials
- Lead based paint
- SVOCs, metals, and cyanide

A complete copy of the laboratory results is included in Appendix C. Tables 2-5 summarize the analytical results, including comparison to the following criteria:

**PCB wipe samples.** Results were compared to TSCA-established cleanup levels of:  $<10 \text{ ug}/100 \text{ cm}^2$  for equipment that will be sold or reused;  $100 \text{ ug}/100\text{cm}^2$  for equipment that will be scrapped for smelting.

**PCB oil reservoir samples.** Results were compared to the decontamination standard for oils from machinery. TSCA-established decontamination standard of  $<2 \text{ ppm}$  for non-aqueous organic liquids, as well as the performance based disposal standard of  $>50\text{ppm}$  for incineration.

**Asbestos containing materials.** Samples were analyzed for the presence of ACMs. A material is considered to be an asbestos containing material if it has been demonstrated through approved laboratory procedures to contain asbestos in concentrations exceeding 1%.

**Lead based paint.** Samples were analyzed for the presence of lead based paint. A lead based paint is defined by the EPA (40 CFR Part 745, as published in the Federal Register, March 6, 1996) as a coating containing greater than 5000 ppm (0.5%) of lead by weight.

**SVOC, metal and cyanide wipe samples.** Samples were analyzed for the presence of SVOCs, metals, and cyanide. No comparisons were made.

#### 3.1. Polychlorinated biphenyls

Analytical results of the PCB wipe and oil samples and the applicable TSCA cleanup standards are summarized in Table 2.

### 3.1.1. Wipe samples

Analysis of PCB wipe samples indicate that PCBs were present at varying concentrations below the TSCA wipe sample standard of 10 ug/100 cm<sup>2</sup> in the following locations:

- chain driven crane at Bay O-14
- stained concrete at Bay O-14
- equipment located at Bay H-28
- exhaust motor at Bay I-23
- motor at Bay I-24

Analysis of PCB wipe sample indicate that PCBs are present in concentrations below the TSCA wipe standard of 100 ug/100 cm<sup>2</sup> for equipment that will be scrapped for smelting at the following location:

- crane motor located at Bay G-25

### 3.1.2. Liquid samples

Analysis of six liquid samples indicated that PCBs were present in each of the five transformer oil reservoirs that were sampled outside Building 103. Results indicate that PCBs are present at varying concentrations below the TSCA standard of 50 ppm for performance based disposal. Analysis of the oil sample collected from inside the elevator house located inside Building 103 indicates that PCBs were not present.

## 3.2. Asbestos containing materials

The results of PLM analyses indicate the presence of ACMs throughout Building 103. Table 3 summarizes the sample locations, and analytical results. Estimated quantities of ACM pipe wrap, plaster pipe fitting insulation, floor tile, and sheet-type insulation (transite) are summarized in Table 6.

In general, ACM was found in:

- Roofing materials
- Roof flashing
- Floor tile
- Plaster pipe fitting insulation
- Sheet-type insulation (transite) – refer to Figure 1 for locations
- Pipe insulation
- Window caulking

In accordance with National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61, ACM that may become friable during demolition must be removed prior to demolition activities. At a minimum these items include:

- Pipe insulation
- Sheet-type insulation (transite)
- Damaged floor tile

### 3.3. Lead-based paint

Seventeen paint chip samples of suspect lead-based paint from Building 103 were collected and analyzed. These samples were located throughout Building 103, and were not isolated to specific areas or colors.

Six samples yielded results below the 5,000 ppm by weight limit established by Housing and Urban Development (HUD). Based on analytical results, the red safety paint located on columns, white ceiling paint located in column M, white ceiling paint east of row 15, and gray paint on paint on motor control centers located on elevated platforms in Building 103 are considered to be non-lead-based. Table 4 summarizes the analytical results for lead-based paint.

Two sample locations yielded results greater than 4,500 ppm, but less than 5,000 ppm. Because the results are within 10% of the HUD limits for lead-based paint they will be assumed to be lead-based. The nine remaining samples yielded results above the 5000 ppm by weight limit established by HUD for total lead concentrations. Based on these analytical results, with exception of the areas identified above, remaining painted surfaces in Building 103 are assumed to be lead-based.

### 3.4. SVOCs, cyanide, and metals

#### 3.4.1. Wipe samples

Analysis of eleven wipe samples indicates the presence of metals and cyanide throughout Building 103. Analysis did not indicate the presence of SVOCs inside the building. The purpose of these samples was to establish the presence of SVOCs, metals and cyanide for two reasons:

1. provide the environmental/demolition contractors with a working knowledge of potential health and safety issues that may arise during the demolition activities
2. make the environmental/demolition contractors aware of permit requirements that may be exceeded by washwater discharged to the POTW.

Wipe sample analytical data is presented in Table 5.



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## **4. Field findings**

This chapter provides a summary of environmental-related issues to be addressed prior to or during demolition. These issues include lighting fixtures/bulbs, lighting and ballasts, possible CFC containing equipment, electrical, HVAC, and process equipment, radioactive materials (exit signs) and mercury containing switches/fuses. Table 6 summarizes field findings and provides recommendations on when materials should be removed. Figures 3 and 4 show the location of these items.

### **4.1. Lighting and ballasts**

Lighting equipment was identified in two areas in Building 103, the demolition area and the portion of the building to be reused. Approximately fifty high intensity discharge (HID) sodium vapor lighting fixtures with ballasts, 135 mercury vapor lights, and fifty fluorescent lighting fixtures are present in the area to be demolished.

Light totals for the remaining portion of Building 103 are as follows: 290 mercury vapor, 20 sodium vapor and 160 fluorescent fixtures.

### **4.2. Electrical, HVAC, and process equipment**

There are six oil filled transformers located outside of Building 103, the remaining transformers throughout Building 103 are the dry-type. Only five of the six oil filled transformers were sampled. The sixth transformer will be sampled prior to removal.

There are numerous electrical busses, electrical switchgear, and capacitors located throughout the building that, based on visual examinations, will require surficial decontamination.

Unused HVAC and process equipment is located throughout the building. These items include exhaust systems, fan motors, overhead cranes, etc. Visual inspections and wipe sampling indicate that extensive decommissioning of these items is not required, although residual dust and grime will need to be removed prior to removal.



#### **4.3. Chlorofluorocarbons (CFCs)**

Historically, drinking fountains and air conditioning units have been a common source of CFCs. Building 103 contains two drinking fountains that may contain CFCs; however, the fountains were not dismantled to confirm the absence or presence of CFCs. In addition a total of 12 air conditioning units (including 2 in the area to be demolished and 7 unused units in the area to be renovated) are located in Building 103. No other suspect CFC-containing equipment was identified in Building 103.

#### **4.4. Emergency lighting/exit signs**

Building 103 contains ten emergency lighting (with battery back-up) units throughout the building. Also, there are five exit signs that may contain radioactive illumination throughout the building. Emergency lighting and exit signs do not appear to be present in demolition portion of Building 103.

#### **4.5. Tanks**

There is one 1,000-gal aboveground storage tank located outside the southwest side of the building. The tank, which was previously decommissioned, contained ammonia, which was used in the heat treat process.

#### **4.6. Mercury switches**

There are two mercury switches located in the portion of Building 103 identified for demolition. Mercury-containing devices were not identified in the portion of Building 103 that is to be renovated.

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## 5. Summary

Bosch retained O'Brien & Gere to assist in the characterization and assessment of Building 103 prior to decommissioning and demolition. The site visit and sampling and analysis phases identified the following environmental issues that are to be addressed prior to demolition:

- Although PCBs were located in stained areas on building surfaces, the results are below TSCA cleanup standards ( $<10 \text{ ug}/100 \text{ cm}^2$ ).
- Although PCBs were detected on equipment throughout Building 103, levels are within the TSCA standards for equipment that will be scrapped for smelting ( $<100 \text{ ug}/100 \text{ cm}^2$ ).
- ACM is located throughout Building 103, primarily in pipe insulation and fittings, window caulking, sheet-type insulation, roof material and flashing. ACM roof material and flashing, and ACM window caulking was identified as being in non-friable condition. Fire doors are assumed to contain encapsulated ACM, allowing for the removal and disposal during demolition or renovation phases. ACM shall be properly abated prior to demolition / renovation.
- Lead-based paint was identified on walls, ceilings, and columns throughout the building. Lead paint that is loose, flaking, or has fallen on floors, ceilings, etc. should be abated prior to demolition or renovation.
- Analytical results indicate the presence of metals and cyanide throughout the building, primarily in dust, dirt, and grime that has accumulated on building and equipment surfaces. Dust, dirt, and grime should be removed prior to demolition and renovation.
- Other hazardous materials including, but not limited to, CFCs, free mercury (e.g., mercury switches), fluorescent lights, mercury vapor lights, sodium vapor lights, etc. are located throughout the building. These items should be removed from the building prior to demolition or renovation activities.

Table 6 summarizes the types of materials found at the site, estimated quantities (where applicable) of each material, and recommendations for addressing these materials (e.g., abatement, demolition, manage in-place).



## Tables



**O'BRIEN & GERE**  
ENGINEERS, INC.

**Bosch Building 103 Characterization Report**  
**South Bend, Indiana**  
**Sample Identification**

**Table 1**

<b>Sample ID</b>	<b>Location</b>	<b>Analytical Parameter</b>
103-PACM-1	Roof material - lower portion	Asbestos
103-PACM-2	Roof flashing - lower portion	Asbestos
103-PACM-3	Roof material - upper portion	Asbestos
103-PACM-4	Roof material - lower portion	Asbestos
103-PACM-5	Roof flashing - lower portion	Asbestos
103-PACM-6	Metal siding - on penthouse	Asbestos
103-PACM-7	Roof material - upper portion	Asbestos
103-PACM-8	Roof material - lower portion	Asbestos
103-PACM-9	Roof flashing - lower portion	Asbestos
103-PACM-10	window caulking from windows on roof top	Asbestos
103-PACM-11	Roof material - upper portion	Asbestos
103-PACM-12	Roof material - lower portion	Asbestos
103-PACM-13	Roof flashing - lower portion	Asbestos
103-PACM-14	Roof material - from angled roof	Asbestos
103-PACM-15	Window caulking - from window by angled roof	Asbestos
103-PACM-16	Roof material - upper portion	Asbestos
103-PACM-17	Roof material - lower portion	Asbestos
103-PACM-18	Roof flashing - lower portion	Asbestos
103-PACM-52	Window caulking - bay E25	Asbestos
103-PACM-53	Pipe insulation - office area E25	Asbestos
103-PACM-54	Mag pipe insulation - bay F25	Asbestos
103-PACM-55	Sheet type insulation - bay H26	Asbestos
103-PACM-56	Floor tile - N28 office area	Asbestos
103-PACM-57	Wall board - old office area	Asbestos
103-PACM-58	Ceiling tile- old office area	Asbestos
103-PACM-59	Wall plaster - old office area	Asbestos
103-PACM-60	Wall plaster - transformer room in old office area	Asbestos
103-PACM-61	Rubber base board w/glue - old office area	Asbestos
103-PACM-62	Ceiling tile - old office area (open room)	Asbestos
103-PACM-63	Wall board - old office area (open room)	Asbestos
103-PACM-64	Wall plaster - old office area (open room)	Asbestos
103-PACM-65	Ceiling wall board - old office area (open room)	Asbestos
103-PACM-66	Vinyl flooring - bathroom in old office area	Asbestos
103-PACM-67	9x9 floor tile - bathroom in old office area	Asbestos
103-PACM-68	Ceiling tile - bathroom in old office area	Asbestos
103-PACM-69	Wall board - bathroom in old office area	Asbestos
103-PACM-70	Orange spray on foam - outside of old office area	Asbestos
103-PACM-71	Orange spray on foam - outside of old office area	Asbestos
103-PACM-72	Orange spray on foam - outside of old office area	Asbestos
103-PACM-73	Plaster material -in ceiling bay N15	Asbestos
103-PACM-74	Floor tile w/glue - mezzanine bathroom	Asbestos
103-PACM-50	Mudded elbow - bay E25	Asbestos
103-PACM-76	Fiberglass pipe wrap - F25	Asbestos
103-1	Equipment surface in former transformer room on north side of building	PCB
103-2	Metal beam in former transformer room on north side of building	PCB
103-3	Piping at Bay H26	SVOC, cyanide, metals
103-4	Top of box at Bay L22	SVOC, cyanide, metals
103-5	Beam at top of ladder at Bay F5	SVOC, cyanide, metals
103-6	Top of brick wall at Bay F24	SVOC, cyanide, metals
103-7	Green paint in NW corner of former office area	Lead Paint
103-8	Brown & green paint from door of transformer room	Lead Paint

**Bosch Building 103 Characterization Report**  
**South Bend, Indiana**  
**Sample Identification**

**Table 1**

<b>Sample ID</b>	<b>Location</b>	<b>Analytical Parameter</b>
103-9	Paint from wall next to transformer room door	Lead Paint
103-10	Orange & beige from switch gear box inside transformer room	Lead Paint
103-11	Textured beige paint in east wall of (former) west office area	Lead Paint
103-12	Beige paint from heat register in (former) office area	Lead Paint
103-13	White paint on north wall (behind drywall) of former office area	Lead Paint
103-14	Black paint on bricks behind drywall in former office area (north wall)	Lead Paint
103-15	Beige paint from SE side of entrance to (former) east office area	Lead Paint
103-16	Red paint on Column M-17/16	Lead Paint
103-17	Brown, blue, yellow, beige, & green paint on Column M17	Lead Paint
103-18	Blue, beige & green paint at Column J17	Lead Paint
103-19	Yellow, green & blue paint at Column H23	Lead Paint
103-20	Inside exhaust system at Bay H23	SVOC, cyanide, metals
103-21	Inside exhaust system at Bay K19 (taken from roof)	SVOC, cyanide, metals
103-22	Inside exhaust system at Bay G26 (taken from roof)	SVOC, cyanide, metals
103-23	Inside exhaust system at Bay E21 (taken from roof)	SVOC, cyanide, metals
103-24	Elevator house floor	PCB
103-25	Elevator house drip pan (liquid)	PCB
103-26	Brown ceiling paint at Bay I24	Lead Paint
103-27	Red paint at Column G25	Lead Paint
103-28	Transformer room floor	PCB
103-29	Top of light fixture from platform at Bay L22	metals
103-30	Chain driven crane at Bay O14	PCB
103-31	Stained area on floor at Bay O14	PCB
103-32	Pipe tray at Bay L13	metals
103-33	Motor on platform at Bay D4	PCB
103-34	Equipment at Bay H28	PCB
103-35	Exhaust motor at I-23	PCB
103-36	White ceiling paint at Bay L22 (taken from platform)	Lead Paint
103-37	Grey paint on switch gear at Bay L22	Lead Paint
103-40	Motor on platform at Bay I24	PCB
103-41	Cylinders at Bay G25	SVOC, cyanide, metals, PCB
103-42	Crane at Bay G25	PCB
103-43	Exhaust motor at F26	PCB
103-T1	Southwest transformer	PCB
103-T2	West transformer	PCB
103-T3	Northwest transformer	PCB
103-T4	Northeast transformer	PCB
103-T6	Southeast transformer	PCB

**Bosch Building 103 Characterization Report**  
**South Bend, Indiana**  
**Polychlorinated Biphenyls Analytical Data**  
**USEPA-8082**

Table 2

Wipe Samples (by USEPA-8082)													TSCA Standard Limits
LOCATION	103-1	103-2	103-24	103-28	103-30	103-31	103-33	103-34	103-35	103-40	103-41	103-42	103-43
ANALYTICAL PARAMETER													
PCB-1016	<50	<20	<1	<10	<3	<2	<10	<2	<1	<2	<1	<20	<1
PCB-1221	<50	<20	<1	<10	<3	<2	<10	<2	<1	<2	<1	<20	<1
PCB-1232	<50	<20	<1	<10	<3	<2	<10	<2	<1	<2	<1	<20	<1
PCB-1242	<50	<20	<1	<10	<3	<2	<10	<2	<1	<2	<1	<20	<1
PCB-1248	<50	<20	<1	<10	<3	<2	<10	<2	<1	<2	<1	<20	<1
PCB-1254	<50	<20	<1	<10	6	2.6	<10	4	<1	3.6	<1	90	2
PCB-1260	<50	<20	<1	<10	<3	<2	<10	<2	1	<2	<1	<20	<1

Oil Reservoir Samples (by USEPA-8082)

LOCATION	103-T1	103-T2	103-T3	103-T4	103-T6	103-T5	Criteria for oil reservoirs
ANALYTICAL PARAMETER							
PCB-1016	<3	<3	<3	<9	<3	<3	<50
PCB-1221	<3	<3	<3	<9	<3	<3	<50
PCB-1232	<3	<3	<3	<9	<3	<3	<50
PCB-1242	<3	<3	<3	<9	<3	<3	<50
PCB-1248	<3	<3	<3	<9	<3	<3	<50
PCB-1254	<3	<3	<3	<9	<3	<3	<50
PCB-1260	16	15	14	32	15	<3	<50

NOTES:

1. Criteria and concentrations for oil reservoir samples shown in mg/kg (ppm).
2. Criteria and concentrations for wipe samples shown in ug / 100 cm<sup>2</sup>.
3. Bold type indicates exceedance of action level.
4. Due to matrix interference, method detection limits for samples 103-1, 103-2, and 103-42 were elevated. The detection limits are within the TSCA standard of 100 ug/100 cm<sup>2</sup> for equipment that will be scrapped for smelting.

**Bosch Building 103 Characterization Report**  
**South Bend, Indiana**  
**Asbestos Analytical Data**  
 USEPA-600/R-93-116

Table 3

Sample ID	Location	Analytical Result
103-PACM-1	Roof material - lower portion	N.D.
103-PACM-2	Roof flashing - lower portion	Chrysotile 10%
103-PACM-3	Roof material - upper portion	N.D.
103-PACM-4	Roof material - lower portion	N.D.
103-PACM-5	Roof flashing - lower portion	Chrysotile 25%
103-PACM-6	Metal siding (galbestos) - on penthouse	Chrysotile 45%
103-PACM-7	Roof material - upper portion	N.D.
103-PACM-8	Roof material - lower portion	N.D.
103-PACM-9	Roof flashing - lower portion	Chrysotile 15%
103-PACM-10	Window caulking from windows on roof top	Chrysotile 2%
103-PACM-11	Roof material - upper portion	N.D.
103-PACM-12	Roof material - lower portion	N.D.
103-PACM-13	Roof flashing - lower portion	Chrysotile 15%
103-PACM-14	Roof material - from angled roof	N.D.
103-PACM-15	Window caulking - from window by angled roof	N.D.
103-PACM-16	Roof material - upper portion	N.D.
103-PACM-17	Roof material - lower portion	N.D.
103-PACM-18	Roof flashing - lower portion	Chrysotile 20%
103-PACM-52	Window caulking - bay E25	N.D.
103-PACM-53	Pipe insulation - office area E25	N.D.
103-PACM-54	Mag pipe insulation - bay F25	Chrysotile 80%
103-PACM-55	Sheet type insulation - bay H26	Chrysotile 35%
103-PACM-56	Floor tile - N28 office area	Chrysotile 10%
103-PACM-57	Wall board - old office area	N.D.
103-PACM-58	Ceiling tile- old office area	N.D.
103-PACM-59	Wall plaster - old office area	N.D.
103-PACM-60	Wall plaster - transformer room in old office area	N.D.
103-PACM-61	Rubber base board w/glue - old office area	N.D.
103-PACM-62	Ceiling tile - old office area (open room)	N.D.
103-PACM-63	Wall board - old office area (open room)	N.D.
103-PACM-64	Wall plaster - old office area (open room)	N.D.
103-PACM-65	Ceiling wall board - old office area (open room)	N.D.
103-PACM-66	Vinyle flooring - bathroom in old office area	N.D.
103-PACM-67	9x9 floor tile & mastic - bathroom in old office area	Chrysotile 5%
103-PACM-68	Ceiling tile - bathroom in old office area	N.D.
103-PACM-69	Wall board - bathroom in old office area	N.D.
103-PACM-70	Orange spray on foam - outside of old office area	N.D.
103-PACM-71	Orange spray on foam - outside of old office area	N.D.
103-PACM-72	Orange spray on foam - outside of old office area	N.D.
103-PACM-73	Plaster material -in ceiling bay N15	N.D.
103-PACM-74	Floor tile w/glue - mezzanine bathroom	N.D.
103-PACM-50	Mudded elbow - bay E25	N.D.
103-PACM-76	Fiberglass pipe wrap - F25	N.D.

NOTES:

1. Samples collected on November 7 - 10, 2000 by ACM Environmental, Inc.
2. Samples analyzed by ACM Environmental, Inc., South Bend, IN.



Bosch Building 103 Characterization Report  
South Bend, Indiana  
Lead Based Paint Analytical Data  
USEPA-6020

Table 4

SAMPLE IDENTIFICATION	RESULTS	ACTION LEVEL
103-7	4,520	5000 ppm
103-8	1,060	5000 ppm
<b>103-9</b>	<b>10,400</b>	5000 ppm
<b>103-10</b>	<b>30,800</b>	5000 ppm
<b>103-11</b>	<b>5,100</b>	5000 ppm
<b>103-12</b>	<b>6,170</b>	5000 ppm
<b>103-13</b>	<b>13,300</b>	5000 ppm
<b>103-14</b>	<b>13,400</b>	5000 ppm
103-15	2,020	5000 ppm
103-16	1,730	5000 ppm
<b>103-17</b>	<b>13,700</b>	5000 ppm
<b>103-18</b>	<b>8,010</b>	5000 ppm
<b>103-19</b>	<b>43,500</b>	5000 ppm
103-26	4,510	5000 ppm
103-27	2,400	5000 ppm
103-36	2,130	5000 ppm
103-37	2,570	5000 ppm

Notes:

1. Action level as listed in 40 CFR 475.
2. Criteria and results are shown in parts per million.
3. Samples collected on November 7 - 10, 2000.
4. Samples analyzed by FECL in East Lansing, Michigan
5. Bold type indicates exceedance of action level.

**Bosch Building 103 Characterization Report**  
**South Bend, Indiana**  
**Metals / SVOC / Cyanide Wipe Sample Analytical Data**  
 USEPA-6020/8270/9020

Table 5

LOCATION											
ANALYTICAL PARAMETER	103-3	103-4	103-5	103-6	103-20	103-21	103-22	103-23	103-29	103-32	103-41
Arsenic, Total	15.2	<10	<10	45.6	16.7	<10	<10	<10	<10	38.5	25.0
Cadmium, Total	59.8	342	22.7	178	9.4	<5.0	11.0	<5.0	38.9	293	132
Chromium, Total	6,970	244	154	3,830	900	66.2	919	7,590	257	645	3,960
Lead, Total	26,500	1,080	699	1,750	2,650	336	631	1,380	1,250	1,170	1,590
Nickel, Total	347	<50	<50	505	384	<50	724	181	91.2	179	2,440
Zinc, Total	6,400	6,460	1,290	5,050	93,900	160	687	290	1,000	4,310	14,800
Cyanide	1.42	1.68	0.64	5.4	1.56	0.68	7.44	7.84	-	-	3.2
Acenaphthene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Acenaphthylene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Anthracene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Benzo(a)anthracene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Benzo(b)fluoranthene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Benzo(k)fluoranthene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Benzo(ghi)perylene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Benzo(a)pyrene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
bis(2-Chloroethoxy)methane	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
bis(2-Chloroethyl)ether	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
bis(2-Chloroisopropyl)ether	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
bis(2-Ethylhexyl)phthalate	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4-Bromophenyl phenyl ether	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Butyl benzyl phthalate	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4-Chloroaniline	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2-Chloronaphthalene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4-Chloro-3-methylphenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2-Chlorophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4-Chlorophenyl phenyl ether	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Chrysene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
p,m-Cresol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
o-Cresol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Dibenzo(ah)anthracene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Dibenzofuran	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
di-n-Butyl phthalate	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
1,2-Dichlorobenzene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
1,3-Dichlorobenzene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
1,4-Dichlorobenzene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
3,3'-Dichlorobenzidine	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,4-Dichlorophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Diethyl phthalate	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,4-Dimethylphenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Dimethyl phthalate	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4,6-Dinitro-2-methylphenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,4-Dinitrophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,4-Dinitrotoluene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,6-Dinitrotoluene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
di-n-Octyl phthalate	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Fluoranthene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Fluorene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Hexachlorobenzene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Hexachlorobutadiene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Hexachlorocyclopentadiene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Hexachloroethane	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Indeno(1,2,3-cd)pyrene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Isophorone	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2-Methylnaphthalene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Naphthalene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2-Nitroaniline	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
3-Nitroaniline	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4-Nitroaniline	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Nitrobenzene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2-Nitrophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
4-Nitrophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
N-Nitrosodiphenylamine	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
N-Nitrosodi-n-propylamine	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Pentachlorophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Phenanthrene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Phenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
Pyrene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
1,2,4-Trichlorobenzene	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,4,5-Trichlorophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600
2,4,6-Trichlorophenol	<10	<20	<80	<40	<20	<20	<320	<80	-	-	<1600

NOTES: 1 Concentrations shown in ug / 100 cm2.  
 2 Bold type indicates presence of parameter.  
 3 "-": Sample not analyzed for parameter.

**Bosch Building 103 Characterization Report**  
**South Bend, Indiana**  
**Material Summary**

Table 6

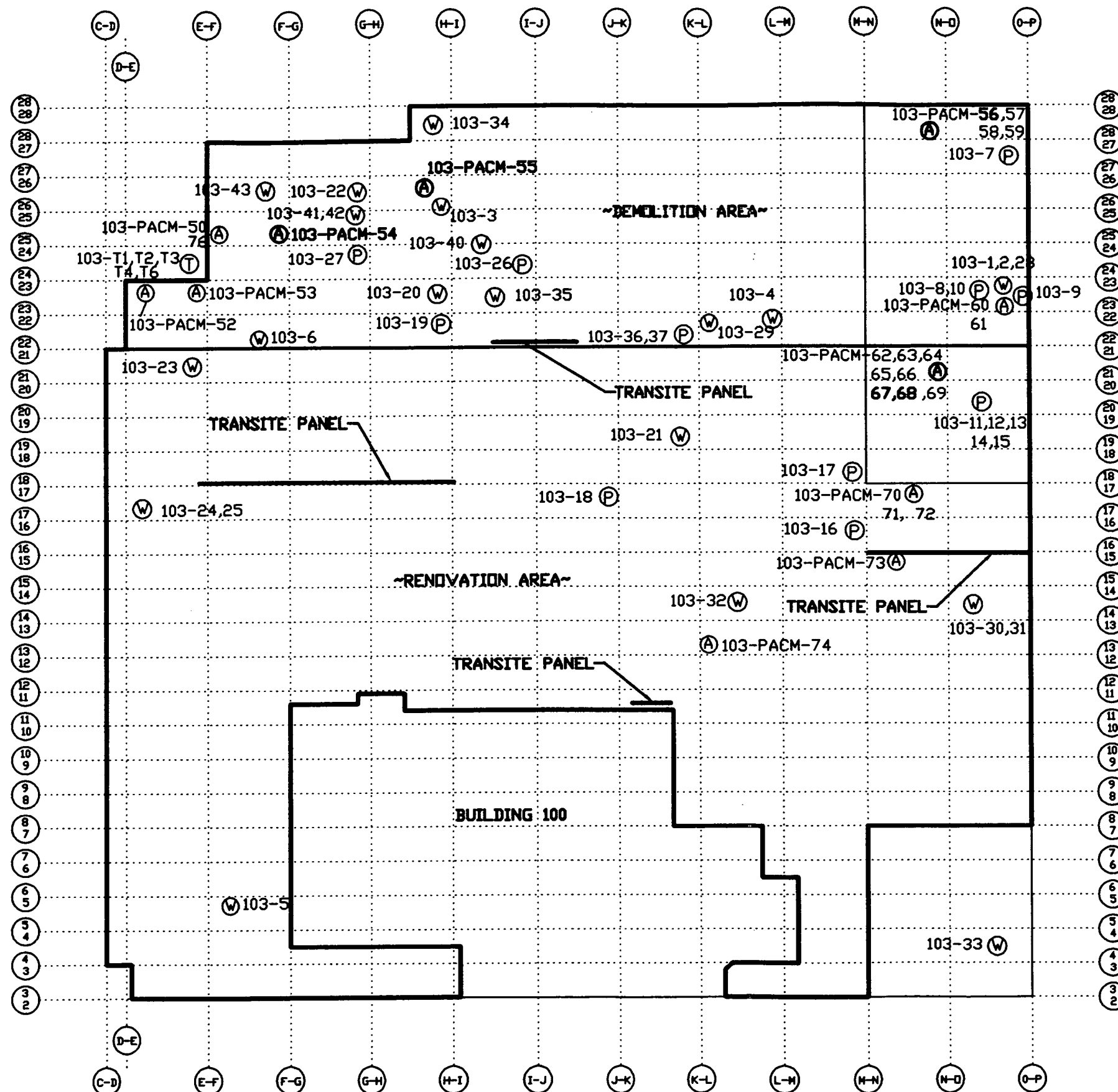
Material	Demolition area (quantity if necessary)	Renovation Area (quantity)
ACM Roof Material / ACM Roof Flashing	Leave for demolition phase - demolish with rest of building, and dispose of with demolition debris and (as long as demolition doesn't include burning, sawing, or other means that could cause the material to become friable).	Manage in-place / remove if becomes friable. For future work: if removing existing roof - roofing contractor must be certified; if laying new roof over existing - roofing contractor must be notified of the presence of ACM.
ACM Window Caulking	Leave for demolition phase and remove window prior to demolition. Material can be handled the same as ACM roof material during demolition phase.	Manage in-place / remove if becomes friable
ACM Pipe Insulation	Remove during abatement phase (Bldg. 103 Total - 15,500 ln. ft.)	Remove during abatement phase
Plaste Pipe Fitting Insulation	Remove during abatement phase (Bldg. 103 Total - 300)	Remove during abatement phase
ACM Floor Tile	Remove friable materials (100 sq. ft.) during abatement phase; remaining ACM floor tile removed during demolition.	Remove friable materials during abatement phase (none identified)
ACM Sheet-type Insulation (Transite)	Remove during abatement phase (Bldg. 103 Total - 2,800 sq. ft.)	Remove during abatement phase
Lead Paint	Remove loose and flaking paint during abatement phase	Remove loose and flaking paint during abatement phase
CFC equipment	Remove during abatement phase (2 drinking fountains, 2 A/C units)	Remove unused equipment during abatement phase (12 A/C units total (7 unused)
Mercury switches	Remove during abatement phase (2 identified)	Remove unused equipment during abatement phase (none identified)
Fluorescent lights (w/ non-PCB ballast)	Remove during abatement phase (50 fixtures in three sizes)	Manage unused fixtures in-place, remove unused fixtures prior to renovation (160 fixtures total)
Mercury vapor lights	Remove during abatement phase (135 lights)	Manage unused fixtures in-place & remove prior to renovation (290 fixtures total)
Sodium vapor lights	Remove during abatement phase (50 lights)	Manage unused fixtures in-place & remove prior to renovation (20 fixtures total)
Emergency lighting / exit signs	Remove during abatement phase (none in demo portion)	Manage unused fixtures in-place & remove prior to renovation (10 emergency lights and 5 exit signs total)
Misc. equipment (motors, tanks, electrical equipment, etc.)	Clean and remove during abatement phase.	Clean and remove unused equipment during abatement phase.

## Figures



**O'BRIEN & GERE**  
ENGINEERS, INC.

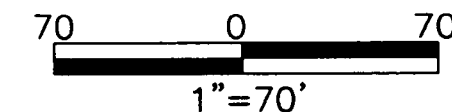
FIGURE 1



- (A) SUSPECT ASBESTOS SAMPLES
  - (P) LEAD BASED PAINT SAMPLES
  - (W) WIPE SAMPLES (PCBs, SVOCs, METALS CYANIDE)
  - (T) TRANSFORMER SAMPLES (PCBs)
- NOTE: LOCATIONS IN BOLD ARE CONSIDERED TO BE ACM

ROBERT BOSCH CORPORATION  
BUILDING 103  
SOUTH BEND, INDIANA

### INTERIOR SAMPLE LOCATIONS



FILE NO. 6407.27737.103-int  
12/2000

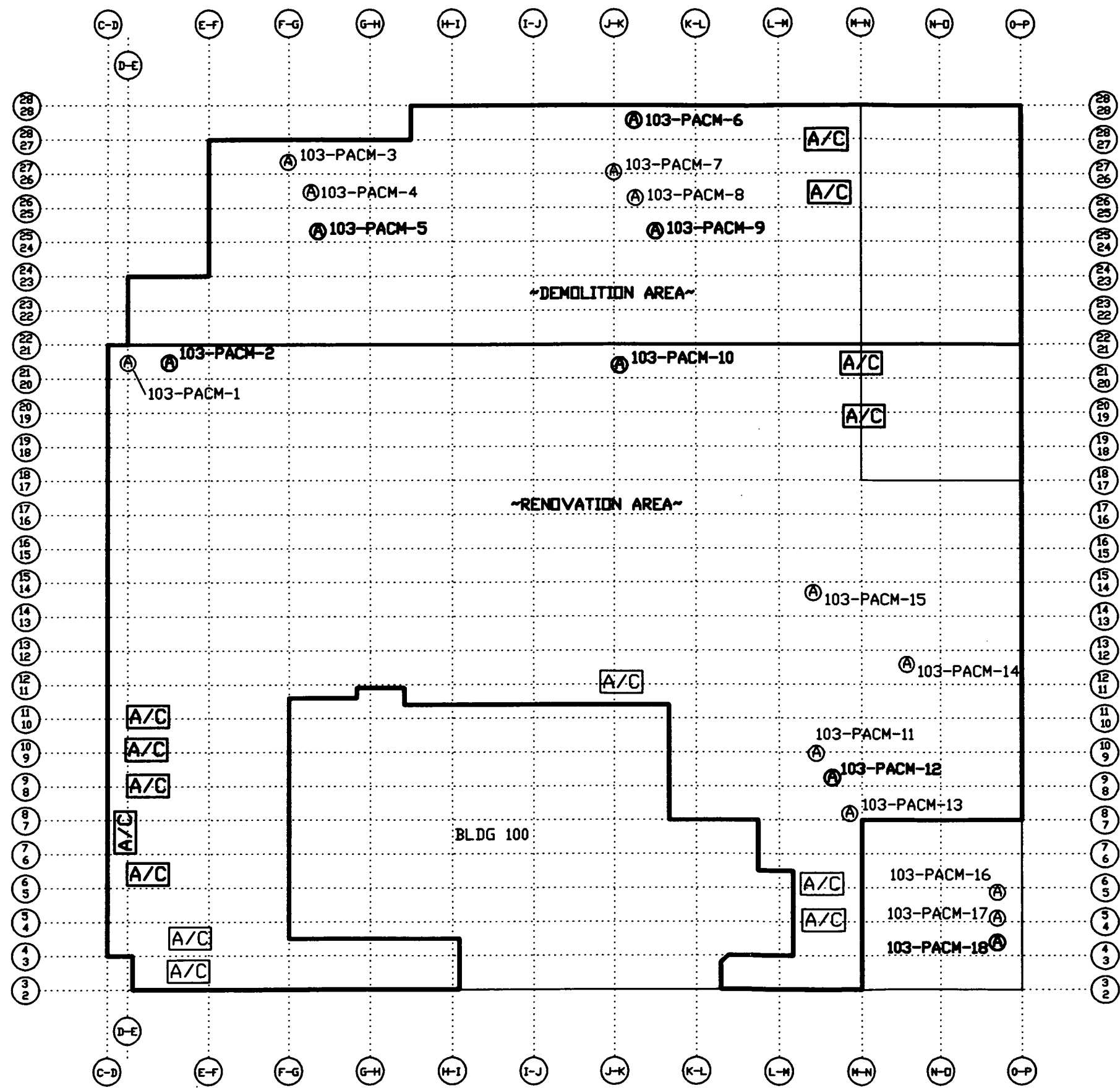


FIGURE 2

(A) SUSPECT ASBESTOS SAMPLES

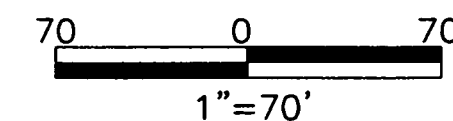
NOTE: LOCATIONS IN BOLD ARE CONSIDERED TO BE ACM

A/C AIR CONDITIONING UNIT

NOTE: LOCATIONS IN BOLD ARE CONSIDERED TO BE OUT OF USE

ROBERT BOSCH CORPORATION  
BUILDING 103  
SOUTH BEND, INDIANA

ROOF  
SAMPLE LOCATIONS



FILE NO. 6407.27737.103-ROOF  
12/2000

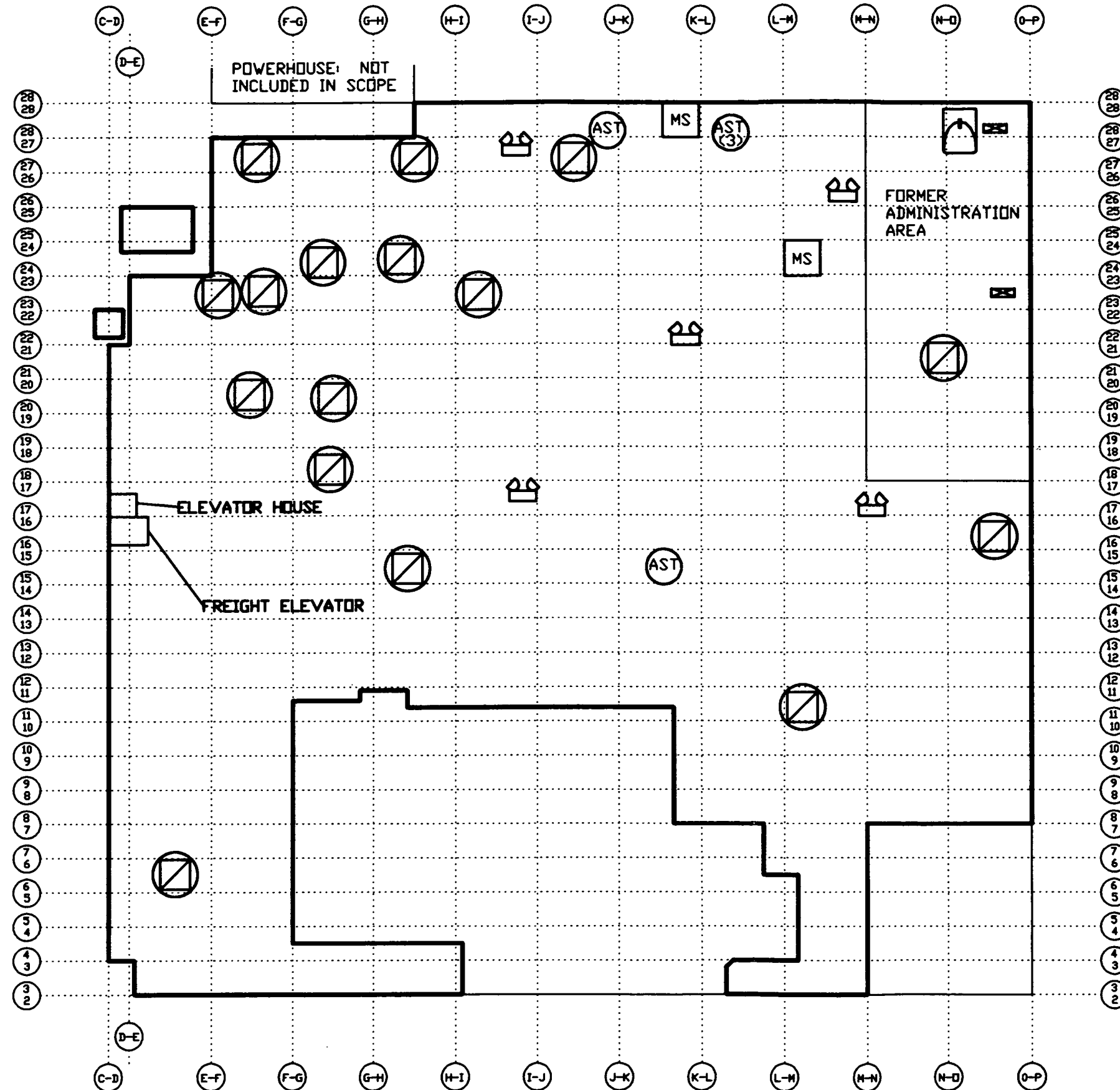








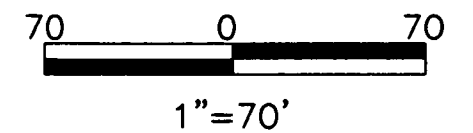
FIGURE 3

LEGEND

-  AIR HANDLING UNIT W/MOTOR
-  DRINKING FOUNTAIN
-  EMERGENCY LIGHTING
-  MERCURY SWITCH
-  EXIT SIGN
-  ABOVEGROUND STORAGE TANK (PREVIOUSLY DECOMMISSIONED)

ROBERT BOSCH CORPORATION  
BUILDING 103  
SOUTH BEND, INDIANA

BUILDING 103 ITEMS



FILE NO. 6407.27635.103-1  
12/2000

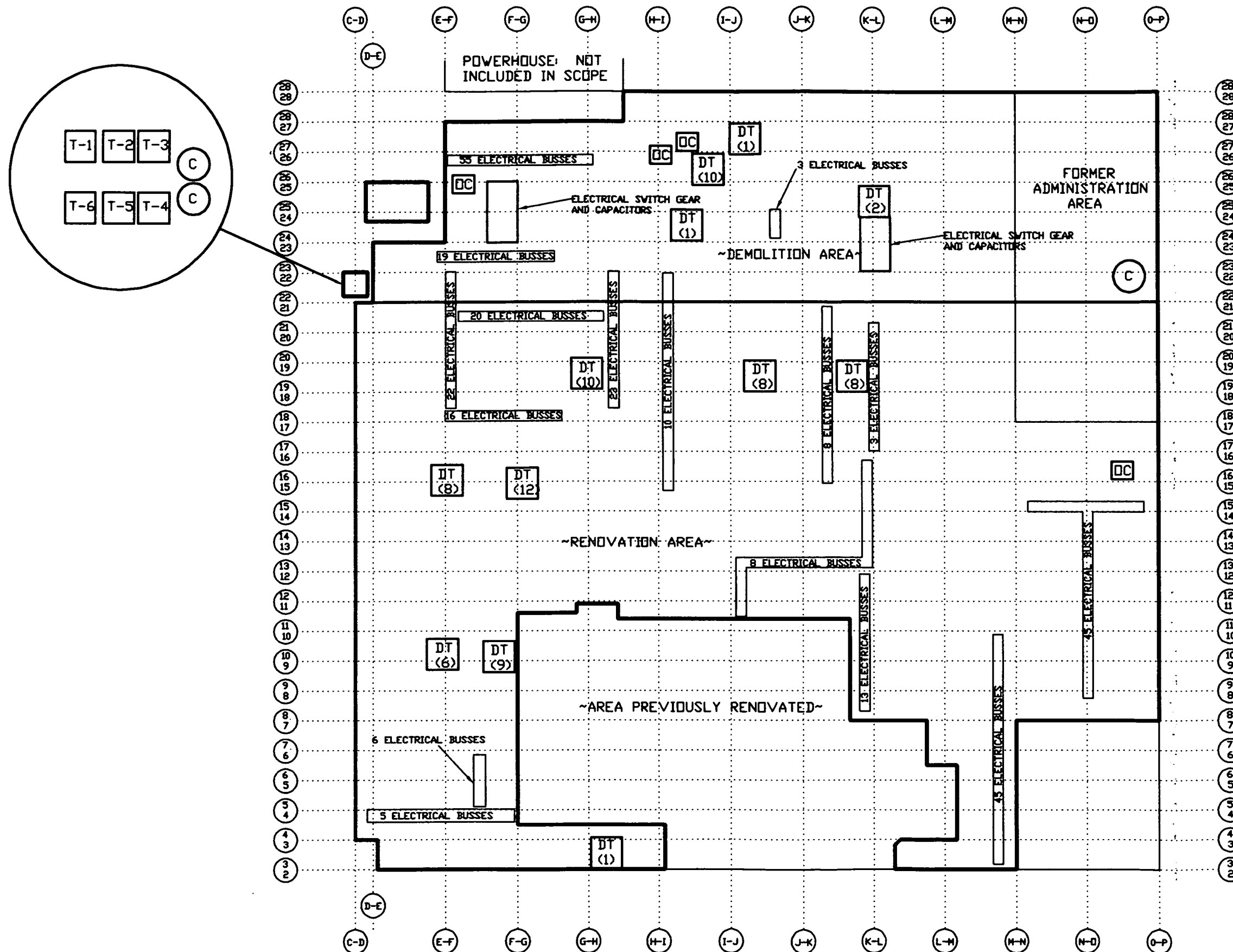
**ROBERT BOSCH CORPORATION  
BUILDING 103  
SOUTH BEND, INDIANA**

70 0 70

1"=70'



**O'BRIEN & GERE**  
ENGINEERS INC.





## Appendices

**Sampling and Analysis Plan**

# Draft Report

## Sampling & Analysis Plan

*Robert Bosch Corporation  
South Bend, Indiana*

# DRAFT

---

Scott L. Cormier, P.E.  
Senior Manager



**O'BRIEN & GERE**  
ENGINEERS, INC.

39830 Grand River Ave.  
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Novi, Michigan 48375

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## Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Project Schedule and Contacts Information .....</b>	<b>3</b>
<b>3. Sampling and analysis plan .....</b>	<b>5</b>
3.1 Sampling protocols .....	5
3.1.1 Sample numbering .....	5
3.1.2 Sample preparation and preservation .....	6
3.1.3 Decontamination of sampling equipment .....	6
3.1.4 Reporting and documentation .....	6
3.1.5 Chain-of-custody .....	6
3.1.6 Restoration of surfaces .....	7
3.2 Wipe samples .....	7
3.3 Concrete core samples .....	7
3.4 Bulk asbestos samples .....	8
3.5 Grab samples (sediment, grease, oil reservoirs) .....	8
3.6 Paint chip samples .....	8
<b>4. Evaluation of results .....</b>	<b>11</b>

**List of tables**

1. Bosch complex Sampling and Analysis Summary

**List of figures**

1. Proposed Sample Locations Building 103
2. Proposed Sample Locations Building 101
3. Proposed Sample Locations Buildings 100, 104

**List of appendices**

- A. Health and Safety Plan (HASP)

---

## 1. Introduction

This sampling and analysis plan (SAP) presents the proposed sampling locations and protocols, analytical procedures, and health and safety guidelines for the environmental assessment of Bosch complex located 401 N. Bendix Drive, South Bend, Indiana.

The overall project objective for the environmental assessment is to safely and cost-effectively deactivate and demo portions of the Bosch complex. To safely meet this objective the environmental assessment is being performed prior to deactivation and demolition.

The environmental assessment of Building 103, 104, 101 and 100 is to be completed in several phases: site visit/building inspection, sampling/analysis planning and implementation, and analytical results evaluation. The site visit/building inspection phase was completed during the week of November 1, 2000. The deactivation team reviewed files and drawings pertaining to these buildings and completed a detailed visual inspection of the above buildings. During this site visit/building inspection environmental Areas of Potential Concern (APCs) were identified.

The objective of this (SAP) is to characterize above grade environmental APCs to evaluate if decontamination or further investigation is warranted prior to demolition. The environmental APC's identified during the site visit/inspection phase were:

- presumed asbestos containing materials (PACM)
- possible lead-based paint
- floor staining
- lighting and ballasts
- possible CFC containing equipment
- oil filled equipment
- exhaust stacks
- mercury containing switches
- electrical equipment

Several APC's identified during the site visit/inspection are not anticipated to be sampled and are therefore, not included in this SAP. Those APC's are:

- lighting & ballasts
- possible CFC containing equipment
- electrical equipment
- mercury containing switches

Possible CFC containing equipment will be required to be handled properly during deactivation/demolition and will not be sampled under this program. Although the majority of transformers and capacitors were dry-type and do not require sampling, oil filled transformers are present and will be sampled to determine the potential presence of PCBs.

---

## 2. Project Schedule and Contact Information

Buildings will be sampled during the following dates and times:

- 11/7/00 On-site 11:00am-8:00pm Building 103,100
- 11/8/00 On-site 7:00am-8:00pm Building 103, 101
- 11/9/00 On-site 7:00am-4:00pm Building 103,104
- 11/10/00 On-site 7:00am-4:00pm Building 104

Time permitting on Friday November 10, 2000 a summary review meeting will be held to discuss project progress.

### Field Team contact numbers (mobile)

Bill Clifford (248) 921-8013  
Chad Krieter (248) 505-9617

### Subcontractors

ACM Environmental, Inc.  
229 S. Michigan  
South Bend, IN 46601

Fire & Environmental Consulting Laboratories, Inc. (FECL)  
1451 East Lansing Drive, Suite 222  
East Lansing, MI 48823



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### 3. Sampling and analysis plan

Sampling and analysis will be performed to fill in data gaps remaining after completion of the site history review, file review and building inspection or to confirm the potential presence of materials, such as; PCBs, lead-based paint, asbestos, semi-volatile compounds and metals. The collection of samples will comply with O'Brien & Gere's Health and Safety Plan (HASP) attached as Appendix A.

The proposed above grade sampling and analyses efforts are detailed per sample type, such as: wipe samples (non-porous surfaces), paint chip samples, bulk asbestos samples, and grab samples (sediment, grease, oil reservoirs). General sampling protocols are also outlined in Section 3.1 and are intended to be followed during the sampling activities. Specific locations of materials and items to be sampled are shown on Figures 1-3. Table 1 provides a summary of the proposed sampling locations and analytical parameters and numbers.

#### 3.1 Sampling protocols

This section documents the sampling protocols that will be used while collecting samples in the Bosch complex. The protocols described below outline procedures for sample numbering, sample preparation and preservation, sampling equipment decontamination, documentation and chain-of-custody preparation. Appropriate Quality Assurance/Quality Control (QA/QC) samples (field blanks and duplicates) will be collected and will accompany the samples to the laboratory. Approximately 5% of the number of samples collected per matrix (sample type) will be QA/QC samples.

##### 3.1.1 Sample numbering

A sample numbering system will be used to identify each sample collected during the sampling program. This numbering system will uniquely identify each sample and will provide a tracking procedure to allow retrieval of information regarding particular samples. The sample team leader will maintain a listing of the sample identification numbers

### **3.1.2 Sample preparation and preservation**

Immediately after collection, samples will be transferred to properly labeled sample containers and properly preserved, if appropriate (preservation materials provided by the laboratory). Samples requiring refrigeration for preservation will be immediately transferred to coolers packed with ice or ice packs. Samples will be shipped or transported within 48 hours of collection and will arrive at the laboratory no later than 72 hours after sample collection. Proper chain-of-custody documentation will be maintained and samples will be extracted and analyzed by the laboratory within the holding times specified by the USEPA.

### **3.1.3 Decontamination of sampling equipment**

Reusable sampling equipment will be decontaminated as follows: equipment will be scrubbed with a solution of potable water and Alconox, or equivalent laboratory grade detergent, then rinsed with copious quantities of potable water and a distilled/deionized water rinse. Equipment used for sampling materials potentially containing polychlorinated biphenyls (PCBs) will then be rinsed with acetone. This equipment will then be rinsed with a final distilled/deionized water rinse and air-dried on a clean surface. Waste materials generated during decontamination activities will be containerized and will likely be able to be co-mingled with current waste streams from the facility following receipt of analytical results. Disposable sampling equipment will either be containerized and transported to the laboratory within the sample container, or properly disposed on-site.

### **3.1.4 Reporting and documentation**

Field documentation is an essential component of the sampling program. The field crew will have an assigned team leader responsible for written documentation. Field logbooks will serve as permanent documentation for field sampling efforts. In addition, the team leader will summarize the events and conditions at the site in a field logbook. The logbook will contain information such as names of workers and other staff members, weather conditions, samples collected, measurements, and significant events, observations, or other pertinent data. Field logbooks will be kept neat and organized. Entries will be legible, factual, detailed and objective.

### **3.1.5 Chain-of-custody**

The collection and handling of samples will be documented to demonstrate that appropriate sampling protocols were followed. A chain-of-custody form will be initiated when the sample is collected. As possession of the sample is relinquished by one individual and transferred to another, the chain-of-custody document will be revised to

reflect such transfers. The chain-of-custody form will contain the following information:

- client information
- required analysis (including analytical method)
- matrix type (e.g., wood or concrete)
- sampling technique (e.g., wipe or composite)
- location of sample collection
- date, time, and sampler's name (s)

#### 3.1.6 Restoration of surfaces

The sampling activities may require destructive methods to obtain access to materials or to collect representative samples for analysis. Although care will be taken to minimize damage, it is likely that some damage will occur.

### 3.2 Wipe samples

Wipe samples for PCB analyses will be collected from non-porous surfaces. In addition, wipe sampling will be performed on surfaces where a residue is suspected but there is insufficient material to collect a grab sample.

Wipe samples will be collected utilizing hexane-soaked gauze pads for PCB sampling, distilled water-soaked gauze pads for metal sampling and either methanol or alcohol (painted surface) or methylene chloride (unpainted surface) for SVOC sampling. Samples will be collected using a 100-centimeter square disposable template. Following sample collection, the gauze pad will be placed into a laboratory-provided jar. Samples will then be submitted to a qualified laboratory for laboratory analysis of PCBs by EPA method 8082, metals by EPA method 6000/7000 series and semi-volatile organic compounds (SVOCs) by method 8270.

### 3.3 Concrete core samples

Core samples of stained concrete for PCB analysis will be collected due to the porous nature of masonry/concrete. Sampling of masonry and concrete building material (e.g., floors, walls and columns) will be conducted using a rotary hammer drill equipped with a 1-inch diameter pulverizing bit to core into the material. A collection template will be used to collect the resulting pulverized material sample. Depth of the

sample will be between 0 to 3 inches below the surface in accordance with current USEPA Mega-Rule characterization policy.

### 3.4 Bulk asbestos samples

Several PACMs such as; window caulking, roof material and flashing, fire doors, floor tile, wallboard and ceiling materials were identified during the site inspection. These materials must be sampled and analyzed for asbestos content such that appropriate removal is performed by trained personnel prior to deactivation and demolition.

PACM sample locations will be wetted down to reduce the possibility of generating fibers during collection. Friable samples will be collected using a cutter sleeve with a "T" handle and placed in individual plastic vials. The vials will be labeled with a unique identification number for each sample location. Non-friable samples will be collected in individual "Ziploc" type bags. PACM samples will be analyzed by standard polarized light microscopy (PLM) method (USEPA Method 600/R-93-116)

A certified Indiana asbestos building inspector will collect these samples. During analysis if one sample from a group of homogenous material be considered positive for asbestos (over 1%), the remaining samples in that group will not be analyzed and the material will be considered ACM.

### 3.5 Grab samples (sediment, grease, oil reservoirs)

Grab samples of residual sediment, grease, and oil reservoirs will be collected in various locations throughout the Bosch complex to evaluate if PCBs are present (SVOCs and metals will also be included in a residual sample from an exhaust stack). Residual material will be retrieved using a disposable scraper to gather the material. The material will then be placed in a laboratory-supplied jar. Oil reservoirs associated with equipment within the building will also be sampled. The sampled oil will be retrieved by accessing either fill ports or drain plugs. Once the reservoir is accessed the contents will be placed into a laboratory-supplied jar, labeled, placed in a cooler, and transported to the laboratory.

### 3.6 Paint chip samples

Paint chip samples will be collected throughout the complex to determine if the paint material is lead-based. There are several USEPA and HUD

protocols and guidelines for sampling and analyzing paint for lead content. Based on the small size of the project area, it will be more cost effective to collect paint chip samples for laboratory analysis than to complete on-site X-ray fluorescence detection with confirmatory analysis. Paint chips on the floors, walls, windowsills and slats and ceiling will be collected and analyzed for total lead by EPA method 6020. The paint chip sample will be a full-depth sample to represent layers present in that designated sample location. Based on the site visit/inspection it is estimated that several different types of paint exist. Therefore, one paint chip sample will be collected from each homogeneous material.

Under current federal regulations, lead-containing paint does not require removal prior to building demolition. However, if sampling indicates the presence of lead-containing paint, there are two regulatory requirements that must be addressed during demolition.

The first issue involves OSHA regulation 29 CFR 1926.62 that requires an employer to protect their personnel from exposure to lead during construction or demolition. This information needs to be conveyed to all parties who may be involved in disturbance of lead-containing paints during the demolition process.

The second issue related to disposal of building components potentially containing lead-based paint involves recycling, reusing, or landfilling. If Bosch allows lead-based paint containing debris to be recycled or reused, the recipients of the waste should be notified of the presence of lead-based paint. If Bosch requires lead based paint containing debris to be landfilled, a toxicity characteristic leaching procedure test (TCLP) should be performed to verify the allowable level of leachable lead (currently 5 parts per million of lead) will not be exceeded. This testing is most often performed by the demolition contractor prior to disposal and will be included as a requirement in the bid documents.

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#### 4. Evaluation of results

Following receipt of analytical results for each of the sample materials, a summary table will be prepared to outline detected concentrations for comparison with the respective regulatory action level. Based on this comparison the APCs will either have no environmental issues or will be considered a potential concern that will need to be addressed prior to or during the deactivation and demolition process. The summary analytical table will be included in a sampling report that will outline actual sample locations, analytical results, evaluation of the data and recommendations for further investigation (if warranted) or other additional activities prior to demolition.

# Draft Report

## Health & Safety Plan

*Robert Bosch Corporation  
South Bend, Indiana*

# DRAFT

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Scott L. Cormier, P.E.  
Senior Manager



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## Contents

<b>1. Introduction .....</b>	<b>1</b>
1.1. Implementation of the HASP .....	1
1.2. Project organization .....	2
1.2.1. Project Officer.....	2
1.2.2. Project Manager.....	2
1.2.3. O'Brien & Gere Safety and Health Manager.....	2
1.2.4. Site Safety and Health Coordinator.....	2
1.2.5. Field Leader.....	3
<b>2. Hazard analysis.....</b>	<b>5</b>
2.1. Concrete core samples.....	5
2.1.1. Potential health hazards and hazardous constituents.....	5
2.1.2. Hazard and hazardous constituent control.....	5
2.2. Bulk samples (potential asbestos and lead-containing materials).....	6
2.2.1. Asbestos sampling.....	6
2.2.2. Lead-based paint.....	6
2.2.3. Potential health hazards and hazardous constituents.....	6
2.2.4. Hazard and hazardous constituent control.....	6
2.3. Grab or grime samples (dust, sediment, grease, oil reservoirs, residual material).....	7
2.3.1. Oil reservoirs .....	7
2.3.2. Metal, Semi-volatile organic compounds (SVOCs).....	7
2.3.3. Potential health hazards and hazardous constituents.....	7
2.3.4. Hazard and hazardous constituent control.....	7
<b>3. Personnel training.....</b>	<b>9</b>
3.1. Site workers .....	9
3.2. Management and leaders .....	9
3.3. Emergency response personnel.....	9
3.4. Site-specific training .....	10
3.5. Training certification.....	10
<b>4. Personnel protection .....</b>	<b>11</b>
4.1. Protective equipment description.....	11
4.1.1. Level C.....	11
4.1.2. Modified level C protection.....	12
4.1.3. Modified level D.....	13
4.1.4. Level D.....	13

4.2. Protective equipment selections.....	14
4.3. Protective equipment failure.....	14
<b>5. Medical monitoring.....</b>	<b>15</b>
5.1. Medical surveillance program .....	15
5.2. Respirator certification .....	15
<b>6. Site control .....</b>	<b>17</b>
6.1. Site security .....	17
6.2. Site communications .....	17
6.3. Confined space entry.....	17
<b>7. Decontamination.....</b>	<b>19</b>
7.1. Personnel decontamination procedures .....	19
7.2. Sampling equipment decontamination procedures .....	19
7.3. Decontamination supplies .....	19
7.4. Collection and disposition of impacted materials and refuse .....	20
<b>8. Emergency response .....</b>	<b>21</b>
8.1. Notification of site emergencies .....	21
8.2. Responsibilities .....	22
8.3. Accidents and injuries .....	23
8.4. Safe refuge.....	23
8.5. Fire fighting procedures .....	23
8.6. Emergency equipment.....	23
8.7. Emergency site communications .....	24
8.8. Security control.....	24
<b>9. Special precautions and procedures .....</b>	<b>25</b>
9.1. Heat stress.....	25
9.2. Heavy machinery/equipment .....	25
9.3. Additional safety practices .....	26
9.4. Daily log contents .....	27
<b>References.....</b>	<b>29</b>

**List of tables**

1-1- Project Staffing .....3  
4-1- Protective Equipment Levels ..... 14  
8-1- Emergency Response Telephone Numbers.....21

**List of figures**

9-1- Hospital Route (to be included)

**List of appendices**

A. Bosch Contractor Safety Declaration

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## 1. Introduction

This Health and Safety Plan (HASP) has been developed to provide both general procedures and specific requirements to be followed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) personnel while performing on site activities at the Bosch Corporation, South Bend, Indiana complex. In addition, O'Brien & Gere will comply with "Bosch Contractor Safety Declaration" attached as Appendix A. The area of the work is shown on Figure 1 of the Sampling and Analysis Plan (SAP). This HASP describes the responsibilities, training requirements, protective equipment, and standard operating procedures to be used by O'Brien & Gere personnel to address potential health and safety hazards that may develop while performing their on-site activities. This HASP specifies procedures and equipment to be used by O'Brien & Gere personnel during work activities and emergency response to minimize exposures of O'Brien & Gere personnel to hazardous materials.

### 1.1. Implementation of the HASP

The requirements and guidelines presented in this HASP are based on a review of available information and an evaluation of potential on-site hazards. This HASP incorporates by reference the applicable Occupational Safety and Health Administration (OSHA) requirements in 29 CFR Part 1910 and 29 CFR Part 1926. O'Brien & Gere personnel are required to read this HASP before beginning work on-site. This HASP will be available for inspection and review by O'Brien & Gere employees and contractor representatives while work activities are underway. When conducting the sampling activities listed in the Field Sampling Plan, O'Brien & Gere personnel will comply with this HASP. On-site O'Brien & Gere personnel will notify the O'Brien & Gere Site Safety and Health Coordinator (SSHC) of matters of health and safety. The SSHC is responsible to the Project Manager for monitoring activities, monitoring compliance with the provisions of this HASP, and for modifying this HASP to the extent necessary if site conditions change. This HASP is specifically intended for the conduct of activities in the scope of work defined in the Sampling and Analysis plan and in the areas of the Bosch site, specified for these work activities. Although this HASP can be made available to interested persons for informational purposes, O'Brien & Gere does not assume responsibility for the interpretations or activities of any persons or entities other than employees of O'Brien & Gere.

## **1.2. Project organization**

Personnel involved in the activities at the Bosch complex, South Bend, IN implicitly have a part in implementing the HASP. Among them, the Project Officer, the Project Manager, the O'Brien & Gere Safety and Health manager, the SSHC, and the Field Leader have specifically designated responsibilities. Their names and telephone numbers are listed in Table 1-1.

Key project personnel and their responsibilities with regard to the Bosch Field Sampling Plan are discussed below.

### **1.2.1. Project Officer**

Mr. Scott Cormier, PE, is the Project Officer. The Project Officer is responsible for the overall administration and technical execution of the project. The Project Officer is further responsible for the acquisition and delegation of resources necessary for project completion and HASP implementation.

### **1.2.2. Project Manager**

Mr. William Clifford, PE, is the Project Manager. The Project Manager reports to the Project Officer and is directly responsible for the technical progress and financial control of the project.

### **1.2.3. O'Brien & Gere Safety and Health Manager**

Mr. Saunders E. Wilson, CIH, CSP, is the O'Brien & Gere Safety and Health manager. Mr. Wilson will be responsible for implementation of this HASP. Mr. Wilson must approve procedural changes and modifications to this HASP.

### **1.2.4. Site Safety and Health Coordinator**

Mr. William Clifford, or a designee, is the O'Brien & Gere Site Safety and Health Coordinator (SSHC). The O'Brien & Gere Safety and Health Manager, establishes operating standards, and coordinates overall project safety and health activities for the site. The SSHC reviews project plans and revisions to plans to verify that safety and health procedures are maintained during the on-site work. The SSHC audits the effectiveness of the HASP on a continuing basis and suggests changes, if necessary.

Specifically, the SSHC is responsible for the following actions:

- Providing a complete copy of the HASP at the site before the start of activities
- Familiarizing workers with the HASP
- Conducting on-site health and safety training and briefing sessions
- Documenting the availability, use, and maintenance of personal protective and other safety or health equipment
- Maintaining safety awareness among O'Brien & Gere employees on-site and communicating safety and health matters to them
- Reviewing field activities for performance in a manner consistent with O'Brien & Gere's policy and this HASP
- Monitoring health and safety conditions during field activities
- Coordinating with emergency response personnel and medical support facilities
- Notifying the Project Manager of the need to initiate corrective actions in the event of an emergency, an accident, or identification of a potentially unsafe condition
- Notifying the Project Manager of an emergency, an accident, the presence of a potentially unsafe condition, a health or safety problem encountered, or an exception to this HASP
- Recommending improvements in safety and health measures to the Project Manager
- Conducting safety and health performance and system audits.

The SSHC has the authority to recommend that the Project Manager take the following actions:

- Suspend field activities or otherwise limit exposures if the health or safety of any O'Brien & Gere employee appears to be endangered
- Notify O'Brien & Gere personnel to alter work practices that the SSHC deems to not protect them
- Suspend an O'Brien & Gere employee from field activities for violating the requirements of this HASP.

#### **1.2.5. Field Leader**

Mr. Chad Krieter, or a designee, will act as the Field Leader. The Field Leader will be responsible for overall site coordination including field sampling collection and chain-of-custody. The Field Leader will report directly to the Project Manager.

**Table 1-1 - Project Staffing**

<b><i>Title and Name</i></b>	<b><i>Location</i></b>	<b><i>Telephone</i></b>
Project Officer – Scott Cormier	Novi, MI	248-426-8970
Project Manager – William Clifford	Novi, MI	248-426-8970
Safety and Health Manager – Saunders Wilson	Syracuse, NY	315-437-6100
Site Safety and Health Coordinator – William Clifford	Novi, MI	248-426-8970
Field Leader – Chad Krieter	Novi, MI	248-426-8970

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Source: O'Brien & Gere Engineers, Inc.

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## **2. Hazard analysis**

Based on the results of the site visit building inspection O'Brien & Gere has prepared a Sampling and Analysis plan. The Sampling and Analysis portion of this project will include sampling and analysis for the following activities: concrete core sampling, bulk sampling (potential asbestos and lead-containing materials) and grab or grime samples (dust, sediment, grease, oil reservoirs, residual materials).

### **2.1. Concrete core samples**

The sampling for PCBs on porous surfaces (floors and walls) will be completed by using a rotary hammer drill for collection of bulk concrete samples between 0 to 3 inches below the surface in accordance with current USEPA Mega-Rule characterization policy.

#### **2.1.1. Potential health hazards and hazardous constituents**

Hazards generally associated with drilling operations include noise levels exceeding the OSHA PEL of 90 dBA that are both a hazard and a hindrance to communication. There may be underground or in wall utilities in the area where drilling is being performed.

#### **2.1.2. Hazard and hazardous constituent control**

Personnel must wear hard hats and ear muffs and/or earplugs when working near operating equipment.

During drilling, if wet methods are not used, air in the breathing zone of the worker will be sampled for respirable dust using a real time aerosol monitor (RAM) at approximately five-minute intervals. Air will be sampled for volatile organic vapors using a PID at approximately five-minute intervals.

To minimize exposure to volatiles during sample collection, a PID will be placed near the sample to monitor levels of volatile organic vapors. A CGM will be used to determine if there are elevated concentrations of explosive gases or vapors.



## **2.2. Bulk samples (potential asbestos and lead-containing materials)**

### **2.2.1. Asbestos sampling**

Thermal insulation was labeled as an asbestos containing material (ACM). Based on our experience at other similar sites we suspect that building materials, such as; window caulk, roof flashing, roof materials, fire doors, plaster etc. are PACMs. These materials will need to be evaluated prior to demolition. A certified asbestos building inspector will collect these bulk samples.

### **2.2.2. Lead-based paint**

Due to the age of the building and several layers of paint identified during the walkthrough, paint on the floors, walls, windowsills and slats, and ceilings will be sampled. The number and location of samples to be collected will be in accordance with Federal guidelines. We have assumed that up to 100 paint chip samples will be collected from the building structures.

### **2.2.3. Potential health hazards and hazardous constituents**

Hazards associated with collecting lead-based paint samples and asbestos samples are generally similar. Sample hazards include inhalation of asbestos fibers and lead, and contact with asbestos fibers and lead.

### **2.2.4. Hazard and hazardous constituent control**

Personnel must wear hard hats during sampling. Initially, Modified Level C PPE will be worn. Chemical-resistant gloves will be worn during sampling. Cuttings and decontamination wastes will be collected, drummed, and disposed in accordance with the Field Sampling Plan.

### **2.3. Grab or grime samples (dust, sediment, grease, oil reservoirs, residual material)**

#### **2.3.1. Oil reservoirs**

Oil reservoirs will be accessed by either fill ports or drain plugs to obtain representative samples from each reservoir (8 samples total). These samples will be evaluated for the potential presence of PCBs.

#### **2.3.2. Metal, Semi-volatile organic compounds (SVOCs)**

Several stained areas within the complex were noticed during the walkthrough and will be sampled to evaluate the presence of metals and SVOCs.

#### **2.3.3. Potential health hazards and hazardous constituents**

Hazards generally associated with collecting grab samples include contact with solvents, inhalation of solvent vapors and contact with dirt, surface chemicals and greases on the surface being wiped. The possibility exists for splashing of exposed subsurface materials onto the workers and release of dust and volatile materials onto workers bodies and into the workers breathing zones.

There is the potential for slipping on damp surfaces or falling from elevated surfaces.

#### **2.3.4. Hazard and hazardous constituent control**

Personnel must wear hard hats during sampling. Initially, Modified Level C PPE will be worn. Chemical-resistant gloves will be worn during sampling. Cuttings and decontamination wastes will be collected, drummed, and disposed in accordance with the Field Sampling Plan.

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### **3. Personnel training**

#### **3.1. Site workers**

O'Brien & Gere employees performing the activities listed in the SAP must have completed a training course of at least 40 hours meeting the requirements of 29 CFR 1910.120(e) for safety and health at hazardous waste operations. If the initial course was completed more than 12 months before the date of site work, completion of an approved 8-hr refresher course on health and safety at hazardous waste operations during the last twelve months is required.

O'Brien & Gere employees must comply with the O'Brien & Gere Quality Assurance Manual. The respiratory protection program is specified in Section 004.2 of Vol. 3. The Hazard Communication Program is specified in Section 003 of Vol. 3. The Audit Program is specified in Section 019 of Vol. 3.

#### **3.2. Management and leaders**

In addition to the requirements described in section 3.1 for O'Brien & Gere site workers, O'Brien & Gere management personnel must have completed an off-site training course of at least 8 hours meeting the requirements of 29 CFR 1910.120(e) on supervisor responsibilities for safety and health at hazardous waste operations.

#### **3.3. Emergency response personnel**

O'Brien & Gere employees who respond as "Good Samaritans" to emergency situations involving health and safety hazards must be trained in how to respond to such emergencies in accordance with the provisions of 29 CFR 1910.120(l). Skills such as cardiopulmonary resuscitation (CPR), mouth-to-mouth rescue breathing, avoidance of blood-borne pathogens, and basic first aid skills may be necessary.

### 3.4. Site-specific training

Site-specific training will be provided to each O'Brien & Gere employee and reviewed before assignment. O'Brien & Gere personnel will be briefed daily by the Field Leader or by the SSHC as to the potential hazards that may be encountered during that day. Topics will include:

- Availability of this HASP
- General site hazards and specific hazards in the work areas
- Selection, use, testing, and care of the body, eye, hand, foot, and respiratory protective equipment being worn and the limitations of each
- Decontamination procedures for O'Brien & Gere personnel, their personal protective equipment, and other equipment used on-site
- Emergency response procedures and requirements
- Emergency notification procedures and evacuation routes to be followed
- Procedures for obtaining emergency assistance and medical attention.

### 3.5. Training certification

A record of employee training completion will be maintained by the SSHC for each O'Brien & Gere employee who is trained. This record will include the dates of the completion of worker training, supervisor training, refresher training, emergency response training, and site-specific training for on-site O'Brien & Gere employees.

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## **4. Personnel protection**

The levels of PPE to be used during sampling activities at the Bosch site are modified level C & D. PPE may be upgraded based on air monitoring results or at the discretion of the Project Manager and based on the SSHC's recommendations. A downgrade of PPE must be approved by the SSHC.

If the SSHC verifies that field measurements or observations indicate that a potential exposure is greater than the protection afforded by the equipment or procedures specified in this or other sections of this HASP, the work will be stopped, and O'Brien & Gere personnel will be removed from the site until the exposure has been reduced or the level of protection has been increased.

O'Brien & Gere respirator users have been trained and medically approved to use respiratory protection. Respirators issued are approved for protection against dust and organic vapors by NIOSH. Respirators are issued for the exclusive use of one worker and will be cleaned and disinfected after each use by the worker. Respirator users must check the fit of the respirator before each day's use to see that it seals properly. The respirator must seal against the face so that the wearer receives air only through the air purifying cartridges attached to the respirator. No facial hair that interferes with the effectiveness of a respirator will be permitted on personnel required to wear respiratory PPE. Cartridges and filters for air-purifying respirators in use will be changed daily at a minimum. The user will inspect the integrity of air-purifying respirators daily.

### **4.1. Protective equipment description**

The level of PPE is categorized as Level A, B, C, or D, based upon the degree of protection required. The following is a brief summary of the two levels that may be used on this site.

#### **4.1.1. Level C**

Level C is worn when the concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met.

The following constitute Level C equipment:

- NIOSH-approved, full-face air purifying respirator with P100 particulate filters
- Particulate-resistant clothing with hood [chemical-splash suit, disposable chemical-resistant overalls (Tyvek® or equivalent )]
- Coveralls (optional)
- Gloves, outer, chemical-resistant (neoprene)
- Gloves, inner, chemical-resistant (neoprene or latex)
- Boots, outer, leather, with steel toe and shank
- Optional chemical resistant boot covers (neoprene or butyl rubber)
- Hard hat (Class B)
- Personal flotation device with rope when sampling in water greater than 24 inches deep
- Face shield and safety glasses when not wearing a full-face respirator.

Hearing protection when working in noise hazardous areas, as defined in the O'Brien & Gere Quality Assurance Manual.

#### 4.1.2. Modified level C protection

Modified Level C protection, consisting of Level C protective equipment without the use of a respirator, will be worn initially **during asbestos and lead-based paint sampling**. However, respirators will be available for immediate use in the event that an upgrade to Level C protection, as specified by the action levels in Table 4-1 required. Modified Level C protection consists of the following:

- Chemical-resistant disposable coveralls. For this level of protection polyethylene-coated, Tyvek® suits will be required. Suits will be one piece with elastic wristbands. Hoods will be required at the discretion of the Health & Safety Coordinator
- Outer nitrile gloves (taped to the suit) and inner nitrile gloves
- Leather, steel-toe boots with rubber overboots (taped to suit)
- Eye protection (goggles, face shield or safety glasses)
- Hard hat
- Disposable outer boots
- Coveralls
- Escape mask.
- Hearing protection when working in noise hazardous areas, as defined in the O'Brien & Gere Quality Assurance Manual.

#### 4.1.3. Modified level D

Modified Level D is worn when the concentration(s) and type(s) of airborne substance(s) is known and the criteria for not using air purifying respirators are met. A level of skin protection above Level D is required. Modified Level D protection will be worn initially during on-site sampling activities. The following constitute Modified Level D equipment:

- Chemical-resistant clothing [chemical-splash suit, disposable chemical-resistant overalls (polyethylene coated Tyvek® or equivalent )]
- Coveralls (optional)
- Gloves, outer, chemical-resistant (neoprene)
- Gloves, inner, chemical-resistant (neoprene or latex)
- Boots, outer, leather, with steel toe and shank
- Optional chemical resistant boot covers (neoprene or butyl rubber)
- Hard hat (Class B)
- Personal flotation device with rope when sampling in water greater than 24 inches deep
- Face shield and safety glasses
- Hearing protection when working in noise hazardous areas, as defined in the O'Brien & Gere Quality Assurance Manual.

#### 4.1.4. Level D

A work uniform affording minimal protection, used for nuisance contamination only. Level D protection will initially be worn during on-site sampling activities. The following constitute Level D equipment:

- Overalls (cloth) or long sleeve shirts and long pants.
- Apron (plastic) for splash protection as necessary
- Gloves (neoprene or leather)
- Boots or shoes, leather, steel toe and shank
- Optional chemical resistant boot covers (neoprene or butyl rubber)
- Safety glasses or chemical splash goggles
- Hard hat (Class B)
- Personal flotation device with rope when sampling in water greater than 24 inches deep
- Escape mask (optional)
- Face shield when not wearing other eye protection
- Hearing protection when working in noise hazardous areas, as defined in the O'Brien & Gere Quality Assurance Manual.



#### 4.2. Protective equipment selections

Initial levels of PPE will be as shown in the following figure:

Table 4-1 - *Protective Equipment Levels*

<i>Activity</i>	<i>Level B</i>	<i>Level C</i>	<i>Modified Level C</i>	<i>Level D</i>
Collecting wipe samples				skin
Chip or bulk samples				skin inhalation
Concrete core samples		skin, noise inhalation		
Grab or grime samples			skin, inhalation	
Bulk asbestos and lead- based paint samples		inhalation		

Source: O'Brien & Gere Engineers, Inc.

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#### 4.3. Protective equipment failure

If an individual experiences a failure or other alteration of PPE that may affect its protective ability, that person is to leave the work area immediately. The SSHC must be notified and, after reviewing the situation, is to evaluate the effect of the failure on the continuation of on-going operations. If the SSHC ascertains that the failure affects the safety of workers, the work site, or the surrounding environment, workers are to be evacuated until corrective actions have been taken. The SSHC will not allow re-entry until the equipment has been repaired or replaced and the cause of the failure has been identified.

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## **5. Medical monitoring**

### **5.1. Medical surveillance program**

O'Brien & Gere has implemented a medical monitoring program in accordance with 29 CFR 1910.120. The O'Brien & Gere program is designed to monitor and reduce health risks to employees potentially exposed to hazardous materials and to provide baseline medical data for each employee involved in work activities. It is also designed to evaluate the employee's ability to wear PPE such as chemical-resistant clothing and respirators.

Medical examinations are administered on a post-hire and annual basis and as warranted by symptoms of exposure or specialized activities. The post-hire examination provides baseline data. The examining physician is required to make a report to O'Brien & Gere of any medical condition that would increase the employee's risk when wearing a respirator or other PPE. O'Brien & Gere maintains site personnel medical records as required by 29 CFR 1910.120 and by 29 CFR 1910.1020, as applicable.

O'Brien & Gere employees performing the activities listed in the Construction and Maintenance Plans or this document have or will receive medical tests as regulated by 29 CFR 1910.120. Where medical requirements of 29 CFR 1910.120 overlap those of 29 CFR 1910.134 or 29 CFR 1910.1025, the more stringent standard will be enforced.

### **5.2. Respirator certification**

Employees who wear or may wear respiratory protection have been provided respirators as required by 29 CFR 1910.134. This standard requires that an individual's ability to wear respiratory protection be medically certified before performing designated duties.

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## **6. Site control**

### **6.1. Site security**

Site security will be monitored and controlled by the Field Leader and the SSHC. Their duties will include limiting access to the work area to authorized personnel, maintaining a sign-in roster, overseeing project equipment and materials, and overseeing work activities. The building will be considered the exclusion zone. Procedures will be taken to control access to each work site to prevent persons who may be unaware of site conditions from exposure to hazards. Work area control procedures may be modified as required by activity and site conditions. Site security will be established on a site- and activity-specific basis.

### **6.2. Site communications**

A cellular telephone will be used during activities to facilitate communications for emergency response and other purposes and to serve as the primary off-site communication network. Telephones located at the Bosch site will provide back up for the portable phones.

### **6.3. Confined space entry**

Entry of permit-required confined spaces are not anticipated during this project.

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## **7. Decontamination**

### **7.1. Personnel decontamination procedures**

Sampling activities will occur in widely separated locations. For this reason, equipment and personnel decontamination will be done at each sampling area, using temporary facilities. The SSHC will be responsible for supervising the proper use and decontamination of equipment and PPE.

Decontamination involves scrubbing with a soap and water solution followed by rinses with potable water. Decontamination will take place on a decontamination pad if necessary. Dirt, oil, grease, or other foreign materials that are visible will be removed from surfaces. Scrubbing with a brush may be required to remove materials that adhere to the surfaces. Splash protection garments will be washed with soap and potable water before removal. Non-disposable garments will be air-dried before storage. Waste waters from personnel decontamination will be disposed of with the waste waters from equipment decontamination. Respirators will be sanitized as well as decontaminated each day before re-use. The manufacturer's instructions will be followed to sanitize the respirator masks.

### **7.2. Sampling equipment decontamination procedures**

Sampling equipment will be decontaminated as outlined in the SAP.

### **7.3. Decontamination supplies**

The following supplies will be available on-site as needed for the decontamination of personnel and equipment:

- Plastic drop cloths
- Plastic wash tubs
- Soft bristled long-handle brushes
- Hand spray units for decontamination
- Soap, water, alcohol wipes, acetone and towels to wash hands, faces, and respirators.

#### 7.4. Collection and disposition of impacted materials and refuse

Cuttings, purge waters, and field decontamination wastes will be collected at the point of generation and stored in temporary containers. PPE, solids, and liquids will be consolidated in separate bulk containers at a central area designated by Bosch. Bosch will be responsible for disposal of these materials.

---

## 8. Emergency response

### 8.1. Notification of site emergencies

In an emergency, site personnel will signal distress either verbally or with three blasts from a horn (vehicle horn, air horn, and so forth). The SSHC or Field Leader will immediately be notified of the nature and extent of the emergency.

Table 8-1 contains emergency telephone numbers. This table will be kept with the portable telephone and updated as needed by the SSHC. The portable telephone will be used to notify off-site personnel of emergencies. The operating condition of this telephone will be verified daily before initiation of activities.

**Table 8-1 - Emergency Response Telephone Numbers**

<b>Location</b>		<b>Telephone</b>
Fire Department	Emergency	911
Police Department	Emergency	911
Ambulance	Emergency	911
Poison Control Center		TBD
Hospital		TBD
Chemical Emergency Advice (Client is O'Brien & Gere Engineers)		TBD
National Spill Response Center		TBD
USEPA		TBD

---

Source: O'Brien & Gere Engineers, Inc.

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Directions and a map showing the location and the route to the hospital will be obtained from Security upon arrival at the site.



If requested, a copy of this HASP will be provided, through the community relations staff for this project, to the hospital, and to the South Bend Fire and Police departments by the SSHC. Should someone be transported to a hospital or doctor other than at the local hospital, a copy of this HASP should accompany him/her.

## 8.2. Responsibilities

The SSHC is responsible for responding to, or coordinating the response of off-site personnel to emergencies. In the event of an emergency, the SSHC will direct notification and response, and will assist the Field Leader in arranging follow-up actions. Upon notification of an exposure incident, the SSHC will call 911 and request that hospital, fire, and police emergency response personnel as necessary recommend medical diagnosis, treatment if necessary, and provide transportation to the hospital. The Field Leader will contact local, state, and federal government agencies, as appropriate.

Before the start of on site activities at the Bosch site, the SSHC will:

1. Confirm that the following safety equipment is available: first aid supplies, air horn, and fire extinguisher.
2. Have a working knowledge of the O'Brien & Gere safety equipment.
3. Confirm that a map detailing the most direct route to the hospital is prominently posted with the emergency telephone numbers (Table 8-1).
4. Confirm that employees who will respond to emergencies have been appropriately trained.
5. Collect and maintain a file of Material Safety Data Sheets (MSDS) for materials used at the site during the remedial action activities.

Before work may resume following an emergency, used emergency equipment must be recharged, refilled, or replaced and government agencies must be notified as required.

The SSHC and the Field Leader must investigate the incident as soon as possible. The Project Manager will assess whether and to what extent exposure actually occurred, the cause of exposure, and the means to prevent similar incidents. The resulting report must be signed and dated by the SSHC and the Field Leader.

### 8.3. Accidents and injuries

In the event of an accident or injury, workers will immediately implement emergency isolation measures to assist those who have been injured or exposed and to protect others from hazards. Upon notification of an exposure incident, the SSHC will contact emergency response personnel who can provide medical diagnosis and treatment. If necessary, immediate medical care will be provided by personnel trained in first aid procedures. Other on-site medical or first aid response to an injury or illness will be provided only by personnel competent in such matters.

### 8.4. Safe refuge

Before commencing site activities, a place of refuge for O'Brien & Gere workers will be identified by the SSHC. For the purpose of this HASP, a location determined by Bosch will be selected as the place of safe refuge during a site evacuation. Following an evacuation, the SSHC will account for site personnel. If evacuation from the on-site refuge location is necessary, the project vehicles will be used to transport personnel to the place of refuge.

### 8.5. Fire fighting procedures

A fire extinguisher meeting the requirements of 29 CFR Part 1910 Subpart L, as a minimum, will be available in the building during on-site activities. This is intended to control small fires. When a fire cannot be controlled with the extinguisher, the work area will be evacuated, and the fire department will be contacted immediately. The SSHC or the Field Leader will decide when to contact the fire department.

### 8.6. Emergency equipment

The following equipment, selected based on potential site hazards, will be maintained in the support zone for safety and emergency response purposes:

- Fire extinguisher
- First aid kit
- Eye wash bottles.

#### **8.7. Emergency site communications**

Hand and verbal signals will be used at the Bosch complex for emergency communications

#### **8.8. Security control**

Work zone security and control during emergencies, accidents, and incidents will be monitored by the SSHC or the Field Leader. The duties of the SSHC or the Field Leader include limiting access to the work zones to authorized personnel and overseeing emergency response activities.

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## **9. Special precautions and procedures**

The activities listed in the SAP may expose personnel to both chemical and physical hazards. The potential hazards associated with specific site activities are discussed in Chapter 2. The potential for exposure to hazardous situations will be significantly reduced through the use of air monitoring, PPE, hazard awareness, training, and administrative and engineering controls. Other general hazards that may be present on a hazardous waste work site are discussed below.

### **9.1. Heat stress**

The timing and location of this project may be such that heat stress could pose a threat to the health and safety of site personnel. The SSHC will have a dry bulb thermometer on site and use it to implement work and rest regimens so that O'Brien & Gere personnel do not suffer adverse effects from heat. Special clothing and an appropriate diet and fluid intake will be recommended to O'Brien & Gere personnel involved in the activities specified in Chapter 2 to further reduce this hazard. In addition, ice and fluids will be provided as appropriate.

### **9.2. Heavy machinery/equipment**

O'Brien & Gere employees performing site activities may use or work near operating heavy equipment and machinery. Respiratory protection, hearing protection, and protective eyewear may be worn during portions of work activities. Since this protective equipment narrows the visual and acoustic environment of the wearer, O'Brien & Gere personnel should exercise extreme caution in the vicinity of operating equipment and machinery to avoid physical injury to themselves or others.

### 9.3. Additional safety practices

The following are important safety precautions that will be enforced during the completion of the activities listed in Chapter 2:

1. O'Brien & Gere will not conduct operations during severe weather. The Field Leader and the SSHC will decide when severe weather conditions exist or are forecast and take actions appropriate to the site and the anticipated severe weather to minimize the potential exposure of O'Brien & Gere employees.
2. O'Brien & Gere employees will refrain from unnecessary contact with plants, animals, and other biological hazards on the site. Should contact occur, the employee must report it to the Field Leader, the SSHC, and the Corporate Associate for Safety and Health, following the procedures in Vol. 3 of the O'Brien & Gere Quality Assurance Manual, Sections 001 and 017.
3. Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work area.
4. Hands and face must be thoroughly washed when leaving the building and before eating or drinking.
5. Contact with potentially impacted surfaces should be avoided whenever possible. Workers should minimize walking through puddles, mud, or other discolored surfaces; kneeling on ground; and leaning, sitting, or placing equipment on drums, containers, vehicles, or the ground.
6. Medicine and alcohol can mask the effects of exposure to certain compounds. Consumption of prescribed drugs must be at the direction of a physician.
7. O'Brien & Gere personnel and equipment in the work areas will be minimized consistent with effective site operations.
8. Unsafe or inoperable equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.
9. Activities in the work area will be conducted using the "Buddy System."

The Buddy is another worker fully dressed in the appropriate PPE who can perform the following activities:

- Provide partner with assistance
  - Observe partner for sign of chemical or heat exposure
  - Periodically check the integrity of partner's PPE
  - Notify others if emergency help is needed.
10. The HASP will be reviewed frequently for its applicability to the current and upcoming operations and activities.

#### **9.4. Daily log contents**

The SSHC will establish a system appropriate to the Bosch complex that will record, at a minimum, the following information:

1. O'Brien & Gere personnel and other personnel conducting the site activities, their arrival and departure times, and their destination at the site
2. Incidents and unusual activities that occur on the site such as, but not limited to, accidents, breaches of security, injuries, equipment failures, and weather related problems
3. Changes to the SAP and the HASP
4. Daily information such as:
  - Work accomplished and the current site status
  - Air monitoring equipment calibrations, repairs, and results.
  - Site work zones.

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## References

- American Conference of Governmental Industrial Hygienists 1999, *1999 TLVs® and BEIs,® Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices*, Cincinnati, OH
- Marlowe, Christopher CIH. Camp Dresser & McKee, May 1994. "Action Levels for Hazardous Waste Site Work."
- NIOSH, OSHA, USCG, EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, DHHS (NIOSH) Publication No. 85-115. October 1985
- O'Brien & Gere Engineers, Inc. 1999. *Field Sampling Plan, Reichold Area 1 Support Sampling Project, Reichold, Newark, NJ, Volume 2.*
- O'Brien & Gere Engineers, Inc. 1999. *Quality Assurance Project Plan, Reichold Area 1 Support Sampling Project, Reichold, Newark, NJ, Volume 2.*
- United States Environmental Protection Agency, *Health and Safety Plan (HASP) Users Guide*, Publication EPA 9285.8-01, July 1993
- United States Environmental Protection Agency, *Standard Operating Safety Guides*, Publication EPA 9285.1-03, June 1992
- 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
- 29 CFR 1910.146 Permit-Required Confined Spaces



## APPENDIX B

### Photographs

**PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN**

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00



Photo #1: Exterior of the southwest side of Building 103 (near Building 104). Photograph shows, from left to right, former sulfuric acid area (white structure), 1,000-gal ammonia AST, and entrance to Building 103

**PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN**

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00

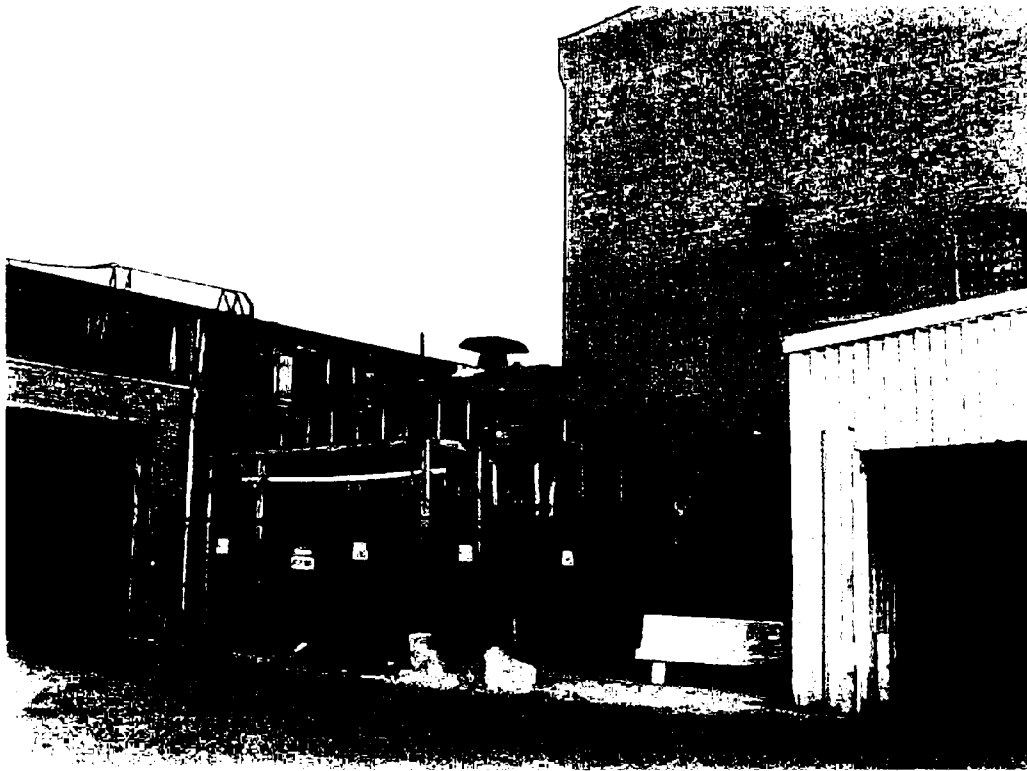


Photo #2: Transformer area outside the southwest side of Building 103 (Building 104 is the red brick building on the right). There are six transformers and related equipment located inside the area.

PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00

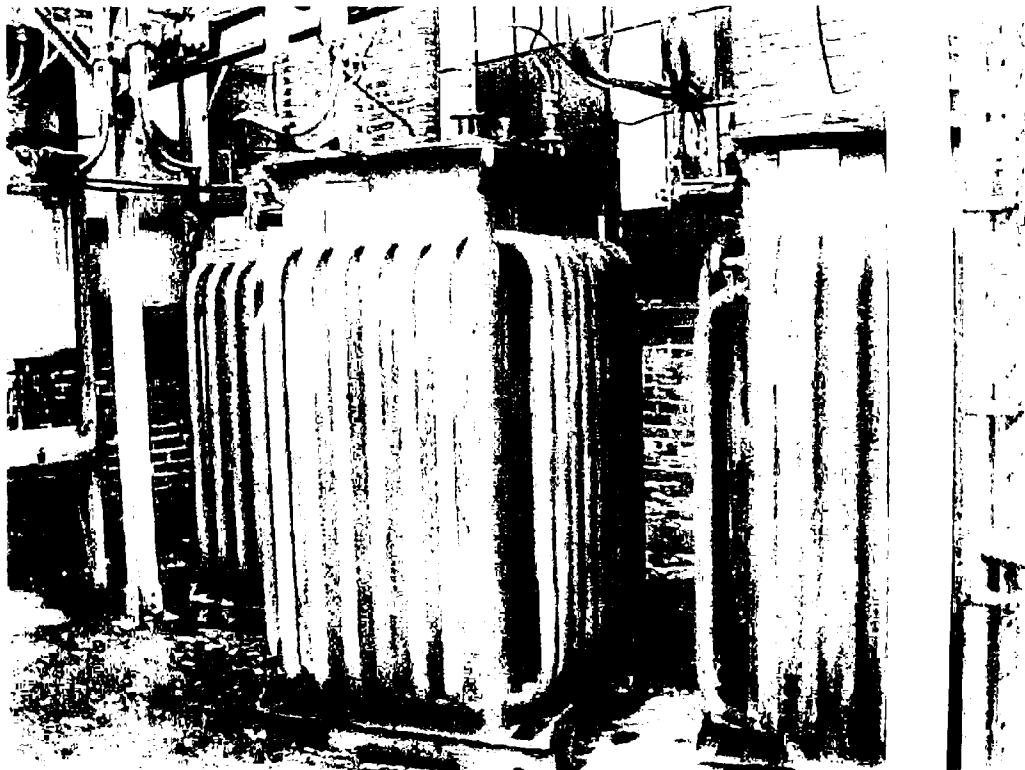


Photo #3: Close-up of three of the transformers within the fenced area outside the southwest side of Building 103 (near Building 104). Condition of transformers and concrete pad is typical of the area.

**PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN**

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00

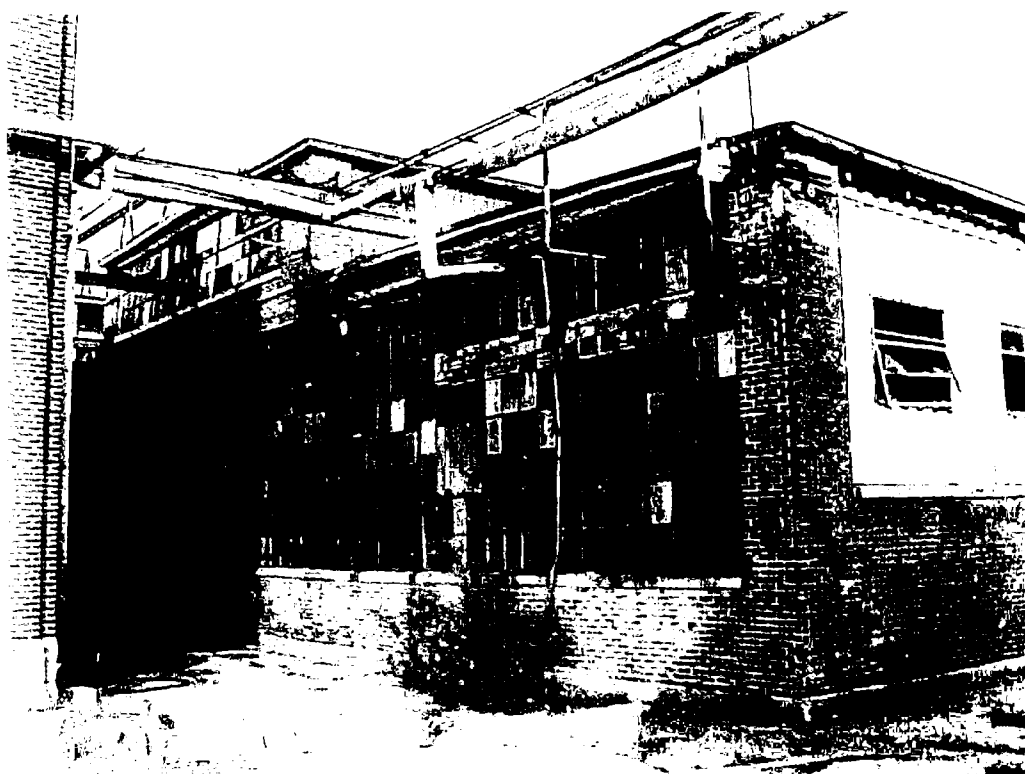


Photo #4: Southwest corner of Building 103 (near Powerhouse located on the left side of photo). Note overhead piping to be removed at the Powerhouse. Exterior ground is typical of area outside of Building 103.

**PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN**

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00



Photo #5: Looking west down Column G inside Building 103. Area in the foreground is typical of area that will remain following demolition.

**PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN**

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00



Photo #6: Picture taken looking west down column M. Area in foreground is area that will remain following demolition activities.

PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00



Photo #7: Typical condition of paint on approximately 50% of the columns inside Building 103. Paint is considered to be lead-based.



PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00

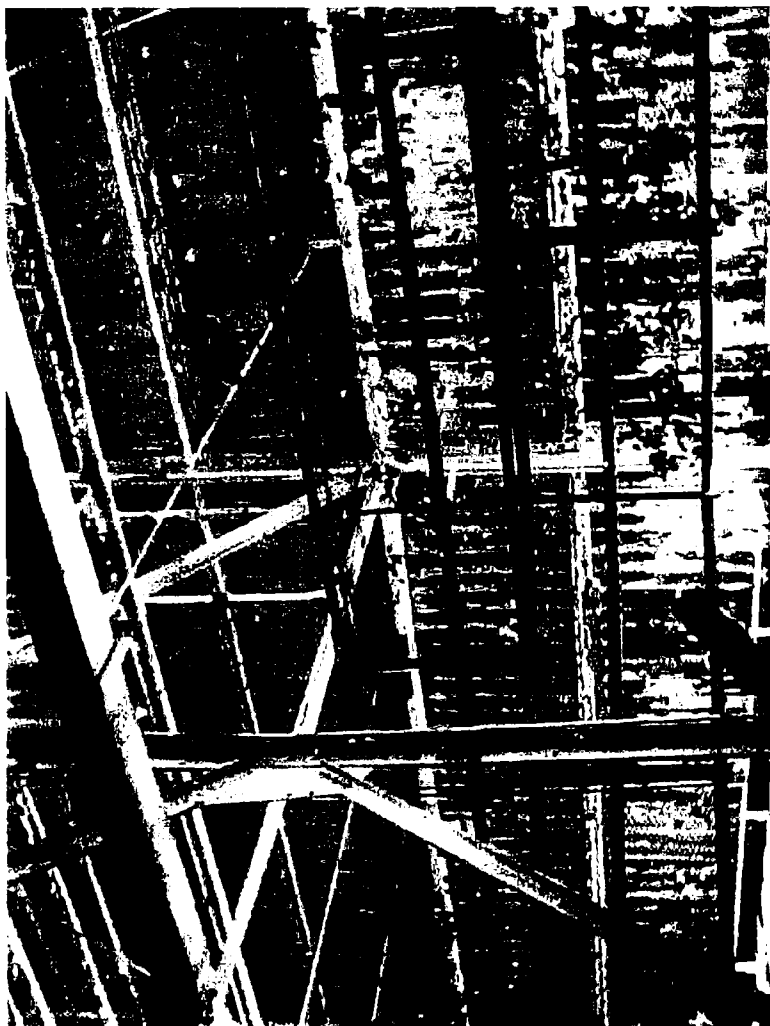


Photo #8: Typical condition of approximately 60% of the ceiling paint located inside Building 103. Ceiling paint is considered to be lead-based.

**PHOTOGRAPH LOG  
O'BRIEN & GERE ENGINEERS  
NOVI, MICHIGAN**

Client: Bosch Braking Systems Corporation	Site: Building 103
Location: South Bend, IN	Taken By: WB Clifford - 11/01/00



Photo #9: Condition of portion of Building 103 that will remain following demolition. Picture was taken from Bay H-22 facing northeast.

**Laboratory Analytical Data Sheets**

**ANALYSIS OF SUSPECT ASBESTOS CONTAINING  
BUILDING MATERIALS**

**FOR:**

**O'BRIEN & GERE ENGINEERS, INC.  
34830 GRAND RIVER AVENUE  
SUITE B-2  
NOVI, MI 48375**

**LOCATION:**

**BOSCH BRAKING SYSTEMS  
BUILDING 103**

**ACM ENVIRONMENTAL, INC.  
PROJECT#: 6005**

**DATE OF REPORT:**

**NOVEMBER 11, 2000**

**PREPARED BY:**

**ACM ENVIRONMENTAL, INC.  
229 S. MICHIGAN STREET  
SOUTH BEND, IN 46601**

**NVLAP LAB CODE: 101977**

**INTRODUCTION:**

In November 2000, ACM Environmental, Inc. received bulk samples of suspect asbestos containing building material from O'Brien & Gere Engineers, Inc. These were to be analyzed by ACM Environmental, Inc. for possible asbestos content.

**THE REPORT:**

The attached report quantifies the fibrous materials found in each sample submitted for analysis. A complete fibrous analysis of samples is given for each sample followed by a break down analysis of any sub-samples for heterogeneous material.

The first column is the client sample identification.

The second column is the laboratory sample number. The laboratory number for the overall sample analysis is a digit number. The laboratory number followed by a letter designation (A,B,C, etc.) indicates a sub-sample analysis.

The third column is the sample identification which indicates whether the sample is homogeneous or heterogeneous, the color of the sample, and the physical description (cementitious, fibrous, cloth, etc.)

The fourth column indicates the types and percentages of asbestos identified in the sample or sub-sample.

The fifth column indicates the types and percentages of cellulose identified in the sample or sub-sample.

The sixth column indicates the types and percentages of non-asbestos non-fibrous material in the sample or sub-sample.

The seventh column indicates the types and percentages of non-asbestos fibrous material in the sample or sub-sample. Fibrous material will not necessarily total 100% of the sample.

There will be dashes (---) in each column when nothing is detected.

**METHOD:**

All analysis and quantification is performed in accordance with the U.S. Environmental Protection Agency's "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", 40 CFR, Part 763, Sub-Part F, Appendix A, 1987.

The method utilizes stereoscopic examination of the bulk samples, as well as utilizing the polarized light microscope and the central stop dispersion staining method.

If applicable, please be advised that the Stereo Scope/PLM methods have limitations regarding floor tile analysis for asbestos content. Historically, the production of floor tile has included the grinding of asbestos into sub-microscopic portions. Therefore, this method of analysis may produce incorrect results for tests of floor tile which produce negative finding for asbestos.

## **PAGE 2**

Gross samples are examined under a 10X or 20X stereoscope where homogeneity (need for sub-samples), color, texture and/or any other distinguishing characteristics are determined.

Sub-samples are prepared if needed. Any fibrous material is mounted in high dispersion oil for further microscope examination utilizing polarized light microscopy. Any possible asbestos fibers are analyzed for morphology, color and pleochroism, index of refraction parallel and perpendicular to elongation, birefringence, extinction characteristic and sign of elongation, and any other distinguishing characteristics observed.

To determine the refractive index, the central stop dispersion staining method is used as well as matching with refractive index oil and using light matching the sodium D-line wavelength. Identification of non-asbestos species is less rigorous, as they are secondary interest.

The percentage of asbestos and other fibrous materials is then determined according to sample area coverage and thickness. The limit of qualification is one percent (1%). The above is recorded on the laboratory analysis sheet and maintained for three years.

The error involved for reported percentages of fibrous material is 100% error for 1% to 5%, 50% error for 5% to 20%, and 25% error for 20% to 100%. All percentages will be reported in a range indicating error, or as a single value in which case the above error should be applied. When the value 1% is reported this indicates asbestos or greater is present in the sample.

### **ASBESTOS CHARACTERIZATION:**

The features of the various forms of asbestos are as follows:

**CHRYSOTILE:** Thin fibers and fiber bundles with both straight and wavy section. The ends of bundles tend to be frayed. Sign of elongation is positive, refractive indices are 1.493-1.560 (alpha) and 1.562 (gamma), with birefringence of 0.004-0.016. The fibers exhibit parallel extinction.

**AMOSITE:** Straight thin single fibers and bundles of such fibers usually with cleanly broken ends on individual fibers; positive sign of elongation, refractive indices of 1.653-1.696 (alpha) and 1.655-1.729 (gamma), birefringence of 0.020-0.033. Fibers exhibit parallel extinction.

**CROCIDOLITE:** Similar in morphology to amosite but is distinguished by negative sign of elongation, blue to blue-green pleochroic coloration, refractive indices of 1.654-1.701 (alpha) and 1.668-1.717 (gamma), and birefringence of 0.009-0.016. It is commonly referred to as blue asbestos.

**ANTHOPHYLITE:** Similar in morphology to amosite but has refractive indices of 1.596-1.652 (alpha) and 1.615-1.676 (gamma), anthophyllite fibers show parallel extinction and positive sign of elongation.

**PAGE 3**

**THEMOLITE/ACTINOLITE SERIES:**

Transparent, elongated furrowed prisms, usually with uneven, jagged ends and smooth sides, with oblique (0-20 degree) to parallel extinction and positive elongation; refractive indices are 1.599-1.668 (alpha) and 1.622-1.688 (gamma) and birefringence is 0.020-0.028. They optically and grade into each other.

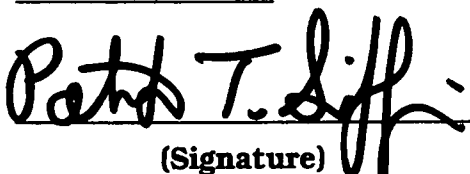
**SAMPLE RETENTION:**

Samples will be retained for 90 days unless other wise instructed. After this period, the sample(s) will be disposed of appropriately. Upon written request, the samples will be returned by mail or delivery for a nominal fee to cover postage and handling. There would be no charge for samples picked-up at ACM Environmental, Inc.

**DISCUSSION AND RECOMMENDATIONS:**

In order to reduce the risk of introducing asbestos fibers into the air, care should be taken not to disturb the asbestos containing building materials. If renovation, demolition or other activities might disturb known asbestos containing building materials, a reputable asbestos consultant should be contacted to help effectively design and implement an asbestos management program.

**Report prepared by:**      **Patrick T. Griffin**

  
(Signature)

**ACM Environmental, Inc.**  
**President/CEO**

## Analysis of Suspect Asbestos Containing Building Materials

CLIENT: O'BRIEN & GERE ENGINEERS, INC.  
34830 GRAND RIVER AVENUE, SUITE B-2  
NOVI, MI 48375

ANALYTICAL METHOD: EPA/600/R-93/116

NVLAP LAB CODE #: 101977

CLIENT PROJECT: BOSCH

MATRIX: BULK

DATE OF SAMPLE: 11/7/00

DATE OF ANALYSIS: 11/11/00

SAMPLE SITE: BUILDING 103

ACM PROJECT #: 6005

CLIENT SAMPLE NUMBER	LAB SAMPLE NUMBER	SAMPLE IDENTIFICATION	ASBEST	CELL	NON FIB NON ACBM	FIB NON ACBM
103- PACM-01	009021	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	20%	70%	10% G
103- PACM-02	009022	BLACK TAR & BROWN FIBROUS MATERIAL	10% C	10%	60%	20% G
103- PACM-03	009023	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	10%	75%	15% G
103- PACM-04	009024	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	20%	65%	15% G
103- PACM-05	009025	BLACK TAR MATERIAL	25% C	10%	45%	20% G
103- PACM-06	009026	BLACK TAR MATERIAL	45% C	-----	55%	-----
103- PACM-07	009027	BLACK TAR & YELLOW MASTIC MATERIAL	-----	15%	70%	15% G
103- PACM-08	009028	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	15%	70%	15% G
103- PACM-09	009029	BLACK TAR MATERIAL	15% C	15%	70%	-----
103- PACM-10	009030	WHITE GRAINY MATERIAL	2% C	-----	98%	-----
103- PACM-11	009031	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	15%	70%	15% G
103- PACM-12	009032	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	15%	65%	20% G
103- PACM-13	009033	BLACK TAR MATERIAL	15% C	10%	75%	-----
103- PACM-14	009034	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	20%	70%	10% G
103- PACM-15	009035	RED GRAINY & BLACK TAR MATERIAL	-----	-----	98%	2% G
103- PACM-16	009036	BLACK TAR & YELLOW FIBROUS MATERIAL	-----	15%	60%	25% G

MICROSCOPIST:



DATE:

11/11/00



## Analysis of Suspect Asbestos Containing Building Materials

**CLIENT:** O'BRIEN & GERE ENGINEERS, INC.  
34830 GRAND RIVER AVENUE, SUITE B-2  
NOVI, MI 48375

**ANALYTICAL METHOD:** EPA/600/R-93/116

**NVLAP LAB CODE #:** 101977

**CLIENT PROJECT:** BOSCH

**MATRIX:** BULK

**DATE OF SAMPLE:** 11/7/00

**DATE OF ANALYSIS:** 11/11/00

**SAMPLE SITE:** BUILDING 103

**ACM PROJECT #:** 6005

CLIENT SAMPLE NUMBER	LAB SAMPLE NUMBER	SAMPLE IDENTIFICATION	ASBEST	CELL	NON FIB NON ACBM	FIB NON ACBM
103- PACM-17	009037	BLACK TAR MATERIAL	-----	10%	70%	20% G
103- PACM-18	009038	BLACK TAR & WHITE FIBROUS MATERIAL	20% C	10%	70%	-----
103- PACM-50	009039	GRAY POWDERY MATERIAL	-----	-----	65%	35% G
103- PACM-51	009040	GRAY POWDERY MATERIAL	-----	-----	65%	35% G
103- PACM-52	009041	TAN GRAINY MATERIAL	-----	1%	99%	-----
103- PACM-53	009042	WHITE FIBROUS MATERIAL	-----	-----	-----	100% G
103- PACM-54	009043	WHITE FIBROUS MATERIAL	80% C	20%	-----	-----
103- PACM-55	009044	WHITE & TAN FIBROUS MATERIAL	35% C	65%	-----	-----
103- PACM-56	009045	BLACK GRAINY MATERIAL	10% C	20%	70%	-----
103- PACM-57	009046	WHITE POWDERY & BROWN FIBROUS MATERIAL	-----	15%	70%	15% G
103- PACM-58	009047	BROWN FIBROUS MATERIAL	-----	75%	-----	25% G
103- PACM-59	009048	TAN GRAINY MATERIAL	-----	-----	99%	1% H
103- PACM-60	009049	TAN GRAINY MATERIAL	-----	-----	99%	1% H
103- PACM-61	009050	BROWN PLASTIC & BROWN MASTIC MATERIAL	-----	5%	95%	-----
103- PACM-62	009051	TAN FIBROUS MATERIAL	-----	85%	-----	15% G
103- PACM-63	009052	BROWN FIBROUS & WHITE POWDERY MATERIAL	-----	50%	40%	10% G

**MICROSCOPIST:**



**DATE:**

11/11/00

## **Analysis of Suspect Asbestos Containing Building Materials**

**CLIENT:** O'BRIEN & GERE ENGINEERS, INC.  
34830 GRAND RIVER AVENUE, SUITE B-2  
NOVI, MI 48375

**ANALYTICAL METHOD:** EPA/600/R-93/116

**NVLAP LAB CODE #:** 101977

**CLIENT PROJECT:** BOSCH

**MATRIX:** BULK

**DATE OF SAMPLE:** 11/7/00

**DATE OF ANALYSIS:** 11/11/00

**SAMPLE SITE:** BUILDING 103

**ACM PROJECT #:** 6005

CLIENT SAMPLE NUMBER	LAB SAMPLE NUMBER	SAMPLE IDENTIFICATION	ASBEST	CELL	NON FIB NON ACBM	FIB NON ACBM
103- PACM-64	009053	WHITE & TAN GRAINY MATERIAL	----	3%	97%	----
103- PACM-65	009054	WHITE POWDERY & BROWN FIBROUS MATERIAL	----	15%	80%	5% G
103- PACM-66	009055	BLACK RUBBERY MATERIAL	----	2%	98%	----
103- PACM-67	009056	BEIGE GRAINY MATERIAL	5% C	----	95%	----
103- PACM-67	009056-A	BLACK MASTIC MATERIAL	10% C	15%	75%	----
103- PACM-68	009057	TAN FIBROUS MATERIAL	----	20%	70%	10% G
103- PACM-69	009058	BROWN FIBROUS & WHITE POWDERY MATERIAL	----	45%	50%	5% G
103- PACM-70	009059	BROWN FIBROUS MATERIAL	----	100%	----	----
103- PACM-71	009060	BROWN FIBROUS MATERIAL	----	100%	----	----
103- PACM-72	009061	BROWN FIBROUS MATERIAL	----	100%	----	----
103- PACM-73	009062	GRAY GRAINY MATERIAL	----	4%	95%	1% H
103- PACM-74	009063	RED CEMENTITIOUS & BROWN MASTIC MATERIAL	----	----	100%	----

**MICROSCOPIST:**



**DATE:**

11/11/00

# **Analysis of Suspect Asbestos Containing Materials**

**ACM ENVIRONMENTAL, INC. PROJECT NO.: 6005**

DESCRIPTION OF ANY PROBLEMS ENCOUNTERED IN THE SAMPLE ANALYSIS: None

## **COMPONENTS DESCRIPTION:**

### **ASBESTOS MATERIALS**

C = CHRYSOTILE  
A = AMOSITE  
CR = CROCIDOLITE  
AN = ANTHOPHYLITE  
AC = ACTINOLITE  
T = TREMOLITE

### **NON-ASBESTOS MATERIALS**

CELL = CELLULOSE  
G = FIBROUS GLASS  
M = MINERAL WOOL  
S = SYNTHETICS  
H = HAIR  
C = COTTON  
O = OTHER  
CF = CERAMIC FIBERS

**NOTES:** FIBROUS QUANTITIES DO NOT NECESSARILY ADD UP TO 100%,  
REMAINING  
QUANTITIES ARE COMPOSED OF NON-FIBROUS ROCKS, BINDERS AND  
FILTERS.

THIS REPORT MUST NOT BE USED BY THE CLIENT TO CLAIM PRODUCT  
ENDORSEMENT BY NVLAP OR ANY AGENCY OF THE U.S. GOVERNMENT.

THIS REPORT RELATES ONLY TO THE ITEMS ABOVE.

THIS TEST REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN CONSENT OF ACM ENVIRONMENTAL, INC.

ACM ENVIRONMENTAL, INC. DOES NOT DEVIATE FROM THE TEST  
METHOD DESCRIBED IN THIS REPORT.



# Fire & Environmental Consulting Laboratories, Inc.

1451 East Lansing Drive Suite 222 East Lansing MI 48823 Phone: (517) 332-0167 Ext. 14 Fax: (517) 332-6333

## CASE NARRATIVE REPORT

November 28, 2000

Attn.: Mr. William Clifford  
O'Brien & Gere  
39830 Grand River Ave. Suite B-2  
Novi, MI 48375

**RE: FECL #s: S03788.01- S03788.61 & S03803.01-S03803.18**

**Log in:** The matrix descriptions on the chain of custody did not match the samples. The paint chip matrix was similar to the scrape matrix. One set of glass sample containers (4 oz. wide mouth glass )was shipped to the laboratory in a cooler with no packing material. The samples were broken upon receipt (sample ID's 103-39 & 103-18). The duplicate samples were not on the COC record. Sample ID 104-8 was also missing from the COC record. The sample was added for lead analysis per client request on 11-14-00.

**Samples:** The samples referenced above had many matrix difficulties. The samples did not look the same within a tag number (ex. 103-41). Some wipe samples contained more sediment than just on the gauze. The gauze that was analyzed had violent reactions to the acids used (i.e. Nitric, Sulfuric).

**Metals:** The digestions had to be diluted in order to digest the samples. The reactions with Nitric acid were very strong.

**Cyanide:** A full gauze was not analyzed for cyanide. A quarter was cut out and analyzed. The results reported were based on the concentration from the quarter multiplied by four. These results should be considered as estimated only.

**PCBs:** The PCB detection limits had to be increased due to heavy matrix interference. The final sample extracts were black and needed all three PCB clean-up procedures available. The acid clean up had a strong reaction with the samples.

**Semi-Volatiles:** the detection limits were increased due to matrix interference. The chromatograms show very heavy oil interference, and therefore, the samples were diluted to accommodate for the matrix.

If you have any further questions, please do not hesitate to contact me at (517) 332-0167, ext. 14 or e-mail me at [mmurshak@fec-labs.com](mailto:mmurshak@fec-labs.com).

Sincerely,

Maya Murshak  
Chemical Engineer / QA Officer



## Analytical Laboratory Report

Report ID: S03788.01(01)  
Generated on 11/28/2000

Report to

Attention: Mr. Bill Clifford  
O'Brien & Gere Inc. of North America  
39830 Grand River A, Suite B2  
Novi, MI 48375

Phone: 248-426-8970 FAX: 248-426-8997

Report produced by

Fire & Environmental Consulting Laboratories  
1451 East Lansing Drive, Suite 222  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S03788.01-S03788.62  
Project: Bosch South Bend, In. 27635  
Submitted Date/Time: 11/10/2000 11:00  
Sampled by: WC  
P.O. #:

Report Notes

Methods may be modified for improved performance.  
Results reported on a dry weight basis where applicable.  
Results relate only to items tested.  
Report shall not be reproduced except in full, without the written approval of FECL.

*Violetta F. Murshak*

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

Lab Sample ID: S03788.01

Sample Tag: 103-14

Collected Date/Time: 11/08/2000 09:20

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	13,400	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.02

Sample Tag: 103-15

Collected Date/Time: 11/08/2000 09:28

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	2,020	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.03

Sample Tag: 103-16

Collected Date/Time: 11/08/2000 09:31

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Metals

Digestion	Completed			varies	11/20/00	EMIL		
Lead	1,730	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	





# Analytical Laboratory Report

Lab Sample ID: S03788.04

Sample Tag: 103-17

Collected Date/Time: 11/08/2000 09:33

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Metals

Digestion	Completed			varies	11/20/00	EMIL		
Lead	13,700	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.05

Sample Tag: 103-18

Collected Date/Time: 11/08/2000 09:35

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	8,010	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.06  
Sample Tag: 103-19  
Collected Date/Time: 11/08/2000 09:40  
Matrix: Solid/Scrape  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	43,500	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.17

Sample Tag: 103-13

Collected Date/Time: 11/08/2000 21:12

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	13,300	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.18

Sample Tag: 103-26

Collected Date/Time: 11/09/2000 12:39

Matrix: Solid/Scrape

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Metals

Digestion	Completed			varies	11/20/00	EMIL		
Lead	4,510	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.19  
Sample Tag: 103-27  
Collected Date/Time: 11/09/2000 12:54  
Matrix: Solid/Scrape  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	2,400	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.26

Sample Tag: 103-7

Collected Date/Time: 11/08/2000 08:43

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Metals

Digestion	Completed			varies	11/20/00	EMIL		
Lead	4,520	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.27

Sample Tag: 103-8

Collected Date/Time: 11/08/2000 08:51

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### **Metals**

Digestion	Completed			varies	11/20/00	EMIL		
Lead	1,060	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	





# Analytical Laboratory Report

Lab Sample ID: S03788.28  
Sample Tag: 103-9  
Collected Date/Time: 11/08/2000 08:53  
Matrix: Paint Chip  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	10,400	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.29

Sample Tag: 103-10

Collected Date/Time: 11/08/2000 08:57

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	30,800	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.30

Sample Tag: 103-11

Collected Date/Time: 11/08/2000 09:01

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	5,100	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.31

Sample Tag: 103-12

Collected Date/Time: 11/08/2000 09:07

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	6,170	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03788.32

Sample Tag: 103-20

Collected Date/Time: 11/08/2000 13:25

Matrix: Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	1.56	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	16.7	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	9.4	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	900	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	2,650	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	364	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	93,900	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	83-32-9	MI
Acenaphthylene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	208-96-8	MI
Anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-12-7	MI
Benzo(a)anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	56-55-3	MI
Benzo(b)fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	205-99-2	MI
Benzo(k)fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	207-08-9	MI
Benzo(ghi)perylene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	191-24-2	MI
Benzo(a)pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	50-32-8	MI
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	20	8270	11/22/00	GCE	111-91-1	MI
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	111-44-4	MI
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	108-60-1	MI
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	117-81-7	MI
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	101-55-3	MI
Butyl benzyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	85-68-7	MI
4-Chloroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-47-8	MI
2-Chloronaphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-58-7	MI
4-Chloro-3-methylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	59-50-7	MI
2-Chlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-57-8	MI
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	7005-72-3	MI
Chrysene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	218-01-9	MI
p,m-Cresol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-44-5	MI
o-Cresol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-48-7	MI
Dibenzo(ah)anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	53-70-3	MI
Dibenzofuran	Not detected	ug/100cm2	20	8270	11/22/00	GCE	132-64-9	MI
di-n-Butyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	84-74-2	MI
1,2-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-50-1	MI
1,3-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	541-73-1	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.32 (continued)

Sample Tag: 103-20

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-46-7	MI
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-94-1	MI
2,4-Dichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-83-2	MI
Diethyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	84-66-2	MI
2,4-Dimethylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	105-67-9	MI
Dimethyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	131-11-3	MI
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	534-52-1	MI
2,4-Dinitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	51-28-5	MI
2,4-Dinitrotoluene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	121-14-2	MI
2,6-Dinitrotoluene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	606-20-2	MI
di-n-Octyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	117-84-0	MI
Fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	206-44-0	MI
Fluorene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	86-73-7	MI
Hexachlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	118-74-1	MI
Hexachlorobutadiene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	87-68-3	MI
Hexachlorocyclopentadiene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	77-47-4	MI
Hexachloroethane	Not detected	ug/100cm2	20	8270	11/22/00	GCE	67-72-1	MI
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	193-39-5	MI
Isophorone	Not detected	ug/100cm2	20	8270	11/22/00	GCE	78-59-1	MI
2-Methylnaphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-57-6	MI
Naphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-20-3	MI
2-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-74-4	MI
3-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	99-09-2	MI
4-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	100-01-6	MI
Nitrobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	98-95-3	MI
2-Nitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-75-5	MI
4-Nitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	100-02-7	MI
N-Nitrosodiphenylamine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	156-10-5	MI
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	621-64-7	MI
Pentachlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	87-86-5	MI
Phenanthrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	85-01-8	MI
Phenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	108-95-2	MI
Pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	129-00-0	MI
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-82-1	MI
2,4,5-Trichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-95-4	MI
2,4,6-Trichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-06-2	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.33

Sample Tag: 103-21

Collected Date/Time: 11/08/2000 13:53

Matrix: Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	0.68	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	Not detected	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	Not detected	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	66.2	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	336	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	Not detected	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	160	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	83-32-9	MI
Acenaphthylene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	208-96-8	MI
Anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-12-7	MI
Benzo(a)anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	56-55-3	MI
Benzo(b)fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	205-99-2	MI
Benzo(k)fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	207-08-9	MI
Benzo(ghi)perylene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	191-24-2	MI
Benzo(a)pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	50-32-8	MI
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	20	8270	11/22/00	GCE	111-91-1	MI
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	111-44-4	MI
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	108-60-1	MI
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	117-81-7	MI
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	101-55-3	MI
Butyl benzyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	85-68-7	MI
4-Chloroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-47-8	MI
2-Chloronaphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-58-7	MI
4-Chloro-3-methylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	59-50-7	MI
2-Chlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-57-8	MI
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	7005-72-3	MI
Chrysene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	218-01-9	MI
p,m-Cresol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-44-5	MI
o-Cresol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-48-7	MI
Dibenzo(ah)anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	53-70-3	MI
Dibenzofuran	Not detected	ug/100cm2	20	8270	11/22/00	GCE	132-64-9	MI
di-n-Butyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	84-74-2	MI
1,2-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-50-1	MI
1,3-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	541-73-1	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.33 (continued)

Sample Tag: 103-21

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-46-7	MI
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-94-1	MI
2,4-Dichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-83-2	MI
Diethyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	84-66-2	MI
2,4-Dimethylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	105-67-9	MI
Dimethyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	131-11-3	MI
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	534-52-1	MI
2,4-Dinitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	51-28-5	MI
2,4-Dinitrotoluene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	121-14-2	MI
2,6-Dinitrotoluene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	606-20-2	MI
di-n-Octyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	117-84-0	MI
Fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	206-44-0	MI
Fluorene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	86-73-7	MI
Hexachlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	118-74-1	MI
Hexachlorobutadiene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	87-68-3	MI
Hexachlorocyclopentadiene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	77-47-4	MI
Hexachloroethane	Not detected	ug/100cm2	20	8270	11/22/00	GCE	67-72-1	MI
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	193-39-5	MI
Isophorone	Not detected	ug/100cm2	20	8270	11/22/00	GCE	78-59-1	MI
2-Methylnaphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-57-6	MI
Naphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-20-3	MI
2-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-74-4	MI
3-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	99-09-2	MI
4-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	100-01-6	MI
Nitrobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	98-95-3	MI
2-Nitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-75-5	MI
4-Nitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	100-02-7	MI
N-Nitrosodiphenylamine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	156-10-5	MI
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	621-64-7	MI
Pentachlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	87-86-5	MI
Phenanthrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	85-01-8	MI
Phenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	108-95-2	MI
Pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	129-00-0	MI
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-82-1	MI
2,4,5-Trichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-95-4	MI
2,4,6-Trichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-06-2	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.





# Analytical Laboratory Report

Lab Sample ID: S03788.34

Sample Tag: 103-22

Collected Date/Time: 11/08/2000 14:11

Matrix: Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	7.44	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	Not detected	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	11.0	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	919	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	631	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	724	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	687	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	83-32-9	MI
Acenaphthylene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	208-96-8	MI
Anthracene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	120-12-7	MI
Benzo(a)anthracene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	56-55-3	MI
Benzo(b)fluoranthene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	205-99-2	MI
Benzo(k)fluoranthene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	207-08-9	MI
Benzo(ghi)perylene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	191-24-2	MI
Benzo(a)pyrene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	50-32-8	MI
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	320	8270	11/22/00	GCE	111-91-1	MI
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	320	8270	11/22/00	GCE	111-44-4	MI
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	320	8270	11/22/00	GCE	108-60-1	MI
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	320	8270	11/22/00	GCE	117-81-7	MI
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	320	8270	11/22/00	GCE	101-55-3	MI
Butyl benzyl phthalate	Not detected	ug/100cm2	320	8270	11/22/00	GCE	85-68-7	MI
4-Chloroaniline	Not detected	ug/100cm2	320	8270	11/22/00	GCE	106-47-8	MI
2-Chloronaphthalene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	91-58-7	MI
4-Chloro-3-methylphenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	59-50-7	MI
2-Chlorophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	95-57-8	MI
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	320	8270	11/22/00	GCE	7005-72-3	MI
Chrysene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	218-01-9	MI
p,m-Cresol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	106-44-5	MI
o-Cresol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	95-48-7	MI
Dibenzo(ah)anthracene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	53-70-3	MI
Dibenzofuran	Not detected	ug/100cm2	320	8270	11/22/00	GCE	132-64-9	MI
di-n-Butyl phthalate	Not detected	ug/100cm2	320	8270	11/22/00	GCE	84-74-2	MI
1,2-Dichlorobenzene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	95-50-1	MI
1,3-Dichlorobenzene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	541-73-1	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.34 (continued)

Sample Tag: 103-22

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	106-46-7	MI
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	320	8270	11/22/00	GCE	91-94-1	MI
2,4-Dichlorophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	120-83-2	MI
Diethyl phthalate	Not detected	ug/100cm2	320	8270	11/22/00	GCE	84-66-2	MI
2,4-Dimethylphenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	105-67-9	MI
Dimethyl phthalate	Not detected	ug/100cm2	320	8270	11/22/00	GCE	131-11-3	MI
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	534-52-1	MI
2,4-Dinitrophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	51-28-5	MI
2,4-Dinitrotoluene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	121-14-2	MI
2,6-Dinitrotoluene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	606-20-2	MI
di-n-Octyl phthalate	Not detected	ug/100cm2	320	8270	11/22/00	GCE	117-84-0	MI
Fluoranthene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	206-44-0	MI
Fluorene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	86-73-7	MI
Hexachlorobenzene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	118-74-1	MI
Hexachlorobutadiene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	87-68-3	MI
Hexachlorocyclopentadiene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	77-47-4	MI
Hexachloroethane	Not detected	ug/100cm2	320	8270	11/22/00	GCE	67-72-1	MI
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	193-39-5	MI
Isophorone	Not detected	ug/100cm2	320	8270	11/22/00	GCE	78-59-1	MI
2-Methylnaphthalene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	91-57-6	MI
Naphthalene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	91-20-3	MI
2-Nitroaniline	Not detected	ug/100cm2	320	8270	11/22/00	GCE	88-74-4	MI
3-Nitroaniline	Not detected	ug/100cm2	320	8270	11/22/00	GCE	99-09-2	MI
4-Nitroaniline	Not detected	ug/100cm2	320	8270	11/22/00	GCE	100-01-6	MI
Nitrobenzene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	98-95-3	MI
2-Nitrophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	88-75-5	MI
4-Nitrophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	100-02-7	MI
N-Nitrosodiphenylamine	Not detected	ug/100cm2	320	8270	11/22/00	GCE	156-10-5	MI
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	320	8270	11/22/00	GCE	621-64-7	MI
Pentachlorophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	87-86-5	MI
Phenanthrene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	85-01-8	MI
Phenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	108-95-2	MI
Pyrene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	129-00-0	MI
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	320	8270	11/22/00	GCE	120-82-1	MI
2,4,5-Trichlorophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	95-95-4	MI
2,4,6-Trichlorophenol	Not detected	ug/100cm2	320	8270	11/22/00	GCE	88-06-2	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.35

Sample Tag: 103-23

Collected Date/Time: 11/08/2000 14:16

Matrix: Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	7.84	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	Not detected	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	Not detected	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	7,590	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	1,380	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	181	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	290	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	83-32-9	M
Acenaphthylene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	208-96-8	M
Anthracene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	120-12-7	M
Benzo(a)anthracene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	56-55-3	M
Benzo(b)fluoranthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	205-99-2	M
Benzo(k)fluoranthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	207-08-9	M
Benzo(ghi)perylene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	191-24-2	M
Benzo(a)pyrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	50-32-8	M
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	80	8270	11/22/00	GCE	111-91-1	M
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	111-44-4	M
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	108-60-1	M
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	117-81-7	M
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	101-55-3	M
Butyl benzyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	85-68-7	M
4-Chloroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	106-47-8	M
2-Chloronaphthalene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-58-7	M
4-Chloro-3-methylphenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	59-50-7	M
2-Chlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-57-8	M
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	7005-72-3	M
Chrysene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	218-01-9	M
p,m-Cresol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	106-44-5	M
o-Cresol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-48-7	M
Dibenzo(ah)anthracene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	53-70-3	M
Dibenzofuran	Not detected	ug/100cm2	80	8270	11/22/00	GCE	132-64-9	M
di-n-Butyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	84-74-2	M
1,2-Dichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-50-1	M
1,3-Dichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	541-73-1	M

M-Higher detection limit due to matrix interference.



# Analytical Laboratory Report

Lab Sample ID: S03788.35 (continued)

Sample Tag: 103-23

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	106-46-7	M
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-94-1	M
2,4-Dichlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	120-83-2	M
Diethyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	84-66-2	M
2,4-Dimethylphenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	105-67-9	M
Dimethyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	131-11-3	M
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	534-52-1	M
2,4-Dinitrophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	51-28-5	M
2,4-Dinitrotoluene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	121-14-2	M
2,6-Dinitrotoluene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	606-20-2	M
di-n-Octyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	117-84-0	M
Fluoranthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	206-44-0	M
Fluorene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	86-73-7	M
Hexachlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	118-74-1	M
Hexachlorobutadiene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	87-68-3	M
Hexachlorocyclopentadiene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	77-47-4	M
Hexachloroethane	Not detected	ug/100cm2	80	8270	11/22/00	GCE	67-72-1	M
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	193-39-5	M
Isophorone	Not detected	ug/100cm2	80	8270	11/22/00	GCE	78-59-1	M
2-Methylnaphthalene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-57-6	M
Naphthalene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-20-3	M
2-Nitroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	88-74-4	M
3-Nitroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	99-09-2	M
4-Nitroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	100-01-6	M
Nitrobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	98-95-3	M
2-Nitrophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	88-75-5	M
4-Nitrophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	100-02-7	M
N-Nitrosodiphenylamine	Not detected	ug/100cm2	80	8270	11/22/00	GCE	156-10-5	M
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	80	8270	11/22/00	GCE	621-64-7	M
Pentachlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	87-86-5	M
Phenanthrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	85-01-8	M
Phenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	108-95-2	M
Pyrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	129-00-0	M
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	120-82-1	M
2,4,5-Trichlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-95-4	M
2,4,6-Trichlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	88-06-2	M

M-Higher detection limit due to matrix interference.



# Analytical Laboratory Report

Lab Sample ID: S03788.38

Sample Tag: 103-24

Collected Date/Time: 11/09/2000 08:50

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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### PCB Swab List

PCB-1016	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	1	8082	11/20/00	JANB	53469-21-9	
PCB-1248	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12672-29-6	
PCB-1254	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11096-82-5	



# Analytical Laboratory Report

Lab Sample ID: S03788.39

Sample Tag: 103-28

Collected Date/Time: 11/09/2000 14:04

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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## PCB Swab List

PCB-1016	Not detected	ug/100cm2	10	8082	11/20/00	JANB	12674-11-2 M	
PCB-1221	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11104-28-2 M	
PCB-1232	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11141-16-5 M	
PCB-1242	Not detected	ug/100cm2	10	8082	11/20/00	JANB	53469-21-9 M	
PCB-1248	Not detected	ug/100cm2	10	8082	11/20/00	JANB	12672-29-6 M	
PCB-1254	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11097-69-1 M	
PCB-1260	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11096-82-5 M	

M-Higher detection limit due to matrix interference.



# Analytical Laboratory Report

Lab Sample ID: S03788.40

Sample Tag: 103-30

Collected Date/Time: 11/09/2000 14:30

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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### PCB Swab List

PCB-1016	Not detected	ug/100cm2	3	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	3	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	3	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	3	8082	11/20/00	JANB	53469-21-9	T
PCB-1248	Not detected	ug/100cm2	3	8082	11/20/00	JANB	12672-29-6	
PCB-1254	6	ug/100cm2	3	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	3	8082	11/20/00	JANB	11096-82-5	T

T-Trace amount of analyte detected below the MDL.



# Analytical Laboratory Report

Lab Sample ID: S03788.41

Sample Tag: 103-31

Collected Date/Time: 11/09/2000 14:34

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
<b>PCB Swab List</b>								
PCB-1016	Not detected	ug/100cm2	2	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	2	8082	11/20/00	JANB	53469-21-9	T
PCB-1248	Not detected	ug/100cm2	2	8082	11/20/00	JANB	12672-29-6	
PCB-1254	2.5	ug/100cm2	2	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11096-82-5	T

T-Trace amount of analyte detected below the MDL.





# Analytical Laboratory Report

Lab Sample ID: S03788.42  
Sample Tag: 103-33  
Collected Date/Time: 11/09/2000 15:02  
Matrix: Sediment/Wipe  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics</b>								
Extraction, PCB	Completed			3550	11/15/00	JKB		
<b>PCB Swab List</b>								
PCB-1016	Not detected	ug/100cm2	10	8082	11/20/00	JANB	12674-11-2	M
PCB-1221	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11104-28-2	M
PCB-1232	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11141-16-5	M
PCB-1242	Not detected	ug/100cm2	10	8082	11/20/00	JANB	53469-21-9	M
PCB-1248	Not detected	ug/100cm2	10	8082	11/20/00	JANB	12672-29-6	M
PCB-1254	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11097-69-1	M
PCB-1260	Not detected	ug/100cm2	10	8082	11/20/00	JANB	11096-82-5	M

M-Higher detection limit due to matrix interference.



# Analytical Laboratory Report

Lab Sample ID: S03788.43  
Sample Tag: 103-34  
Collected Date/Time: 11/09/2000 15:21  
Matrix: Sediment/Wipe  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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## PCB Swab List

PCB-1016	Not detected	ug/100cm2	2	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	2	8082	11/20/00	JANB	53469-21-9	T
PCB-1248	Not detected	ug/100cm2	2	8082	11/20/00	JANB	12672-29-6	
PCB-1254	4	ug/100cm2	2	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11096-82-5	T

T-Trace amount of analyte detected below the MDL.



# Analytical Laboratory Report

Lab Sample ID: S03788.44

Sample Tag: 103-35

Collected Date/Time: 11/09/2000 15:31

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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## PCB Swab List

PCB-1016	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	1	8082	11/20/00	JANB	53469-21-9	
PCB-1248	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12672-29-6	
PCB-1254	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11097-69-1	
PCB-1260	1	ug/100cm2	1	8082	11/20/00	JANB	11096-82-5	



# Analytical Laboratory Report

Lab Sample ID: S03788.45

Sample Tag: 103-1

Collected Date/Time: 11/07/2000 14:35

Matrix: Sludge/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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### PCB Swab List

PCB-1016	Not detected	ug/100cm2	50	8082	11/20/00	JANB	12674-11-2 M	
PCB-1221	Not detected	ug/100cm2	50	8082	11/20/00	JANB	11104-28-2 M	
PCB-1232	Not detected	ug/100cm2	50	8082	11/20/00	JANB	11141-16-5 M	
PCB-1242	Not detected	ug/100cm2	50	8082	11/20/00	JANB	53469-21-9 M	
PCB-1248	Not detected	ug/100cm2	50	8082	11/20/00	JANB	12672-29-6 M	
PCB-1254	Not detected	ug/100cm2	50	8082	11/20/00	JANB	11097-69-1 M	
PCB-1260	Not detected	ug/100cm2	50	8082	11/20/00	JANB	11096-82-5 T	

M-Higher detection limit due to matrix interference.

T-Trace amount of analyte detected below the MDL.



# Analytical Laboratory Report

Lab Sample ID: S03788.46

Sample Tag: 103-2

Collected Date/Time: 11/07/2000 14:40

Matrix: Sludge/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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### PCB Swab List

PCB-1016	Not detected	ug/100cm2	20	8082	11/20/00	JANB	12674-11-2 M	
PCB-1221	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11104-28-2 M	
PCB-1232	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11141-16-5 M	
PCB-1242	Not detected	ug/100cm2	20	8082	11/20/00	JANB	53469-21-9 M	
PCB-1248	Not detected	ug/100cm2	20	8082	11/20/00	JANB	12672-29-6 M	
PCB-1254	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11097-69-1 M	
PCB-1260	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11096-82-5 T	

M-Higher detection limit due to matrix interference.

T-Trace amount of analyte detected below the MDL.



# Analytical Laboratory Report

Lab Sample ID: S03788.49

Sample Tag: 103-3

Collected Date/Time: 11/07/2000 14:55

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	1.42	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	15.2	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	59.8	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	6,970	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	26,500	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	347	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	6,400	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	83-32-9	
Acenaphthylene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	208-96-8	
Anthracene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	120-12-7	
Benzo(a)anthracene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	56-55-3	
Benzo(b)fluoranthene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	207-08-9	
Benzo(ghi)perylene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	191-24-2	
Benzo(a)pyrene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	50-32-8	
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	10	8270	11/22/00	GCE	111-91-1	
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	10	8270	11/22/00	GCE	111-44-4	
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	10	8270	11/22/00	GCE	108-60-1	
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	10	8270	11/22/00	GCE	117-81-7	
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	10	8270	11/22/00	GCE	101-55-3	
Butyl benzyl phthalate	Not detected	ug/100cm2	10	8270	11/22/00	GCE	85-68-7	
4-Chloroaniline	Not detected	ug/100cm2	10	8270	11/22/00	GCE	106-47-8	
2-Chloronaphthalene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	91-58-7	
4-Chloro-3-methylphenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	59-50-7	
2-Chlorophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	95-57-8	
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	10	8270	11/22/00	GCE	7005-72-3	
Chrysene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	218-01-9	
p,m-Cresol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	106-44-5	
o-Cresol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	95-48-7	
Dibenzo(ah)anthracene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	53-70-3	
Dibenzofuran	Not detected	ug/100cm2	10	8270	11/22/00	GCE	132-64-9	
di-n-Butyl phthalate	Not detected	ug/100cm2	10	8270	11/22/00	GCE	84-74-2	
1,2-Dichlorobenzene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	95-50-1	
1,3-Dichlorobenzene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	106-46-7	



# Analytical Laboratory Report

Lab Sample ID: S03788.49 (continued)

Sample Tag: 103-3

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	10	8270	11/22/00	GCE	91-94-1	
2,4-Dichlorophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	120-83-2	
Diethyl phthalate	Not detected	ug/100cm2	10	8270	11/22/00	GCE	84-66-2	
2,4-Dimethylphenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	105-67-9	
Dimethyl phthalate	Not detected	ug/100cm2	10	8270	11/22/00	GCE	131-11-3	
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	534-52-1	
2,4-Dinitrophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	51-28-5	
2,4-Dinitrotoluene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	121-14-2	
2,6-Dinitrotoluene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	606-20-2	
di-n-Octyl phthalate	Not detected	ug/100cm2	10	8270	11/22/00	GCE	117-84-0	
Fluoranthene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	206-44-0	
Fluorene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	86-73-7	
Hexachlorobenzene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	118-74-1	
Hexachlorobutadiene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	87-68-3	
Hexachlorocyclopentadiene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	77-47-4	
Hexachloroethane	Not detected	ug/100cm2	10	8270	11/22/00	GCE	67-72-1	
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	193-39-5	
Isophorone	Not detected	ug/100cm2	10	8270	11/22/00	GCE	78-59-1	
2-Methylnaphthalene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	91-57-6	
Naphthalene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	91-20-3	
2-Nitroaniline	Not detected	ug/100cm2	10	8270	11/22/00	GCE	88-74-4	
3-Nitroaniline	Not detected	ug/100cm2	10	8270	11/22/00	GCE	99-09-2	
4-Nitroaniline	Not detected	ug/100cm2	10	8270	11/22/00	GCE	100-01-6	
Nitrobenzene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	98-95-3	
2-Nitrophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	88-75-5	
4-Nitrophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	100-02-7	
N-Nitrosodiphenylamine	Not detected	ug/100cm2	10	8270	11/22/00	GCE	156-10-5	
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	10	8270	11/22/00	GCE	621-64-7	
Pentachlorophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	87-86-5	
Phenanthrene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	85-01-8	
Phenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	108-95-2	
Pyrene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	129-00-0	
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	10	8270	11/22/00	GCE	120-82-1	
2,4,5-Trichlorophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	95-95-4	
2,4,6-Trichlorophenol	Not detected	ug/100cm2	10	8270	11/22/00	GCE	88-06-2	



# Analytical Laboratory Report

Lab Sample ID: S03788.50  
Sample Tag: 103-4  
Collected Date/Time: 11/07/2000 15:10  
Matrix: Sediment/Wipe  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	1.68	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	Not detected	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	342	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	244	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	1,080	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	Not detected	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	6,460	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	83-32-9	MI
Acenaphthylene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	208-96-8	MI
Anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-12-7	MI
Benzo(a)anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	56-55-3	MI
Benzo(b)fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	205-99-2	MI
Benzo(k)fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	207-08-9	MI
Benzo(ghi)perylene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	191-24-2	MI
Benzo(a)pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	50-32-8	MI
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	20	8270	11/22/00	GCE	111-91-1	MI
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	111-44-4	MI
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	108-60-1	MI
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	117-81-7	MI
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	101-55-3	MI
Butyl benzyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	85-68-7	MI
4-Chloroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-47-8	MI
2-Chloronaphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-58-7	MI
4-Chloro-3-methylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	59-50-7	MI
2-Chlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-57-8	MI
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	20	8270	11/22/00	GCE	7005-72-3	MI
Chrysene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	218-01-9	MI
p,m-Cresol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-44-5	MI
o-Cresol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-48-7	MI
Dibenzo(ah)anthracene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	53-70-3	MI
Dibenzofuran	Not detected	ug/100cm2	20	8270	11/22/00	GCE	132-64-9	MI
di-n-Butyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	84-74-2	MI
1,2-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-50-1	MI
1,3-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	541-73-1	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.





# Analytical Laboratory Report

Lab Sample ID: S03788.50 (continued)

Sample Tag: 103-4

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	106-46-7	MI
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-94-1	MI
2,4-Dichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-83-2	MI
Diethyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	84-66-2	MI
2,4-Dimethylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	105-67-9	MI
Dimethyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	131-11-3	MI
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	534-52-1	MI
2,4-Dinitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	51-28-5	MI
2,4-Dinitrotoluene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	121-14-2	MI
2,6-Dinitrotoluene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	606-20-2	MI
di-n-Octyl phthalate	Not detected	ug/100cm2	20	8270	11/22/00	GCE	117-84-0	MI
Fluoranthene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	206-44-0	MI
Fluorene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	86-73-7	MI
Hexachlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	118-74-1	MI
Hexachlorobutadiene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	87-68-3	MI
Hexachlorocyclopentadiene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	77-47-4	MI
Hexachloroethane	Not detected	ug/100cm2	20	8270	11/22/00	GCE	67-72-1	MI
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	193-39-5	MI
Isophorone	Not detected	ug/100cm2	20	8270	11/22/00	GCE	78-59-1	MI
2-Methylnaphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-57-6	MI
Naphthalene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	91-20-3	MI
2-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-74-4	MI
3-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	99-09-2	MI
4-Nitroaniline	Not detected	ug/100cm2	20	8270	11/22/00	GCE	100-01-6	MI
Nitrobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	98-95-3	MI
2-Nitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-75-5	MI
4-Nitrophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	100-02-7	MI
N-Nitrosodiphenylamine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	156-10-5	MI
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	20	8270	11/22/00	GCE	621-64-7	MI
Pentachlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	87-86-5	MI
Phenanthrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	85-01-8	MI
Phenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	108-95-2	MI
Pyrene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	129-00-0	MI
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	20	8270	11/22/00	GCE	120-82-1	MI
2,4,5-Trichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	95-95-4	MI
2,4,6-Trichlorophenol	Not detected	ug/100cm2	20	8270	11/22/00	GCE	88-06-2	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.51

Sample Tag: 103-5

Collected Date/Time: 11/07/2000 15:20

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	0.64	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	Not detected	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	22.7	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	154	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	699	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	Not detected	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	1,290	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	83-32-9	MI
Acenaphthylene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	208-96-8	MI
Anthracene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	120-12-7	MI
Benzo(a)anthracene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	56-55-3	MI
Benzo(b)fluoranthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	205-99-2	MI
Benzo(k)fluoranthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	207-08-9	MI
Benzo(ghi)perylene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	191-24-2	MI
Benzo(a)pyrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	50-32-8	MI
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	80	8270	11/22/00	GCE	111-91-1	MI
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	111-44-4	MI
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	108-60-1	MI
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	117-81-7	MI
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	101-55-3	MI
Butyl benzyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	85-68-7	MI
4-Chloroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	106-47-8	MI
2-Chloronaphthalene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-58-7	MI
4-Chloro-3-methylphenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	59-50-7	MI
2-Chlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-57-8	MI
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	80	8270	11/22/00	GCE	7005-72-3	MI
Chrysene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	218-01-9	MI
p,m-Cresol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	106-44-5	MI
o-Cresol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-48-7	MI
Dibenzo(ah)anthracene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	53-70-3	MI
Dibenzofuran	Not detected	ug/100cm2	80	8270	11/22/00	GCE	132-64-9	MI
di-n-Butyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	84-74-2	MI
1,2-Dichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-50-1	MI
1,3-Dichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	541-73-1	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.51 (continued)

Sample Tag: 103-5

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	106-46-7	MI
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-94-1	MI
2,4-Dichlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	120-83-2	MI
Diethyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	84-66-2	MI
2,4-Dimethylphenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	105-67-9	MI
Dimethyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	131-11-3	MI
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	534-52-1	MI
2,4-Dinitrophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	51-28-5	MI
2,4-Dinitrotoluene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	121-14-2	MI
2,6-Dinitrotoluene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	606-20-2	MI
di-n-Octyl phthalate	Not detected	ug/100cm2	80	8270	11/22/00	GCE	117-84-0	MI
Fluoranthene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	206-44-0	MI
Fluorene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	86-73-7	MI
Hexachlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	118-74-1	MI
Hexachlorobutadiene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	87-68-3	MI
Hexachlorocyclopentadiene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	77-47-4	MI
Hexachloroethane	Not detected	ug/100cm2	80	8270	11/22/00	GCE	67-72-1	MI
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	193-39-5	MI
Isophorone	Not detected	ug/100cm2	80	8270	11/22/00	GCE	78-59-1	MI
2-Methylnaphthalene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-57-6	MI
Naphthalene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	91-20-3	MI
2-Nitroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	88-74-4	MI
3-Nitroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	99-09-2	MI
4-Nitroaniline	Not detected	ug/100cm2	80	8270	11/22/00	GCE	100-01-6	MI
Nitrobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	98-95-3	MI
2-Nitrophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	88-75-5	MI
4-Nitrophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	100-02-7	MI
N-Nitrosodiphenylamine	Not detected	ug/100cm2	80	8270	11/22/00	GCE	156-10-5	MI
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	80	8270	11/22/00	GCE	621-64-7	MI
Pentachlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	87-86-5	MI
Phenanthrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	85-01-8	MI
Phenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	108-95-2	MI
Pyrene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	129-00-0	MI
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	80	8270	11/22/00	GCE	120-82-1	MI
2,4,5-Trichlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	95-95-4	MI
2,4,6-Trichlorophenol	Not detected	ug/100cm2	80	8270	11/22/00	GCE	88-06-2	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.52  
Sample Tag: 103-29  
Collected Date/Time: 11/07/2000 14:13  
Matrix: Sediment/Wipe  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	Not detected	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	38.9	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	257	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	1,250	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	91.2	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	1,000	ug/100cm2	50	6020	11/22/00	EMIL		



# Analytical Laboratory Report

Lab Sample ID: S03788.53  
Sample Tag: 103-32  
Collected Date/Time: 11/07/2000 14:51  
Matrix: Sediment/Wipe  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	38.5	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	293	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	645	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	1,170	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	179	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	4,310	ug/100cm2	50	6020	11/22/00	EMIL		



# Analytical Laboratory Report

Lab Sample ID: S03788.56

Sample Tag: 103-6

Collected Date/Time: 11/07/2000 15:30

Matrix: Sediment/Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	5.40	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	45.6	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	178	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	3,830	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	1,750	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	505	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	5,050	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
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### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	83-32-9	MI
Acenaphthylene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	208-96-8	MI
Anthracene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	120-12-7	MI
Benzo(a)anthracene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	56-55-3	MI
Benzo(b)fluoranthene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	205-99-2	MI
Benzo(k)fluoranthene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	207-08-9	MI
Benzo(ghi)perylene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	191-24-2	MI
Benzo(a)pyrene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	50-32-8	MI
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	40	8270	11/22/00	GCE	111-91-1	MI
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	40	8270	11/22/00	GCE	111-44-4	MI
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	40	8270	11/22/00	GCE	108-60-1	MI
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	40	8270	11/22/00	GCE	117-81-7	MI
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	40	8270	11/22/00	GCE	101-55-3	MI
Butyl benzyl phthalate	Not detected	ug/100cm2	40	8270	11/22/00	GCE	85-68-7	MI
4-Chloroaniline	Not detected	ug/100cm2	40	8270	11/22/00	GCE	106-47-8	MI
2-Chloronaphthalene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	91-58-7	MI
4-Chloro-3-methylphenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	59-50-7	MI
2-Chlorophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	95-57-8	MI
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	40	8270	11/22/00	GCE	7005-72-3	MI
Chrysene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	218-01-9	MI
p,m-Cresol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	106-44-5	MI
o-Cresol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	95-48-7	MI
Dibenzo(ah)anthracene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	53-70-3	MI
Dibenzofuran	Not detected	ug/100cm2	40	8270	11/22/00	GCE	132-64-9	MI
di-n-Butyl phthalate	Not detected	ug/100cm2	40	8270	11/22/00	GCE	84-74-2	MI
1,2-Dichlorobenzene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	95-50-1	MI
1,3-Dichlorobenzene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	541-73-1	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.56 (continued)  
Sample Tag: 103-6

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,4-Dichlorobenzene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	106-46-7	MI
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	40	8270	11/22/00	GCE	91-94-1	MI
2,4-Dichlorophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	120-83-2	MI
Diethyl phthalate	Not detected	ug/100cm2	40	8270	11/22/00	GCE	84-66-2	MI
2,4-Dimethylphenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	105-67-9	MI
Dimethyl phthalate	Not detected	ug/100cm2	40	8270	11/22/00	GCE	131-11-3	MI
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	534-52-1	MI
2,4-Dinitrophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	51-28-5	MI
2,4-Dinitrotoluene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	121-14-2	MI
2,6-Dinitrotoluene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	606-20-2	MI
di-n-Octyl phthalate	Not detected	ug/100cm2	40	8270	11/22/00	GCE	117-84-0	MI
Fluoranthene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	206-44-0	MI
Fluorene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	86-73-7	MI
Hexachlorobenzene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	118-74-1	MI
Hexachlorobutadiene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	87-68-3	MI
Hexachlorocyclopentadiene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	77-47-4	MI
Hexachloroethane	Not detected	ug/100cm2	40	8270	11/22/00	GCE	67-72-1	MI
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	193-39-5	MI
Isophorone	Not detected	ug/100cm2	40	8270	11/22/00	GCE	78-59-1	MI
2-Methylnaphthalene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	91-57-6	MI
Naphthalene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	91-20-3	MI
2-Nitroaniline	Not detected	ug/100cm2	40	8270	11/22/00	GCE	88-74-4	MI
3-Nitroaniline	Not detected	ug/100cm2	40	8270	11/22/00	GCE	99-09-2	MI
4-Nitroaniline	Not detected	ug/100cm2	40	8270	11/22/00	GCE	100-01-6	MI
Nitrobenzene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	98-95-3	MI
2-Nitrophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	88-75-5	MI
4-Nitrophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	100-02-7	MI
N-Nitrosodiphenylamine	Not detected	ug/100cm2	40	8270	11/22/00	GCE	156-10-5	MI
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	40	8270	11/22/00	GCE	621-64-7	MI
Pentachlorophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	87-86-5	MI
Phenanthrene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	85-01-8	MI
Phenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	108-95-2	MI
Pyrene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	129-00-0	MI
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	40	8270	11/22/00	GCE	120-82-1	MI
2,4,5-Trichlorophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	95-95-4	MI
2,4,6-Trichlorophenol	Not detected	ug/100cm2	40	8270	11/22/00	GCE	88-06-2	MI

M-Higher detection limit due to matrix interference. I-Matrix interference with an internal standard.



# Analytical Laboratory Report

Lab Sample ID: S03788.61

Sample Tag: 103.25

Collected Date/Time: 11/09/2000 08:58

Matrix: Liquid/Oil

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4 oz Glass	None	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/17/00	SG		
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### PCB List

PCB-1016	Not detected	mg/kg	3	8082	11/22/00	JANB	12674-11-2 M	
PCB-1242	Not detected	mg/kg	3	8082	11/22/00	JANB	53469-21-9 M	
PCB-1221	Not detected	mg/kg	3	8082	11/22/00	JANB	11104-28-2 M	
PCB-1232	Not detected	mg/kg	3	8082	11/22/00	JANB	11141-16-5 M	
PCB-1248	Not detected	mg/kg	3	8082	11/22/00	JANB	12672-29-6 M	
PCB-1254	Not detected	mg/kg	3	8082	11/22/00	JANB	11097-69-1 M	
PCB-1260	Not detected	mg/kg	3	8082	11/22/00	JANB	11096-82-5 M	

M-Higher detection limit due to matrix interference.



3788-01-01

OBRIEN & GERE  
ENGINEERS, INC.

\* RESULTS ONLY / LEAD 1

Job No. 64011  
27635

Sheet 1 of 5

5 DAY TAT.

Office: \_\_\_\_\_

Address: 39830 GRAND RIVER AVE, STE B-2 Novi, MI

Phone: 248.426.8970

48375

## CHAIN OF CUSTODY

\* METALS: As, Cd, Cr, Pb, Ni, Zn

RESULTS TO: BILL CLIFFORD

CLIENT: BOSCH SOUTH BEND, IN. LOCATION:				COLLECTED BY: <u>William B. Clifford</u> (Signature)		
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
01 103-14	11/9/00	920A	BULK SCRAPE	SCRAPE	1	TOTAL LEAD - METHOD 6020
02 103-15		928A				
03 103-16		931A				
04 103-17		933A				
05 103-18		935A				
06 103-19		940A				
32 103-20		125pm	GRAB	WIPE	3	TOTAL METALS - METHOD 6020 CYANIDE - 9020 SURF. 8270
33 103-21		153pm				
34 103-22		211pm				
35 103-23		216pm				
07 104-1	11/9/00	247pm	GRAB	SCRAPE	1	TOTAL LEAD - METHOD 6020
08 104-2		252pm				
09 104-3		256pm				

<sup>1</sup> Matrix = water, wastewater, air, sludge, sediment, etc.<sup>2</sup> Type = grab, composite

Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Use this space if shipped via courier (e.g., Fed Ex)	Date	Time	Courier Name: <u>FED EX</u>	Date	Time
Relinquished by: <u>William Clifford, Jr.</u>					
of: <u>036</u>	11/9/00	645P	* Attach delivery/courier receipt to Chain of Custody		
Relinquished by: <u>FED X</u>	Date	Time	Received by: <u>FECL</u>	Date	Time
of: _____	11/10	1100	of: _____	11/10	1100



\* RESULTS ONLY / LEVEL 1

Job No. 6407/27635

Sheet 2 of 5

5-DAY TAT

Office: 39830 GRAND RIVER AVENUE STE B-2

Address: Novi, MI 48375

Phone: 248.426.8970

### CHAIN OF CUSTODY

RESULTS TO: BILL CLIFFORD

\* METALS: AS Cd, Cr, Pb, Ni, Zn

CLIENT: BOSCH SOUTH BEND, IN		COLLECTED BY: [Signature]				
LOCATION:		(Signature)				
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
10 104-4	11/8/00	3:11pm	GRAB (PAINT CHIP)	SCRAPE	1	TOTAL LEAD - METHOD 6020
11 104-5		3:14pm				
12 104-6		3:26pm				
13 104-7		3:34pm				
14 101-01		6:01pm	GRAB (PAINT)	SCRAPE	1	TOTAL LEAD - METHOD 6020
15 101-02		6:05pm	SEDIMENT	WIPE		PCBS - METHOD 8082
16 101-03		6:57pm		SCRAPE		TOTAL LEAD - METHOD 6020
103-04		7:08pm		SCRAPE		
103-1	11/7/00	2:35pm	SLUDGE	GRAB	1	PCBS - METHOD 8082
103-2		2:42pm			1	
103-3		2:55pm	SEDIMENT		3	METALS* - METHOD 6020 CYANIDE - 9020, SW-LS-8270
103-4		3:10pm			3	
103-5		3:20pm			3	

<sup>1</sup> Matrix = water, wastewater, air, sludge, sediment, etc.

<sup>2</sup> Type = grab, composite

Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Use this space if shipped via courier (e.g., Fed Ex)	Date	Time	Courier Name: <u>FED EX</u>	Date	Time
Relinquished by: <u>William Clifford</u>					
of: <u>OBG</u>	11/9/00	6:15pm	* Attach delivery/courier receipt to Chain of Custody		
Relinquished by: <u>FEDX</u>	Date	Time	Received by: <u>[Signature]</u>	Date	Time
of: _____	11/10	11:00	of: <u>FECL</u>	11/10	11:00

1-61



**OBRIEN & GERE**  
ENGINEERS, INC.

① LEVEL 1 / RESULTS ONLY  
② 5-DAY TAT

Job No. 6407/27635  
Sheet 3 of 5

Office: 39830 GRAND RIVER AVE. STE. B-2  
Address: Novi MI 48375  
Phone: 248.426.8970

**CHAIN OF CUSTODY**

RESULTS TO: BILL CLIFFORD

\*METALS: AS, Cd, Cr, Pb, Ni, Zn

CLIENT: <u>BOSCH, SOUTH BEND, IN.</u>			COLLECTED BY: <u>William B. Clifford</u>			
LOCATION:			(Signature)			
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
103-6	11/7/03	3:30pm	SEDIMENT	Wipe	3	SUES- 8270, CYANIDE-9030 METALS X-6020
100-1		4:10pm	PAINT CHIP	GRAB	1	TOTAL LEAD- 6020
100-2		4:25pm				
100-3		4:30pm				
100-4		5:35pm				
100-5		6:40pm	SLUDGE	WIPE	1	PCBS- METHOD 8082
100-6		7:30pm	SLUDGE	WIPE	1	
103-7	11/8/03	8:43AM	PAINT CHIP	GRAB		TOTAL LEAD- 6020
103-8		8:51AM				
103-9		8:53AM				
103-10		8:57AM				
103-11		9:01AM				
103-12		9:07AM				

<sup>1</sup> Matrix = water, wastewater, air, sludge, sediment, etc.  
<sup>2</sup> Type = grab, composite

Relinquished by: _____	Date	Time	Received by: _____	Date	Time		
of: _____			of: _____				
Relinquished by: _____	Date	Time	Received by: _____	Date	Time		
of: _____			of: _____				
Relinquished by: _____	Date	Time	Received by: _____	Date	Time		
of: _____			of: _____				
Use this space if shipped via courier (e.g., Fed Ex)			Date	Time	Date	Time	
Relinquished by: <u>William Clifford</u>							
of: <u>OBG</u>			11/10	6:45pm	*Attach delivery/courier receipt to Chain of Custody		
Relinquished by: <u>FED X</u>			Date	Time	Received by: _____	Date	Time
of: _____			11/10	11:00	of: <u>FEC L</u>	11/10	11:00



\* RESULTS ONLY / 11/10/02  
50 Ag TAT.

Job No. 6407/27635  
Sheet 4 of 5

Office: 39830 GRAND RIVER AVE. STE B-2

Address: Novi MI 48375

Phone: 248.426.8970

### CHAIN OF CUSTODY

RESULTS TO: BILL CLIFFORD

\* METALS: AS, CD, CR, PD, NI, ZN

CLIENT: BOSCH SOUTH BEND IN		COLLECTED BY: William B. Clifford				
LOCATION:		(Signature)				
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
103-13	11/4/02	9:30 AM	PAINTCHIP	SCRAPE	1	TOTAL LEAD - 6020
103-24	11/4/02	8:50 AM	SEDIMENT	WIPE	1	PCBS - 8082
103-25		8:58 AM	LIQUID (oil)	GRAIN	1	PCBS - 8082
103-26		12:31 PM	PAINTCHIP	SCRAPE	1	TOTAL LEAD - 6020
103-27		12:54 PM	"	"	"	"
103-28		2:04 PM	SEDIMENT	WIPE	1	PCBS - 8082
103-29		2:13 PM	SEDIMENT		1	TOTAL METALS* - 6020
103-30		2:30 PM				PCBS - 8082
103-31		2:34 PM				"
103-32		2:51 PM				TOTAL METALS* - 6020
103-33		3:02 PM				PCBS - 8082
103-34		3:21 PM				
103-35		3:51 PM				

<sup>1</sup> Matrix = water, wastewater, air, sludge, sediment, etc.

<sup>2</sup> Type = grab, composite

Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Use this space if shipped via courier (e.g., Fed Ex)	Date	Time	Courier Name: FED EX	Date	Time
Relinquished by: William Clifford	11/4/02	6:45 PM	* Attach delivery/courier receipt to Chain of Custody		
of: 0736					
Relinquished by: FCDY	Date	Time	Received by: [Signature]	Date	Time
of: _____			of: FECL	11/10	11:00



\* RESULTS ONLY  
5-DAY TAT

Job No. 6407/27635  
Sheet 5 of 5

Office: 34830 GRAND RIVER AVE, STE B-2

Address: Novi, MI 48375

Phone: 248.426.8970

### CHAIN OF CUSTODY

RESULTS TO: Bill Clifford

\* METALS: As, Cd, Cr, Pb, Ni, Zn

CLIENT:			COLLECTED BY: <u>William Clifford</u>			
LOCATION:			(Signature)			
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
104-08	11/9/02	9:55A	SEDIMENT	GRAB	1	PCBS-8082
104-09		10:00A	PAINTCHIP	SCRAPE	1	TOTAL LEAD - 6030
104-10		10:31A	SEDIMENT	WIPE	1	PCBS-8082
104-11		10:39A	"	"	1	"
104-12		1:30P	PAINTCHIP	SCRAPE	1	TOTAL LEAD - 6030
104-13		3:11P	WOOD	GRAB	1	PCBS-8082
104-14		3:22P	WOOD	GRAB	1	PCBS-8082
104-15		3:30P	"	"	1	"
DUP-1	11/7/02	-	SEDIMENT	GRAB	1	TOTAL METALS 6030 <del>10000</del>
DUP-2	11/7/02	-	SEDIMENT	GRAB	1	TOTAL METALS 6030 <del>10000</del>

<sup>1</sup> Matrix = water, wastewater, air, sludge, sediment, etc.

<sup>2</sup> Type = grab, composite

Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Use this space if shipped via courier (e.g., Fed Ex)	Date	Time	Courier Name: <u>FED Ex</u>	Date	Time
Relinquished by: <u>William Clifford</u>	11/9/02	6:55pm	of: _____		
of: <u>0136</u>			* Attach delivery/courier receipt to Chain of Custody		
Relinquished by: <u>FED X</u>	Date	Time	Received by: <u>FECL</u>	Date	Time
of: _____	11/10	11:00	of: _____	11/10	11:00



# Analytical Laboratory Report

Report ID: S03803.01(01)  
Generated on 11/28/2000

## Report to

Attention: Mr. Bill Clifford  
O'Brien & Gere Inc. of North America  
39830 Grand River A, Suite B2  
Novi, MI 48375

Phone: 248-426-8970 FAX: 248-426-8997

## Report produced by

Fire & Environmental Consulting Laboratories  
1451 East Lansing Drive, Suite 222  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

## Report Summary

Lab Sample ID(s): S03803.01-S03803.18  
Project: Bosch South Bend, In. 6407/27635  
Submitted Date/Time: 11/13/2000 09:30  
Sampled by: WC  
P.O. #:

## Report Notes

Methods may be modified for improved performance.  
Results reported on a dry weight basis where applicable.  
Results relate only to items tested.  
Report shall not be reproduced except in full, without the written approval of FECL.

*Violetta F. Murshak*

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

Lab Sample ID: S03803.01

Sample Tag: 103-36

Collected Date/Time: 11/10/2000 07:54

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	2,130	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	



# Analytical Laboratory Report

Lab Sample ID: S03803.02

Sample Tag: 103-37

Collected Date/Time: 11/10/2000 07:56

Matrix: Paint Chip

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	whirlpak	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Metals</b>								
Digestion	Completed			varies	11/20/00	EMIL		
Lead	2,570	mg/kg	1.0	6020	11/21/00	EMIL	7439-92-1	





# Analytical Laboratory Report

Lab Sample ID: S03803.04  
Sample Tag: 103-T1  
Collected Date/Time: 11/10/2000 08:19  
Matrix: Oil  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/20/00	JKB		
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### PCB List

PCB-1016	Not detected	mg/kg	3	8082	11/22/00	JANB	12674-11-2	
PCB-1242	Not detected	mg/kg	3	8082	11/22/00	JANB	53469-21-9	
PCB-1221	Not detected	mg/kg	3	8082	11/22/00	JANB	11104-28-2	
PCB-1232	Not detected	mg/kg	3	8082	11/22/00	JANB	11141-16-5	
PCB-1248	Not detected	mg/kg	3	8082	11/22/00	JANB	12672-29-6	
PCB-1254	Not detected	mg/kg	3	8082	11/22/00	JANB	11097-69-1	
PCB-1260	16	mg/kg	3	8082	11/22/00	JANB	11096-82-5	



# Analytical Laboratory Report

Lab Sample ID: S03803.05

Sample Tag: 103-T2

Collected Date/Time: 11/10/2000 08:21

Matrix: Oil

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/20/00	JKB		
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### PCB List

PCB-1016	Not detected	mg/kg	3	8082	11/22/00	JANB	12674-11-2	
PCB-1242	Not detected	mg/kg	3	8082	11/22/00	JANB	53469-21-9	
PCB-1221	Not detected	mg/kg	3	8082	11/22/00	JANB	11104-28-2	
PCB-1232	Not detected	mg/kg	3	8082	11/22/00	JANB	11141-16-5	
PCB-1248	Not detected	mg/kg	3	8082	11/22/00	JANB	12672-29-6	
PCB-1254	Not detected	mg/kg	3	8082	11/22/00	JANB	11097-69-1	
PCB-1260	15	mg/kg	3	8082	11/22/00	JANB	11096-82-5	



# Analytical Laboratory Report

Lab Sample ID: S03803.06

Sample Tag: 103-T3

Collected Date/Time: 11/10/2000 08:22

Matrix: Oil

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/20/00	JKB		
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## PCB List

PCB-1016	Not detected	mg/kg	3	8082	11/22/00	JANB	12674-11-2	
PCB-1242	Not detected	mg/kg	3	8082	11/22/00	JANB	53469-21-9	
PCB-1221	Not detected	mg/kg	3	8082	11/22/00	JANB	11104-28-2	
PCB-1232	Not detected	mg/kg	3	8082	11/22/00	JANB	11141-16-5	
PCB-1248	Not detected	mg/kg	3	8082	11/22/00	JANB	12672-29-6	
PCB-1254	Not detected	mg/kg	3	8082	11/22/00	JANB	11097-69-1	
PCB-1260	14	mg/kg	3	8082	11/22/00	JANB	11096-82-5	



# Analytical Laboratory Report

Lab Sample ID: S03803.07

Sample Tag: 103-T4

Collected Date/Time: 11/10/2000 08:26

Matrix: Oil

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/20/00	JKB		
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## PCB List

PCB-1016	Not detected	mg/kg	9	8082	11/22/00	JANB	12674-11-2	
PCB-1242	Not detected	mg/kg	9	8082	11/22/00	JANB	53469-21-9	
PCB-1221	Not detected	mg/kg	9	8082	11/22/00	JANB	11104-28-2	
PCB-1232	Not detected	mg/kg	9	8082	11/22/00	JANB	11141-16-5	
PCB-1248	Not detected	mg/kg	9	8082	11/22/00	JANB	12672-29-6	
PCB-1254	Not detected	mg/kg	9	8082	11/22/00	JANB	11097-69-1	
PCB-1260	32	mg/kg	9	8082	11/22/00	JANB	11096-82-5	



# Analytical Laboratory Report

Lab Sample ID: S03803.08

Sample Tag: 103-T6

Collected Date/Time: 11/10/2000 08:29

Matrix: Oil

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/20/00	JKB		
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### PCB List

PCB-1016	Not detected	mg/kg	3	8082	11/22/00	JANB	12674-11-2	
PCB-1242	Not detected	mg/kg	3	8082	11/22/00	JANB	53469-21-9	
PCB-1221	Not detected	mg/kg	3	8082	11/22/00	JANB	11104-28-2	
PCB-1232	Not detected	mg/kg	3	8082	11/22/00	JANB	11141-16-5	
PCB-1248	Not detected	mg/kg	3	8082	11/22/00	JANB	12672-29-6	
PCB-1254	Not detected	mg/kg	3	8082	11/22/00	JANB	11097-69-1	
PCB-1260	15	mg/kg	3	8082	11/22/00	JANB	11096-82-5	



## Analytical Laboratory Report

Lab Sample ID: S03803.10

Sample Tag: 103-39

Collected Date/Time: 11/10/2000 10:30

Matrix: Oil

COC Reference:

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Miscellaneous</b>								
No Analyses	Completed				11/15/00	PFQ		



# Analytical Laboratory Report

Lab Sample ID: S03803.12  
Sample Tag: 103-40  
Collected Date/Time: 11/10/2000 11:39  
Matrix: Oil  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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## PCB Swab List

PCB-1016	Not detected	ug/100cm2	2	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	2	8082	11/20/00	JANB	53469-21-9	
PCB-1248	Not detected	ug/100cm2	2	8082	11/20/00	JANB	12672-29-6	
PCB-1254	3.6	ug/100cm2	2	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	2	8082	11/20/00	JANB	11096-82-5	T

T-Trace amount of analyte detected below the MDL.



# Analytical Laboratory Report

Lab Sample ID: S03803.13  
Sample Tag: 103-41  
Collected Date/Time: 11/10/2000 12:00  
Matrix: Wipes  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
4	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Inorganics

Cyanide, wipe	3.20	ug/100cm2	0.10	9010	11/21/00	JDP		
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### Metals

Digestion	Completed			varies	11/22/00	EMIL		
Arsenic, wipe	25.0	ug/100cm2	10	6020	11/22/00	EMIL		
Cadmium, wipe	132	ug/100cm2	5.0	6020	11/22/00	EMIL		
Chromium, wipe	3,980	ug/100cm2	50	6020	11/22/00	EMIL		
Lead, wipe	1,590	ug/100cm2	30	6020	11/22/00	EMIL		
Nickel, wipe	2,440	ug/100cm2	50	6020	11/22/00	EMIL		
Zinc, wipe	14,800	ug/100cm2	50	6020	11/22/00	EMIL		

### Organics

BNA Extraction	Completed			3550	11/17/00	SG		
Extraction, PCB	Completed			3550	11/15/00	JKB		

### GC/MS for Semi-Volatile Organic Wipes

Acenaphthene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	83-32-9	M
Acenaphthylene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	208-96-8	M
Anthracene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	120-12-7	M
Benzo(a)anthracene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	56-55-3	M
Benzo(b)fluoranthene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	205-99-2	M
Benzo(k)fluoranthene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	207-08-9	M
Benzo(ghi)perylene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	191-24-2	M
Benzo(a)pyrene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	50-32-8	M
bis(2-Chloroethoxy)methane	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	111-91-1	M
bis(2-Chloroethyl)ether	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	111-44-4	M
bis(2-Chloroisopropyl)ether	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	108-60-1	M
bis(2-Ethylhexyl)phthalate	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	117-81-7	M
4-Bromophenyl phenyl ether	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	101-55-3	M
Butyl benzyl phthalate	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	85-68-7	M
4-Chloroaniline	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	106-47-8	M
2-Chloronaphthalene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	91-58-7	M
4-Chloro-3-methylphenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	59-50-7	M
2-Chlorophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	95-57-8	M
4-Chlorophenyl phenyl ether	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	7005-72-3	M
Chrysene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	218-01-9	M
p,m-Cresol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	106-44-5	M
o-Cresol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	95-48-7	M
Dibenzo(ah)anthracene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	53-70-3	M
Dibenzofuran	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	132-64-9	M
di-n-Butyl phthalate	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	84-74-2	M
1,2-Dichlorobenzene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	95-50-1	M

M-Higher detection limit due to matrix interference.





# Analytical Laboratory Report

Lab Sample ID: S03803.13 (continued)

Sample Tag: 103-41

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
<b>Organics (continued)</b>								
<b>GC/MS for Semi-Volatile Organic Wipes (continued)</b>								
1,3-Dichlorobenzene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	541-73-1	M
1,4-Dichlorobenzene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	106-46-7	M
3,3'-Dichlorobenzidine	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	91-94-1	M
2,4-Dichlorophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	120-83-2	M
Diethyl phthalate	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	84-66-2	M
2,4-Dimethylphenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	105-67-9	M
Dimethyl phthalate	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	131-11-3	M
4,6-Dinitro-2-methylphenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	534-52-1	M
2,4-Dinitrophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	51-28-5	M
2,4-Dinitrotoluene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	121-14-2	M
2,6-Dinitrotoluene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	606-20-2	M
di-n-Octyl phthalate	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	117-84-0	M
Fluoranthene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	206-44-0	M
Fluorene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	86-73-7	M
Hexachlorobenzene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	118-74-1	M
Hexachlorobutadiene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	87-68-3	M
Hexachlorocyclopentadiene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	77-47-4	M
Hexachloroethane	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	67-72-1	M
Indeno(1,2,3-cd)pyrene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	193-39-5	M
Isophorone	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	78-59-1	M
2-Methylnaphthalene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	91-57-6	M
Naphthalene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	91-20-3	M
2-Nitroaniline	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	88-74-4	M
3-Nitroaniline	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	99-09-2	M
4-Nitroaniline	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	100-01-6	M
Nitrobenzene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	98-95-3	M
2-Nitrophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	88-75-5	M
4-Nitrophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	100-02-7	M
N-Nitrosodiphenylamine	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	156-10-5	M
N-Nitrosodi-n-propylamine	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	621-64-7	M
Pentachlorophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	87-86-5	M
Phenanthrene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	85-01-8	M
Phenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	108-95-2	M
Pyrene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	129-00-0	M
1,2,4-Trichlorobenzene	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	120-82-1	M
2,4,5-Trichlorophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	95-95-4	M
2,4,6-Trichlorophenol	Not detected	ug/100cm2	1600	8270	11/22/00	GCE	88-06-2	M

## PCB Swab List

PCB-1016	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12674-11-2
PCB-1221	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11104-28-2
PCB-1232	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11141-16-5
PCB-1242	Not detected	ug/100cm2	1	8082	11/20/00	JANB	53469-21-9
PCB-1248	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12672-29-6
PCB-1254	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11097-69-1
PCB-1260	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11096-82-5

M-Higher detection limit due to matrix interference.



# Analytical Laboratory Report

Lab Sample ID: S03803.14  
Sample Tag: 103-42  
Collected Date/Time: 11/10/2000 12:25  
Matrix: Sediment Wipe  
COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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## Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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## PCB Swab List

PCB-1016	Not detected	ug/100cm2	20	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	20	8082	11/20/00	JANB	53469-21-9	
PCB-1248	Not detected	ug/100cm2	20	8082	11/20/00	JANB	12672-29-6	
PCB-1254	90	ug/100cm2	20	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	20	8082	11/20/00	JANB	11096-82-5 T	

T-Trace amount of analyte detected below the MDL.



# Analytical Laboratory Report

Lab Sample ID: S03803.15

Sample Tag: 103-43

Collected Date/Time: 11/10/2000 12:12

Matrix: Sediment Wipe

COC Reference:

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	none	Yes	RT	No Ice

Analysis	Results	Units	MDL	Method	Date Run	Analyst	CAS #	Flags
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### Organics

Extraction, PCB	Completed			3550	11/15/00	JKB		
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### PCB Swab List

PCB-1016	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12674-11-2	
PCB-1221	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11104-28-2	
PCB-1232	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11141-16-5	
PCB-1242	Not detected	ug/100cm2	1	8082	11/20/00	JANB	53469-21-9	
PCB-1248	Not detected	ug/100cm2	1	8082	11/20/00	JANB	12672-29-6	
PCB-1254	2	ug/100cm2	1	8082	11/20/00	JANB	11097-69-1	
PCB-1260	Not detected	ug/100cm2	1	8082	11/20/00	JANB	11096-82-5	T

T-Trace amount of analyte detected below the MDL.



\* RESULTS ONLY / LEAD 1  
5-DAG-TAT

Job No. 6407/27635  
Sheet 1 of 2

Office: 34830 GRAND RIVER AVE STE. B-2

Address: Novi, MI 48375

Phone: 248.426.8970

### CHAIN OF CUSTODY

RESULTS TO: BILL CLIFFORD

\* METALS: AS, Cd, Cr, Pb, Ni, Zn

CLIENT:	COLLECTED BY:					
LOCATION:	(Signature)					
<u>BOSCH SOUTH BEND, IN</u>	<u>William Clifford</u>					
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
103-36	11/10/02	754A	PAINT CHIP	GRAB	1	TOTAL LEAD - 6020
103-37		756A	↓	↓		↓
104-17		814A	SEDIMENT	WIPE		CYANIDE - 9020
103-T1		814AM	GIL	GRAB		PCB - 8082
103-T2		821AM				
103-T3		822A				
103-T4		826A				
103-T6		829A	↓	↓		↓
104-16		946A	SEDIMENT	WIPE		PCB - 8082
103-39 Broken		1030A				
104-18 Broken		1044A				
103-40		1139A				
103-41		1200P	↓	↓	4	PCB 8082, METALS 6020 SWC-870 CYANIDE-9020

*This sample 100% different than 10/11/02*  
Matrix = water, wastewater, air, sludge, sediment, etc.  
Type = grab, composite

Relinquished by: _____ of: _____	Date _____ Time _____	Received by: _____ of: _____	Date _____ Time _____
Relinquished by: _____ of: _____	Date _____ Time _____	Received by: _____ of: _____	Date _____ Time _____
Relinquished by: _____ of: _____	Date _____ Time _____	Received by: _____ of: _____	Date _____ Time _____
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: <u>William Clifford</u> of: <u>OBG</u>	Date <u>11/10/02</u> Time <u>245pm</u>	Courier Name: <u>FEDEX</u> * Attach delivery/courier receipt to Chain of Custody	Date _____ Time _____
Relinquished by: <u>FEDX</u> of: _____	Date _____ Time _____	Received by: <u>FEDX</u> of: _____	Date <u>11/10/02</u> Time <u>930</u>



RESULTS ONLY / LEVEL 1  
5-DAY TAT

Job No. 6407/27635

Sheet 2 of 2

Office: 39830 GRAND RIVER AVE. STE. B-2

Address: NW1 MI 48375

Phone: 248-426 8970

### CHAIN OF CUSTODY

Results TO: Bill Clifford

CLIENT: BOSCH SOUTH BEND, IN		COLLECTED BY: <i>William Bosch</i>				
LOCATION:		(Signature)				
SAMPLE DESCRIPTION	Date	Time	Sample Matrix <sup>1</sup>	Sample Type <sup>2</sup>	No. of Containers	ANALYSIS REQUESTED
103-42	11/10/00	12:50P	SEDIMENT	WIPE	1	PICB - 8082
103-43	6	12:12P	L	L	1	L
16 Dup 3						TOTAL Lead
17 Dup 4						TOTAL Lead
Net on POC						
103-41 cancel	11/10	11:50				
104-8						TOTAL Lead
104-20						

<sup>1</sup> Matrix = water, wastewater, air, sludge, sediment, etc.

<sup>2</sup> Type = grab, composite

Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Relinquished by: _____	Date	Time	Received by: _____	Date	Time
of: _____			of: _____		
Use this space if shipped via courier (e.g. Fed Ex)	Date	Time	Courier Name: <i>FED EX</i>	Date	Time
Relinquished by: <i>WILLIAM CLIFFORD</i>	11/10/00	2:45P	Attach delivery/courier receipt to Chain of Custody		
of: <i>OBG</i>					
Relinquished by: <i>FED X</i>	Date	Time	Received by: <i>William Bosch</i>	Date	Time
of: _____			of: <i>FELL</i>	11/13/00	