April 16, 1999

Mr. Ray White
AlliedSignal, Inc
717 N. Bendix Drive
South Bend, IN 46620

Subject: Report: Plant 9 North Parking Lot Investigation
AlliedSignal Industrial Complex, South Bend, Indiana
Project No. 9822-14

Dear Mr. White:

Harding Lawson Associates (HLA) conducted a subsurface soil investigation along the north side of Plant 9 at the AlliedSignal Industrial Complex, South Bend, Indiana. The investigation, which is described in this letter, was conducted to assess whether volatile organic compounds (VOCs) or polychlorinated biphenyls (PCBs) are present in concrete, asphalt or subsurface soils near extraction well EW-3.

BACKGROUND INFORMATION

A sanitary sewer line was damaged during the installation of extraction well EW-3 along the north side of Plant 9. As a results, an area approximately 10-feet wide by 10-feet long by 2-feet deep was excavated to allow for repair of the sanitary line. Excavated soils were containerized. Upon completion of the sanitary line repairs, the excavation was backfilled with clean sand and capped with concrete.

Laboratory analytical results for the composite samples of concrete, asphalt, and soil removed from the excavation indicated total PCBs concentrations ranging from 3.66 milligrams per kilogram (mg/kg) to 308 mg/kg. The highest PCB concentrations were detected in the asphalt/concrete debris samples (308 mg/kg). The source of the PCBs is unknown. Also, tetrachloroethene (PCE) was detected at 0.079 milligrams per liter (mg/l) in extract from a Toxicity Characteristic Leaching Procedure test conducted to characterize the soil for disposal. The PCE detection indicated the potential for the presence of VOCs in the soil.

PROJECT OBJECTIVES

The objectives of the subsurface investigation were to:

- Assess whether PCBs and VOCs are present in the native soil beneath the area where the asphalt, concrete, and soil were excavated (i.e., below the depths at which the soils were removed);
- Assess whether PCBs and VOCs are present in the asphalt, concrete, and soil immediately adjacent to the area of excavation.

Engineering and
Environmental Services
39255 Country Club Drive, Suite B25, Farmington Hills, MI 48331 248/489-8040 Fax: 248/489-8048

FIELD ACTIVITIES

Samples were collected from the five locations shown on the attached figure. At those locations where concrete was present (SB-1, SB-3, SB-4 and SB-5), a 4-inch-diameter coring machine was used to advance through the asphalt/concrete. Concrete samples from SB-3, SB-4 and SB-5, which are located adjacent to the area where concrete and soil were removed during installation of well EW-3, were submitted for laboratory analysis of PCBs. Concrete from SB-1 was not submitted for laboratory analysis because the concrete was poured during installation of the well.

Soil samples were then collected from beneath the concrete using a stainless-steel hand auger. The hand auger was washed with a solution of LiquiNox and distilled water between borings and before each sample interval was collected. Soil sample intervals were screened with a photoionization (PI) meter for the presence of VOCs by placing a portion of the soil into a Ziplock bag, allowing the sample to warm up, then measuring the headspace of the bag with the PI meter.

At location SB-1, a soil sample was collected from 3-4 feet below ground surface (bgs). This sample was collected in the native soil below the depth of excavation during repair of the sanitary sewer. At the remaining four locations (SB-2 through SB-5), soil samples were collected from 1-2 feet bgs (just below the asphalt/concrete, where present), 2-4 feet bgs, and 5-7 feet bgs.

The three asphalt/concrete samples from borings SB-3, SB-4 and SB-5 (note that SB-2 is located in a grassy area), the soil sample from SB-1 (3-4 foot interval), and the four soil samples from the 1-2 foot interval at borings SB-2 through SB-5 were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan for laboratory analysis. These samples were analyzed for PCBs by U.S. Environmental Protection Agency (USEPA) Method 8080. The four soil samples from the 1-2 foot interval at borings SB-2 through SB-5 were also analyzed for VOCs by USEPA Method 8260 due to elevated PI meter readings. This analysis includes the volatile constituents of gasoline, paint solvents, stoddard and naphtha, and typical industrial degreasers.

Following the sampling activities, the boreholes were backfilled with soil cuttings mixed with granular bentonite and capped with concrete (where present). Soil boring logs/sample records are provided in Appendix A. The logs detail the soil descriptions, sampling intervals and PI meter results. The sampling and analytical procedures were consistent with the Quality Assurance Project Plan (QAPP) already established for the site.

RESULTS

The concrete in the area of evaluation ranged from 8-inches to 9-inches thick. Subsurface soils consisted of fine to coarse sand with trace gravel and trace to moderate amounts of silt. Black staining was noted in the upper two-foot interval at boring GP-03. Soils at the other borings were predominantly tan, with some dark brown soils noted.

Laboratory analytical reports are provided in Appendix B. No PCBs were detected in any of the concrete or soil samples. Because these sample intervals were non-detectable for PCBs, the lower sample intervals were not submitted for laboratory analysis.

PI meter readings ranged from 12 part per million (ppm) to over 1,000 ppm. The 1-2 foot sample intervals from each boring were submitted for laboratory analysis of VOCs because their PI meter readings were near the highest from each boring. No VOCs were detected in any of the samples submitted for laboratory analysis.

CONCLUSIONS

The laboratory analytical results indicate that the PCBs in concrete and/or underlying soils was localized to the area of the sewer line, and was removed and properly disposed during the sewer line repair. No VOCs were detected in soil indicating that VOC-impacted soil was also removed during the sewer line repair.

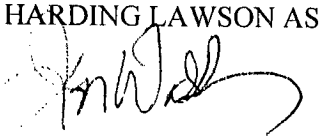
Elevated PI meter readings were highest at boring location SB-4. This location is adjacent to the existing sewer line. PI meter readings may be related to hydrogen sulfide or other gases typically found in sewer lines. Of note, the ionization potential for hydrogen sulfide is 10.46 eV and a 10.6 eV lamp was used in the PI meter (indicating that the PI meter could detect hydrogen sulfide, if present).

* * * * *

If you have any questions regarding this information or any other matter, please contact me at (248) 489-8040 extension 3025.

Sincerely,

HARDING LAWSON ASSOCIATES



Donald A. Walsh, CPG
Senior Project Manager

attachments

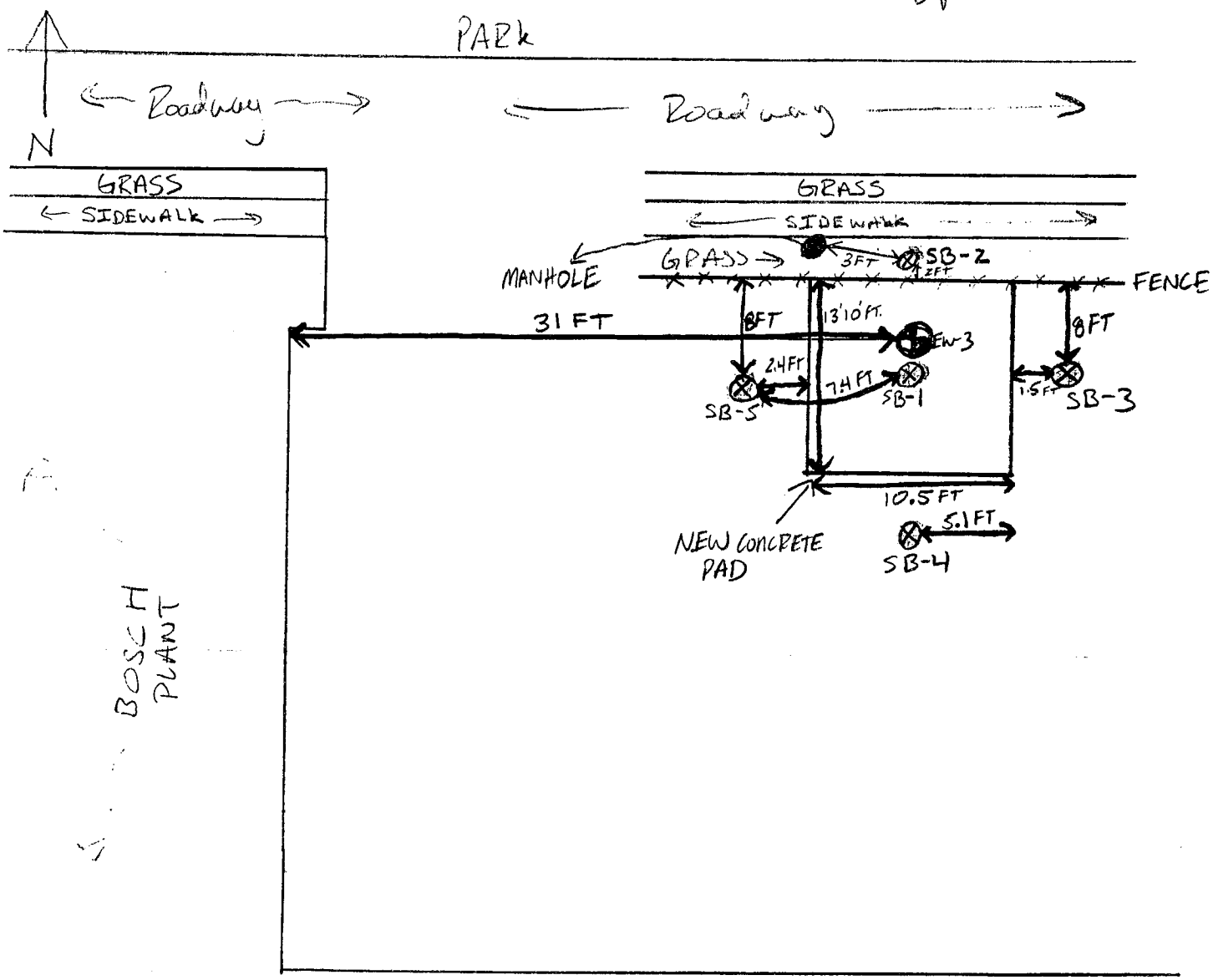
FIG. #1

Harding Lawson Associates

Engineering
and
Environmental Services

SHEET 1 OF 1
JOB NO. 2452.02
DATE 5-31-99
COMPUTED BY
CHECKED BY

PROJECT Plant 9 Investigation
SUBJECT Proposed SAMPLING LOCATIONS



⊗ - Soil boring (SB-1-5)

⊗ - EW-3

⟷ - DISTANCE MARKER

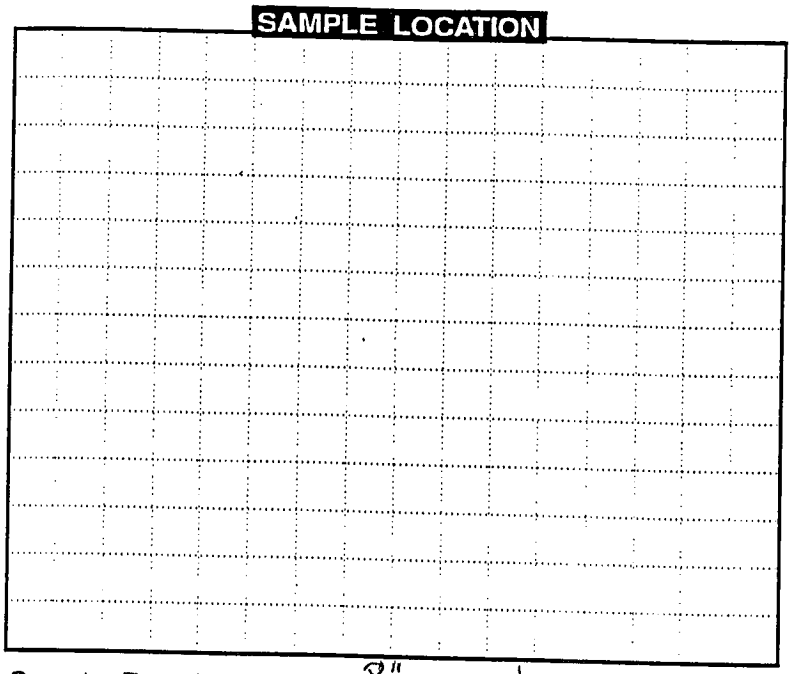
Scale - 1"

ATTACHMENT A

Soil Boring Logs/Sample Records

SAMPLE RECORD

SAMPLE LOCATION



SAMPLE NO. SB-1

Date Collected 3/2/99

Sample Time 1510 (3-4')

Site Name Allied Signal Plant 9

Job Number 4822-14

Weather 30s, overcast

SAMPLE TYPE

WATER	SOIL	GRAB	COMPOSITE
☐	☒	☒	☐

OTHER concrete

PID METER USED Rae

AMBIENT 0 PPM

SAMPLE ____ PPM

HEADSPACE ____ PPM

Sample Description/Notes 8" concrete

0-3': Sand, fine-medium, trace gravel, brown, moist, moderately graded.

3-4': Sand as above, little gravel, gray

Sample SB-1 (3-4')

PID of 3-4' = 179 ppm

SAMPLING CREW

P. Kaczor

Sampling/Decon Equipment Used

Stainless-steel hand auger, bowl & spoon.

Decon with Liquinox and distilled water.

ANALYTICAL PARAMETERS

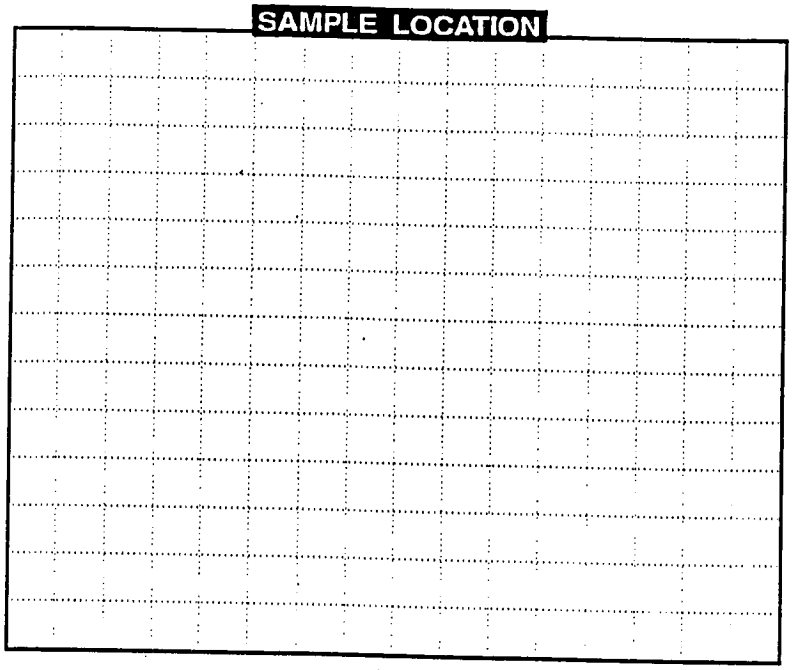
ANALYSIS	METHOD	NUMBER OF BOTTLES, VOLUME, AND TYPE	BOTTLE LOT	PRESERVATIVE	COOL TO 4°C?
PCB	8080	1 40z clear glass	—	—	(Y) N
VOC	8260	1 40z clear glass	—	—	(Y) N
					Y N
					Y N
					Y N

NAME (Print) Peter Kaczor SIGNATURE

NOTES: 1. Include angle and distance from permanent marker, sample depth, and, for sediments, height of overlying water column.
2. Include soil type, gradation or plasticity, consistency, moisture, color, structure, USCS symbol, and other relevant observations.

SAMPLE RECORD

SAMPLE LOCATION



SAMPLE NO. SB-2

Date Collected 3/2/99

Sample Time 1901 ~~(1-2')~~ (0-1')

Site Name Allied Signal Plant 9

Job Number 4822-14

Weather 30s, overcast

SAMPLE TYPE

WATER	SOIL	GRAB	COMPOSITE
☐	☒	☒	☐

OTHER Concrete

PID METER USED Rae

AMBIENT 0 PPM

SAMPLE _____ PPM

HEADSPACE _____ PPM

Sample Description/Notes Grassy area

0-2.5': Sand, trace clay, fine-medium grained, p.graded, brown.

2.5-3.3': Clay, trace sand & gravel, firm, plastic, damp, gray-brown.

3.3-7': Sand, fine-medium, trace gravel, little silt, brown, SP.

1901 hrs collect SB-2 (0-1'), PID=38 ppm

1904 hrs collect SB-2 (2-4'), PID=66 ppm

1912 hrs collect SB-2 (5-7'), PID=25 ppm

SAMPLING CREW

P. Kaczor

Sampling/Decon Equipment Used

Stainless-steel hand auger, bowl & spoon.

Decon with Liquinox and distilled water.

ANALYTICAL PARAMETERS

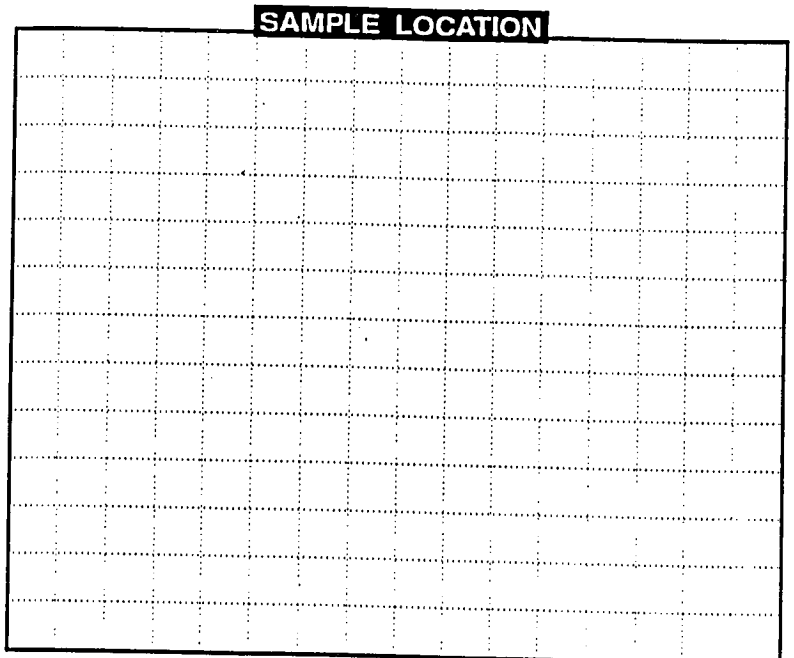
ANALYSIS	METHOD	NUMBER OF BOTTLES, VOLUME, AND TYPE	BOTTLE LOT	PRESERVATIVE	COOL TO 4°C?
PCB	8080	1 40z clear glass	—	—	(Y) N
VOC	8260	1 40z clear glass	—	—	(Y) N
					Y N
					Y N
					Y N

NAME (Print) Peter Kaczor SIGNATURE

NOTES: 1. Include angle and distance from permanent marker, sample depth, and, for sediments, height of overlying water column.
2. Include soil type, gradation or plasticity, consistency, moisture, color, structure, USCS symbol, and other relevant observations.

SAMPLE RECORD

SAMPLE LOCATION



SAMPLE NO. SB-3

Date Collected 3/2/99

Sample Time 1640 (1-2')

Site Name Allied Signal Plant 9

Job Number 9822-14

Weather 30s, overcast

SAMPLE TYPE

WATER	SOIL	GRAB	COMPOSITE
☐	☒	☒	☐

OTHER concrete

PID METER USED Rae

AMBIENT 0 PPM

SAMPLE ____ PPM

HEADSPACE ____ PPM

Sample Description/Notes 2.5" asphalt, 6.5" concrete

1-2.5': Sand, some clay, fine to medium, poorly graded, moist, black/gray

2.5-2.8': clay, firm, plastic, damp, gray-brown.

2.8-4': sand, fine to medium, trace gravel, little silt, dark brown.

4-7': sand, light brown.

1640 hrs collect SB-3 (1-2'), PID = 141 ppm

1644 hrs collect SB-3 (2-4'), PID = 9.9 ppm

1700 hrs collect SB-3 (5-7'), PID = 43 ppm

SAMPLING CREW

P. Kaczor

Sampling/Decon Equipment Used

Stainless-steel hand auger, bowl & spoon.

Decon with Liquinox and distilled water.

ANALYTICAL PARAMETERS

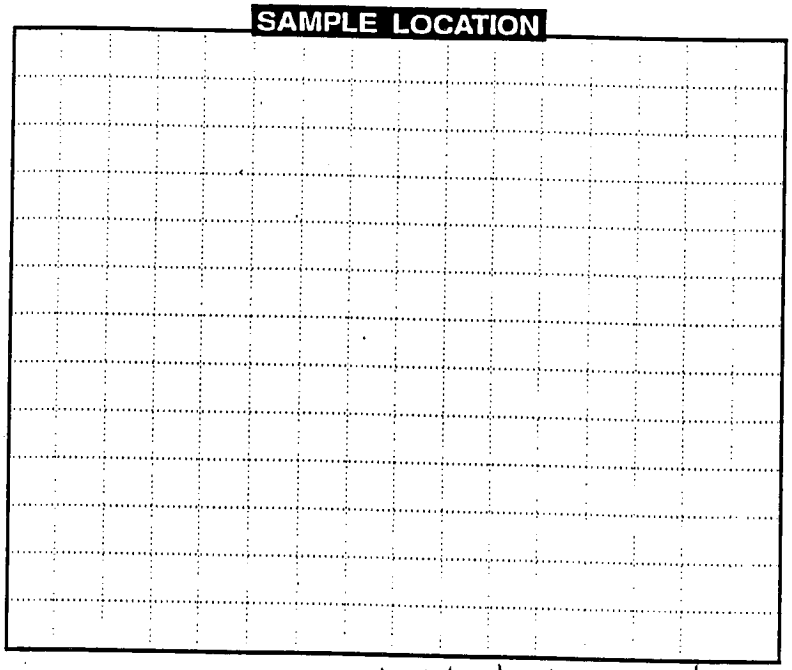
ANALYSIS	METHOD	NUMBER OF BOTTLES, VOLUME, AND TYPE	BOTTLE LOT	PRESERVATIVE	COOL TO 4°C?
PCB	8080	1 40z clear glass	—	—	(Y) N
VOC	8260	1 40z clear glass	—	—	(Y) N
					Y N
					Y N
					Y N

NAME (Print) Peter Kaczor SIGNATURE

NOTES: 1. Include angle and distance from permanent marker, sample depth, and, for sediments, height of overlying water column.
2. Include soil type, gradation or plasticity, consistency, moisture, color, structure, USCS symbol, and other relevant observations.

SAMPLE RECORD

SAMPLE LOCATION



SAMPLE NO. SB-4

Date Collected 3 / 2 / 99

Sample Time 1630 (1-2')

Site Name Allied Signal Plant 9

Job Number 4822-14

Weather 30s, overcast

SAMPLE TYPE

WATER	SOIL	GRAB	COMPOSITE
☐	☒	☒	☐

OTHER Concrete

PID METER USED Rae

AMBIENT 0 PPM

SAMPLE _____ PPM

HEADSPACE _____ PPM

Sample Description/Notes 2" asphalt, 6" concrete
1-3': Sand, some clay, fine-medium, poorly graded, moist, gray
3-3.5': clay, trace sand, firm, plastic, damp, gray-brown, CL
3.5-7': Sand, fine to medium, brown, trace gravel, SP
1630 hrs collect SB-4(1-2'), PID = 2,000 ppm
1633 collect SB-4(2-4'), PID = 57 ppm
1705 collect SB-4(5-7'), PID = 150 ppm

SAMPLING CREW

P. Kaczor

Sampling/Decon Equipment Used
Stainless-steel hand auger, bowl & spoon.
Decon with Liquinox and distilled water.

ANALYTICAL PARAMETERS

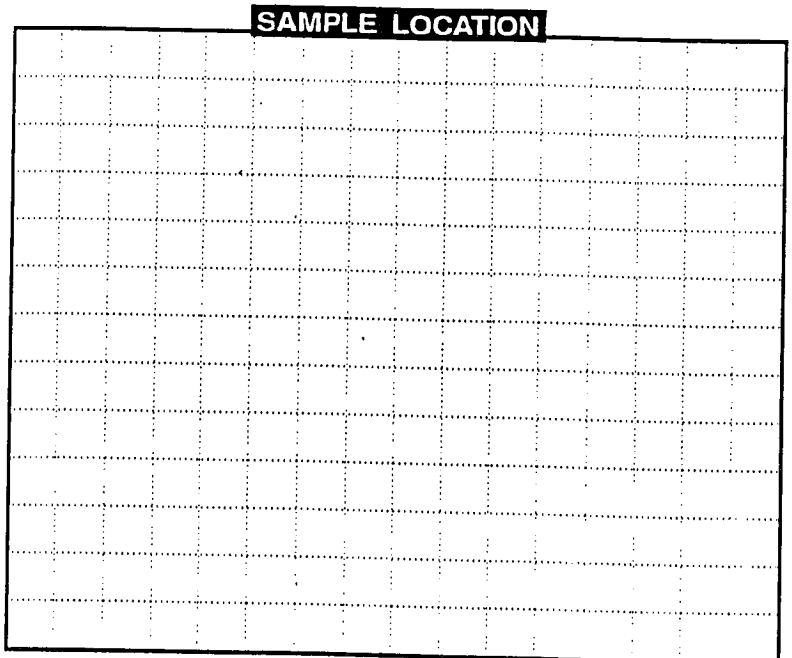
ANALYSIS	METHOD	NUMBER OF BOTTLES, VOLUME, AND TYPE	BOTTLE LOT	PRESERVATIVE	COOL TO 4°C?
PCB	8080	1 402 clear glass	—	—	(Y) N
VOC	8260	1 402 clear glass	—	—	(Y) N
					Y N
					Y N
					Y N

NAME (Print) Peter Kaczor SIGNATURE _____

NOTES: 1. Include angle and distance from permanent marker, sample depth, and, for sediments, height of overlying water column.
2. Include soil type, gradation or plasticity, consistency, moisture, color, structure, USCS symbol, and other relevant observations.

SAMPLE RECORD

SAMPLE LOCATION



SAMPLE NO. SB-5

Date Collected 3/2/99

Sample Time 1550 (1-2')

Site Name Allied Signal Plant 9

Job Number 4822-14

Weather 30s, overcast

SAMPLE TYPE

WATER	SOIL	GRAB	COMPOSITE
☐	☒	☒	☐

OTHER Concrete

PID METER USED Rae

AMBIENT 0 PPM

SAMPLE _____ PPM

HEADSPACE _____ PPM

Sample Description/Notes 1.5" asphalt, 6" concrete

1-3': Sand, some clay, fine-medium grained, poorly graded, moist, black (1-2'), gray (2-3')

3-3.5': clay, trace sand, firm, plastic, damp, gray-brown, CL

3.5-4': Sand, fine-medium, damp, brown.

4-7': Sand as above.

1550: collect SB-5(1-2'), PID= 53 ppm

1605: collect SB-5(2-4'), PID= 170 ppm

SB-5(5-7'), PID= 12 ppm

SAMPLING CREW

P. Kaczor

Sampling/Decon Equipment Used

Stainless-steel hand auger, bowl & spoon.

Decon with Liquinox and distilled water.

ANALYTICAL PARAMETERS

ANALYSIS	METHOD	NUMBER OF BOTTLES, VOLUME, AND TYPE	BOTTLE LOT	PRESERVATIVE	COOL TO 4°C?
PCB	8080	1 40z clear glass	—	—	(Y) N
VOC	8260	1 40z clear glass	—	—	(Y) N
					Y N
					Y N
					Y N

NAME (Print) Peter Kaczor SIGNATURE

NOTES: 1. Include angle and distance from permanent marker, sample depth, and, for sediments, height of overlying water column.
2. Include soil type, gradation or plasticity, consistency, moisture, color, structure, USCS symbol, and other relevant observations.

ATTACHMENT B

Laboratory Analytical Results

TriMatrix
Laboratories, Inc.

March 12, 1999

AlliedSignal, Inc.
Attn: Mr. Don Walsh
Harding Lawson Associates
39255 Country Club Drive, Suite B25
Farmington Hill, MI 48331

RE: Plant #9

Dear Mr. Don Walsh:

Enclosed is a copy of your laboratory report for submittal **34899-2.** This submittal was completely received on March 5, 1999. All analyses have been validated and comply with our Quality Control program statistics unless otherwise noted.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

J L Rice

Jennifer L. Rice
Project Chemist

Enclosure

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples

Submittal Number: 34899- 2
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

	SB-5 (1-2')	SB-4 (1-2')	SB-3 (1-2')	Quantitation Limit	Units
Lab Sample No:	217862	217863	217864		
Polychlorinated Biphenyls USEPA 8081	Enclosed	Enclosed	Enclosed		
Volatile Organics USEPA 8260B	Enclosed	Enclosed	Enclosed		
Percent Solids	82	85	83	0.1	%
Sampled by:	P. Kaczor	P. Kaczor	P. Kaczor		
Date Sampled:	03/02/99	03/02/99	03/02/99		
Time Sampled:	15:50	16:30	16:40		
Date Received:	03/04/99	03/04/99	03/04/99		
Time Received:	15:57	15:57	15:57		

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ANALYTICAL REPORT

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples

Submittal Number: 34899- 2
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

	SB-2 (0-1')	Quantitation Limit	Units
Lab Sample No:	217865		
Polychlorinated Biphenyls USEPA 8081	Enclosed		
Volatile Organics USEPA 8260B	Enclosed		
Percent Solids	87	0.1	%
Sampled by:	P. Kaczor		
Date Sampled:	03/02/99		
Time Sampled:	19:01		
Date Received:	03/04/99		
Time Received:	15:57		

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TriMatrix Laboratories, Inc.

POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-5
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 15:50
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/08/99
Lab Sample No: 217862

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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VOLATILE ORGANICS
USEPA 8260B

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-5
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 15:50
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/09/99
Lab Sample No: 217862

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
Acrolein	<0.010	Toluene	<0.050
Acrylonitrile	<0.010	1,1,1-Trichloroethane	<0.050
Benzene	<0.010	1,1,2-Trichloroethane	<0.050
Bromoform	<0.010	Trichloroethene	<0.050
Bromomethane	<0.010	Trichlorofluoromethane	<0.10
Carbon Tetrachloride	<0.010	Vinyl Chloride	<0.10
Chlorobenzene	<0.010	Acetone	<1.0
Chlorodibromomethane	<0.010	Methyl Ethyl Ketone	<1.0
Chloroethane	<0.010	Styrene	<0.050
2-Chloroethyl Vinyl Ether	<0.10	Xylene (Total)	<0.10
Chloroform	<0.010	Vinyl Acetate	<0.50
Chloromethane	<0.010	2-Hexanone	<0.50
Dichlorobromomethane	<0.010	4-Methyl-2-Pentanone	<0.50
Dichlorodifluoromethane	<0.010	Carbon Disulfide	<0.50
1,1-Dichloroethane	<0.010	1,2-Dichlorobenzene	<0.050
1,2-Dichloroethane	<0.010	1,3-Dichlorobenzene	<0.050
1,1-Dichloroethylene	<0.010	1,4-Dichlorobenzene	<0.050
trans-1,2-Dichloroethene	<0.010	Methyl(tert)butyl Ether	<0.10
cis-1,2-Dichloroethene	<0.010	Isopropylbenzene	<0.010
1,2-Dichloropropane	<0.010	n-Propylbenzene	<0.010
cis-1,3-Dichloropropene	<0.010	1,3,5-Trimethylbenzene	<0.010
trans-1,3-Dichloropropene	<0.010	1,2,4-Trimethylbenzene	<0.010
Ethylbenzene	<0.010	Naphthalene	<0.050
Methylene Chloride	<0.010	Acenaphthylene	<0.50
1,1,2,2-Tetrachloroethane	<0.050	2-Methylnaphthalene	<0.10
Tetrachloroethene	<0.050		

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TriMatrix Laboratories, Inc.

POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-4
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 16:30
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/08/99
Lab Sample No: 217863

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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VOLATILE ORGANICS
USEPA 8260B

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-4
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 16:30
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/09/99
Lab Sample No: 217863

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
Acrolein	<0.010	Toluene	<0.050
Acrylonitrile	<0.010	1,1,1-Trichloroethane	<0.050
Benzene	<0.010	1,1,2-Trichloroethane	<0.050
Bromoform	<0.010	Trichloroethene	<0.050
Bromomethane	<0.010	Trichlorofluoromethane	<0.10
Carbon Tetrachloride	<0.010	Vinyl Chloride	<0.10
Chlorobenzene	<0.010	Acetone	<1.0
Chlorodibromomethane	<0.010	Methyl Ethyl Ketone	<1.0
Chloroethane	<0.010	Styrene	<0.050
2-Chloroethyl Vinyl Ether	<0.10	Xylene (Total)	<0.10
Chloroform	<0.010	Vinyl Acetate	<0.50
Chloromethane	<0.010	2-Hexanone	<0.50
Dichlorobromomethane	<0.010	4-Methyl-2-Pentanone	<0.50
Dichlorodifluoromethane	<0.010	Carbon Disulfide	<0.50
1,1-Dichloroethane	<0.010	1,2-Dichlorobenzene	<0.050
1,2-Dichloroethane	<0.010	1,3-Dichlorobenzene	<0.050
1,1-Dichloroethylene	<0.010	1,4-Dichlorobenzene	<0.050
trans-1,2-Dichloroethene	<0.010	Methyl(tert)butyl Ether	<0.10
cis-1,2-Dichloroethene	<0.010	Isopropylbenzene	<0.010
1,2-Dichloropropane	<0.010	n-Propylbenzene	<0.010
cis-1,3-Dichloropropene	<0.010	1,3,5-Trimethylbenzene	<0.010
trans-1,3-Dichloropropene	<0.010	1,2,4-Trimethylbenzene	<0.010
Ethylbenzene	<0.010	Naphthalene	<0.050
Methylene Chloride	<0.010	Acenaphthylene	<0.50
1,1,2,2-Tetrachloroethane	<0.050	2-Methylnaphthalene	<0.10
Tetrachloroethene	<0.050		

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POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-3
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 16:40
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/08/99
Lab Sample No: 217864

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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VOLATILE ORGANICS
USEPA 8260B

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-3
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 16:40
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/09/99
Lab Sample No: 217864

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
Acrolein	<0.010	Toluene	<0.050
Acrylonitrile	<0.010	1,1,1-Trichloroethane	<0.050
Benzene	<0.010	1,1,2-Trichloroethane	<0.050
Bromoform	<0.010	Trichloroethene	<0.050
Bromomethane	<0.010	Trichlorofluoromethane	<0.10
Carbon Tetrachloride	<0.010	Vinyl Chloride	<0.10
Chlorobenzene	<0.010	Acetone	<1.0
Chlorodibromomethane	<0.010	Methyl Ethyl Ketone	<1.0
Chloroethane	<0.010	Styrene	<0.050
2-Chloroethyl Vinyl Ether	<0.10	Xylene (Total)	<0.10
Chloroform	<0.010	Vinyl Acetate	<0.50
Chloromethane	<0.010	2-Hexanone	<0.50
Dichlorobromomethane	<0.010	4-Methyl-2-Pentanone	<0.50
Dichlorodifluoromethane	<0.010	Carbon Disulfide	<0.50
1,1-Dichloroethane	<0.010	1,2-Dichlorobenzene	<0.050
1,2-Dichloroethane	<0.010	1,3-Dichlorobenzene	<0.050
1,1-Dichloroethylene	<0.010	1,4-Dichlorobenzene	<0.050
trans-1,2-Dichloroethene	<0.010	Methyl(tert)butyl Ether	<0.10
cis-1,2-Dichloroethene	<0.010	Isopropylbenzene	<0.010
1,2-Dichloropropane	<0.010	n-Propylbenzene	<0.010
cis-1,3-Dichloropropene	<0.010	1,3,5-Trimethylbenzene	<0.010
trans-1,3-Dichloropropene	<0.010	1,2,4-Trimethylbenzene	<0.010
Ethylbenzene	<0.010	Naphthalene	<0.050
Methylene Chloride	<0.010	Acenaphthylene	<0.50
1,1,2,2-Tetrachloroethane	<0.050	2-Methylnaphthalene	<0.10
Tetrachloroethene	<0.050		

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POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-2
(0-1')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 19:01
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/09/99
Lab Sample No: 217865

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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VOLATILE ORGANICS
USEPA 8260B

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-2
(0-1')

Submittal Number 34899- 2
Date Sampled: 03/02/99 Time: 19:01
Date Received: 03/04/99 Time: 15:57
Analysis Date: 03/09/99
Lab Sample No: 217865

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
Acrolein	<0.010	Toluene	<0.050
Acrylonitrile	<0.010	1,1,1-Trichloroethane	<0.050
Benzene	<0.010	1,1,2-Trichloroethane	<0.050
Bromoform	<0.010	Trichloroethene	<0.050
Bromomethane	<0.010	Trichlorofluoromethane	<0.10
Carbon Tetrachloride	<0.010	Vinyl Chloride	<0.10
Chlorobenzene	<0.010	Acetone	<1.0
Chlorodibromomethane	<0.010	Methyl Ethyl Ketone	<1.0
Chloroethane	<0.010	Styrene	<0.050
2-Chloroethyl Vinyl Ether	<0.10	Xylene (Total)	<0.10
Chloroform	<0.010	Vinyl Acetate	<0.50
Chloromethane	<0.010	2-Hexanone	<0.50
Dichlorobromomethane	<0.010	4-Methyl-2-Pentanone	<0.50
Dichlorodifluoromethane	<0.010	Carbon Disulfide	<0.50
1,1-Dichloroethane	<0.010	1,2-Dichlorobenzene	<0.050
1,2-Dichloroethane	<0.010	1,3-Dichlorobenzene	<0.050
1,1-Dichloroethylene	<0.010	1,4-Dichlorobenzene	<0.050
trans-1,2-Dichloroethene	<0.010	Methyl(tert)butyl Ether	<0.10
cis-1,2-Dichloroethene	<0.010	Isopropylbenzene	<0.010
1,2-Dichloropropane	<0.010	n-Propylbenzene	<0.010
cis-1,3-Dichloropropene	<0.010	1,3,5-Trimethylbenzene	<0.010
trans-1,3-Dichloropropene	<0.010	1,2,4-Trimethylbenzene	<0.010
Ethylbenzene	<0.010	Naphthalene	<0.050
Methylene Chloride	<0.010	Acenaphthylene	<0.50
1,1,2,2-Tetrachloroethane	<0.050	2-Methylnaphthalene	<0.10
Tetrachloroethene	<0.050		

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QUALITY CONTROL REPORT

Parameter: **Percent Solids**
Method: Residue-Gravimetric, Dried @ 103-105*C USEPA-160.3 SOIL
Units: %

Instrument Blank

Test Date	Analytical Batch Number	Analyst	Blank Conc
03/08/99	139971	TME	<0.1

Duplicate Percent Difference

Sample Number	Test Date	QC Batch #	Analyst	Sample Conc	Duplicate Conc	RPD	QC Limits
217862	03/08/99	42733	TME	82	83	1	0- 20

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QUALITY CONTROL REPORT

INSTRUMENT BLANK

Fraction: PCB Scan USEPA-608 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/08/99
Units: ug/L
Analytical Batch: 139928

Parameter	Blank Concentration	Quantitation Limit
PCB-1016	ND	0.10
PCB-1221	ND	0.10
PCB-1232	ND	0.10
PCB-1242	ND	0.10
PCB-1248	ND	0.10
PCB-1254	ND	0.10
PCB-1260	ND	0.10

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/08/99
Units: mg/kg dry
QC Batch: 42739-105

Parameter	Blank Concentration	Quantitation Limit
PCB-1016	<0.33	0.33
PCB-1221	<0.33	0.33
PCB-1232	<0.33	0.33
PCB-1242	<0.33	0.33
PCB-1248	<0.33	0.33
PCB-1254	<0.33	0.33
PCB-1260	<0.33	0.33

QUALITY CONTROL REPORT

LABORATORY FORTIFIED BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/08/99
Units: mg/kg dry
QC Batch: 42739-105

Parameter	Spike Quantity	Spike Result	Spike % Rec	Control Limits
PCB-1016	0.166	0.184	111	68 - 111

CASE NARRATIVE

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QUALITY CONTROL REPORT

MATRIX SPIKE RECOVERY

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs USEPA-8081 SOIL
Analyst: Diane L. VanMale Test Date: 03/08/99
Sample No: 217862
Units: mg/kg dry
QC Batch: 42739

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
PCB-1016	<0.33	0.203	0.211	104	41 - 124

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QUALITY CONTROL REPORT

MATRIX SPIKE RECOVERY

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs USEPA-8081 SOIL
Analyst: Diane L. VanMale Test Date: 03/08/99
Sample No: 217862
Units: mg/kg dry
QC Batch: 42739

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
PCB-1016	<0.33	0.203	0.224	110	41 - 124

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QUALITY CONTROL REPORT

MATRIX SPIKE DUPLICATE

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs USEPA-8081 SOIL
Analyst: Diane L. VanMale Test Date: 03/08/99
Sample No: 217862
Units: mg/kg dry
QC Batch: 42739

Parameter	Sample+Spike Conc #1	Sample+Spike Conc #2	Relative % Diff.	Control Limits
PCB-1016	0.211	0.224	6	0 - 12

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8260B
Method: Volatiles Purge & Trap-GC/MS
Analyst: Jim L. Tardani Test Date: 03/09/99
Units: mg/kg dry
QC Batch: 42778-109

Parameter	Blank Concentration	Quantitation Limit
1,1,1-Trichloroethane	<0.010	0.010
1,1,2,2-Tetrachloroethane	<0.010	0.010
1,1,2-Trichloroethane	<0.010	0.010
1,1-Dichloroethane	<0.010	0.010
1,1-Dichloroethylene	<0.010	0.010
1,2,4-Trimethylbenzene	<0.010	0.010
1,2-Dichlorobenzene	<0.010	0.010
1,2-Dichloroethane	<0.010	0.010
1,2-Dichloropropane	<0.010	0.010
1,3,5-Trimethylbenzene	<0.010	0.010
1,3-Dichlorobenzene	<0.010	0.010
1,4-Dichlorobenzene	<0.010	0.010
Benzene	<0.010	0.010
Dichlorobromomethane	<0.010	0.010
Bromoform	<0.010	0.010
Bromomethane	<0.010	0.010
Carbon Tetrachloride	<0.010	0.010
Chlorobenzene	<0.010	0.010
Chloroethane	<0.010	0.010
Chloroform	<0.010	0.010
Chloromethane	<0.010	0.010
cis-1,2-Dichloroethene	<0.010	0.010
Chlorodibromomethane	<0.010	0.010
Dichlorodifluoromethane	<0.010	0.010
Ethylbenzene	<0.010	0.010
Isopropylbenzene	<0.010	0.010
Methylene Chloride	<0.010	0.010
Tetrachloroethene	<0.010	0.010
Toluene	<0.010	0.010
Styrene	<0.010	0.010
Trichloroethene	<0.010	0.010
Trichlorofluoromethane	<0.010	0.010
Vinyl Chloride	<0.010	0.010
trans-1,2-Dichloroethene	<0.010	0.010
n-Propylbenzene	<0.010	0.010
Naphthalene	<0.050	0.050

QUALITY CONTROL REPORT

LABORATORY FORTIFIED BLANK

Fraction: Volatile Organics USEPA-8260B Scan
Method: Volatiles Purge & Trap-GC/MS
Analyst: Jim L. Tardani Test Date: 03/09/99
Units: mg/kg dry
QC Batch: 42778-109

Parameter	Spike Quantity	Spike Result	Spike % Rec	Control Limits
Benzene	0.0400	0.0392	98	80 - 127
Chlorobenzene	0.0400	0.0373	93	84 - 118
1,1-Dichloroethylene	0.0400	0.0383	96	82 - 132
Toluene	0.0400	0.0361	90	82 - 123
Trichloroethene	0.0400	0.0371	93	79 - 128

QUALITY CONTROL REPORT

MATRIX SPIKE RECOVERY

Fraction: Volatile Organics USEPA-8260B Scan
Method: Volatiles Purge & Trap-GC/MS USEPA-8260A SOIL
Analyst: Jim L. Tardani Test Date: 03/10/99
Sample No: 217862
Units: mg/kg dry
QC Batch: 42778

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
Benzene	<0.010	0.244	0.252	103	74 - 130
Chlorobenzene	<0.010	0.244	0.224	92	69 - 133
1,1-Dichloroethylene	<0.010	0.244	0.246	101	63 - 134
Toluene	<0.050	0.244	0.240	98	70 - 131
Trichloroethene	<0.050	0.244	0.252	103	70 - 132

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QUALITY CONTROL REPORT

MATRIX SPIKE RECOVERY

Fraction: Volatile Organics USEPA-8260B Scan
Method: Volatiles Purge & Trap-GC/MS USEPA-8260A SOIL
Analyst: Jim L. Tardani Test Date: 03/10/99
Sample No: 217862
Units: mg/kg dry
QC Batch: 42778

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
Benzene	<0.010	0.244	0.282	116	74 - 130
Chlorobenzene	<0.010	0.244	0.251	103	69 - 133
1,1-Dichloroethylene	<0.010	0.244	0.270	111	63 - 134
Toluene	<0.050	0.244	0.259	106	70 - 131
Trichloroethene	<0.050	0.244	0.280	115	70 - 132

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QUALITY CONTROL REPORT

MATRIX SPIKE DUPLICATE

Fraction: Volatile Organics USEPA-8260B Scan
Method: Volatiles Purge & Trap-GC/MS USEPA-8260A SOIL
Analyst: Jim L. Tardani Test Date: 03/10/99
Sample No: 217862
Units: mg/kg dry
QC Batch: 42778

Parameter	Sample+Spike Conc #1	Sample+Spike Conc #2	Relative % Diff.	Control Limits
Benzene	0.252	0.282	11	0 - 18
Chlorobenzene	0.224	0.251	11	0 - 18
1,1-Dichloroethylene	0.246	0.270	9	0 - 20
Toluene	0.240	0.259	8	0 - 14
Trichloroethene	0.252	0.280	11	0 - 17

QUALITY CONTROL REPORT
SURROGATE RECOVERIES

Method: Volatiles Purge & Trap-GC/MS USEPA-8260A SOIL

Surrogate Compound List

SUR-1: Dibromofluoromethane
SUR-2: d8-Toluene
SUR-3: 4-Bromofluorobenzene

% R = Percent Recovery

Compounds:	SUR-1	SUR-2	SUR-3
Control Limits:	68-140	74-124	77-123
Sample # / ID	Batch	% R	% R	% R
MPB-109	42778	100	104	103
LFB-109	42778	94	102	96
217862SPK	42778	102	107	97
217862SPK	42778	99	100	98
217862	42778	102	101	109
217863	42778	100	99	107
217864	42778	103	100	103
217865	42778	106	102	111

QUALITY CONTROL REPORT
SURROGATE RECOVERIES

Method: Organochlorine Pesticides & PCBs USEPA-608 WATER

Surrogate Compound List

SUR-1: Tetrachloro-M-xylene
SUR-2: Decachlorobiphenyl

% R = Percent Recovery

Compounds:		SUR-1	SUR-2
Control Limits:		32-141	42-131
Sample # / ID	Batch	% R	% R
BLK-001	139928	99	72

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QUALITY CONTROL REPORT
SURROGATE RECOVERIES

Method: Organochlorine Pesticides & PCBs USEPA-8081 SOIL

Surrogate Compound List

SUR-1: Tetrachloro-M-xylene
SUR-2: Decachlorobiphenyl

% R = Percent Recovery

Compounds:		SUR-1	SUR-2
Control Limits:		41-123	38-135
Sample # / ID	Batch	% R	% R
MPB-105	42739	108	96
LFB-105	42739	112	95
217862SPK	42739	104	90
217862SPK	42739	110	97
217862	42739	101	89
217863	42739	102	92
217864	42739	101	88
217865	42739	100	103

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METHODS PAGE

Parameter: Polychlorinated Biphenyls USEPA 8081
Method: Organochlorine Pesticides & PCBs
Application: SOIL Reference Citation: USEPA-8081
Analyst: Diane L. VanMale (DLV) Date Analyzed: 03/08/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217862	SB-5 (1-2')	139928	42739-105
217863	SB-4 (1-2')	139928	42739-105
217864	SB-3 (1-2')	139928	42739-105

Parameter: Polychlorinated Biphenyls USEPA 8081
Method: Organochlorine Pesticides & PCBs
Application: SOIL Reference Citation: USEPA-8081
Analyst: Diane L. VanMale (DLV) Date Analyzed: 03/09/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217865	SB-2 (0-1')	139928	42739-105

Parameter: Volatile Organics USEPA 8260B
Method: Volatiles Purge & Trap-GC/MS
Application: SOIL Reference Citation: USEPA-8260A
Analyst: Jim L. Tardani (JLT) Date Analyzed: 03/09/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217862	SB-5 (1-2')	139989	42778-109
217863	SB-4 (1-2')	139989	42778-109
217864	SB-3 (1-2')	139989	42778-109
217865	SB-2 (0-1')	139989	42778-109

Parameter: PCB Extraction
Method: Sonication Extraction
Application: SOIL Reference Citation: USEPA-3550A
Analyst: Jeff Glaser (JPG3) Date Analyzed: 03/05/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217862	SB-5 (1-2')	139649	-105
217863	SB-4 (1-2')	139649	-105
217864	SB-3 (1-2')	139649	-105

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METHODS PAGE

Parameter: PCB Extraction
Method: Sonication Extraction
Application: SOIL — Reference Citation: USEPA-3550A
Analyst: Jeff Glaser (JPG3) — Date Analyzed: 03/05/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217865	SB-2 (0-1')	139649	-105

Parameter: Percent Solids
Method: Residue-Gravimetric, Dried @ 103-105*C
Application: SOIL — Reference Citation: USEPA-160.3
Analyst: Timothy M. Eldridge (TME) — Date Analyzed: 03/08/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217862	SB-5 (1-2')	139971	42733
217863	SB-4 (1-2')	139971	42733
217864	SB-3 (1-2')	139971	42733
217865	SB-2 (0-1')	139971	42733

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Laboratories, Inc.

ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-5
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217862

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/08/99	04/14/99	03/05/99	03/16/99
Volatile Organics USEPA 8260B	03/09/99	03/16/99		
PCB Extraction	03/05/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-4
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217863

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/08/99	04/14/99	03/05/99	03/16/99
Volatile Organics USEPA 8260B	03/09/99	03/16/99		
PCB Extraction	03/05/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-3
(1-2')

Submittal Number 34899- 2
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217864

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/08/99	04/14/99	03/05/99	03/16/99
Volatile Organics USEPA 8260B	03/09/99	03/16/99		
PCB Extraction	03/05/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Rush Samples
Sample: SB-2
(0-1')

Submittal Number 34899- 2
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217865

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/09/99	04/14/99	03/05/99	03/16/99
Volatile Organics USEPA 8260B	03/09/99	03/16/99		
PCB Extraction	03/05/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program. No qualifications required.

Page 1 - **End of Statement of Data Qualifications**

Note: This document is included as a part of the analytical report for the above referenced project and submittal, and should be retained as a permanent record thereof.

TriMatrix Laboratories, Inc.

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Chain of Custody Record

COC No. № 46342

Project Manager	Project Name	For Lab Use Only
Don Walsh	Allied Signal Plant 9	Rack/Tray No: 505.6-73
Project No. 9822-14	Sampler (Print): P. K A C Z O R	Lab Project # 34899-2
	Sampler Signature: [signature]	

*one-wk turnaround**

Date Sampled	Time Sampled	Matrix*	Composite	Grab	Sample Identification	No. of Containers	Container Type	Analysis Required/Comments	Sample No.	Filtered Date/Time
3-2-99	1550	SOIL		X	SB-5 (1-2')	2		PCB 8080 ** 1-WK TAT* VOC 8260 (VSI List)	217862	TG02
	1630			X	SB-4 (1-2')	2			217863	
	1640			X	SB-3 (1-2')	2			217864	
	1901			X	SB-2 (0-1')	2			217865	
				X						
				X						
				X						
				X						
				X						

Relinquished By:	Date/Time	Received By:	Received to Lab By:	Date/Time	Logged in By:	Date/Time
[signature]	3-4-99 1551	3/4/99 1551 [signature]			[signature]	3-5-99 8:37 AM

* Matrix: Water (WTR), Wastewater (WW), Soil (SOIL), Sludge (SLG), Air, Oil, Waste (WASTE)

TriMatrix Laboratories, Inc.

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Chain of Custody Record

COC No. ~~2 of~~ ~~1 of 2~~ № 52388

Project Manager	Project Name	Project No.	Sampler (Print)	Sampler Signature
Don Welsh	Allied Signal Plant 9	9822-14	~~D. Kaczor~~	P. Kaczor

Date Sampled	Time Sampled	Matrix*	Composite	Grab	Sample Identification	No. of Containers	Container Type	Analysis Required/Comments	Sample No.	Filtered Date/Time
3-2-99	1605	SOIL		X	SB-5 (2-4')	1		PCB 8080		
	1711			X	SB-5 (5-7')	1				
	1633			X	SB-4 (2-4')	1				
	1705			X	SB-4 (5-7')	1				
	1644			X	SB-3 (2-4')	1				
	1904			X	SB-2 (2-4)	1				
	1700			X	SB-3 (5-7')	1				
3-2-99	1912	SOIL		X	SB-2 (5-7')	1		PCB 8080		
				~~X~~	~~SB-1 (3-4')~~ PK					

* HOLD For Potential 2-wk turnaround *

For Lab Use Only

Rack/Tray No: 433,

Lab Project #

Relinquished By:	Date/Time	Received By:	Received to Lab By:	Date/Time	Logged in By:	Date/Time
	3/4/99 1551	3/4/99 1551 Bell Hamelberger				

* Matrix: Water (WTR), Wastewater (WW), Soil (SOIL), Sludge (SLG), Air, Oil, Waste (WASTE)

TriMatrix
Laboratories, Inc.

March 12, 1999

AlliedSignal, Inc.
Attn: Mr. Don Walsh
Harding Lawson Associates
39255 Country Club Dr, Ste B-25
Farmington Hills, MI 48331

RE: Plant #9

Dear Mr. Don Walsh:

Enclosed is a copy of your laboratory report for submittal **34899-3.** This submittal was completely received on March 5, 1999. All analyses have been validated and comply with our Quality Control program statistics unless otherwise noted.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice
Project Chemist

Enclosure

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TriMatrix Laboratories, Inc.

ANALYTICAL REPORT

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples

Submittal Number: 34899- 3
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

	SB-1 (3-4')	SB-4 (Concrete)	SB-5 (Concrete)	Quantitation Limit	Units
Lab Sample No:	217916	217917	217918		
Polychlorinated Biphenyls USEPA 8081	Enclosed	Enclosed	Enclosed		
Percent Solids	83	89	89	0.1	%
Sampled by:	P. Kaczor	P. Kaczor	P. Kaczor		
Date Sampled:	03/02/99	03/02/99	03/02/99		
Time Sampled:	15:10	16:40	15:30		
Date Received:	03/04/99	03/04/99	03/04/99		
Time Received:	15:51	15:51	15:51		

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TriMatrix Laboratories, Inc.

ANALYTICAL REPORT

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples

Submittal Number: 34899- 3
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

	SB-3 (Concrete)	Quantitation Limit	Units
Lab Sample No:	217919		
Polychlorinated Biphenyls USEPA 8081	Enclosed		
Percent Solids	93	0.1	%
Sampled by:	P. Kaczor		
Date Sampled:	03/02/99		
Time Sampled:	16:50		
Date Received:	03/04/99		
Time Received:	15:51		

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POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-1
(3-4')

Submittal Number 34899- 3
Date Sampled: 03/02/99 Time: 15:10
Date Received: 03/04/99 Time: 15:51
Analysis Date: 03/10/99
Lab Sample No: 217916

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-4
(Concrete)

Submittal Number 34899- 3
Date Sampled: 03/02/99 Time: 16:40
Date Received: 03/04/99 Time: 15:51
Analysis Date: 03/10/99
Lab Sample No: 217917

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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TriMatrix Laboratories, Inc.

POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-5
(Concrete)

Submittal Number 34899- 3
Date Sampled: 03/02/99 Time: 15:30
Date Received: 03/04/99 Time: 15:51
Analysis Date: 03/10/99
Lab Sample No: 217918

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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TriMatrix Laboratories, Inc.

POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-3
(Concrete)

Submittal Number 34899- 3
Date Sampled: 03/02/99 Time: 16:50
Date Received: 03/04/99 Time: 15:51
Analysis Date: 03/10/99
Lab Sample No: 217919

Parameter	Result mg/kg dry	Parameter	Result mg/kg dry
PCB-1016	<0.33	PCB-1248	<0.33
PCB-1221	<0.33	PCB-1254	<0.33
PCB-1232	<0.33	PCB-1260	<0.33
PCB-1242	<0.33		

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TriMatrix Laboratories, Inc.

ANALYTICAL REPORT

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples

Submittal Number: 34899- 3
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

	Decon	Quantitation Limit	Units
Lab Sample No:	217920		

Polychlorinated Biphenyls * Enclosed
USEPA 8081

Sampled by:	P. Kaczor
Date Sampled:	03/03/99
Time Sampled:	09:54
Date Received:	03/04/99
Time Received:	15:51

* See attached Statement of Data Qualifications.

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POLYCHLORINATED BIPHENYLS
USEPA 8081

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: Decon

Submittal Number 34899- 3
Date Sampled: 03/03/99 Time: 09:54
Date Received: 03/04/99 Time: 15:51
Analysis Date: 03/11/99
Lab Sample No: 217920

Parameter	Result ug/L	Parameter	Result ug/L
PCB-1016	<0.50	PCB-1248	<0.50
PCB-1221	<0.50	PCB-1254	<0.50
PCB-1232	<0.50	PCB-1260	<0.50
PCB-1242	<0.50		

Page 8 - **End of Analytical Report**

QUALITY CONTROL REPORT

Parameter: **Percent Solids**
Method: Residue-Gravimetric, Dried @ 103-105*C USEPA-160.3 SOIL
Units: %

Instrument Blank

Test Date	Analytical Batch Number	Analyst	Blank Conc
03/08/99	139971	TME	<0.1

Duplicate Percent Difference

Sample Number	Test Date	QC Batch #	Analyst	Sample Conc	Duplicate Conc	RPD	QC Limits
217916	03/08/99	42733	TME	83	83	0	0- 20

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QUALITY CONTROL REPORT

INSTRUMENT BLANK

Fraction: PCB Scan USEPA-608 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/11/99
Units: ug/L
Analytical Batch: 140061

Parameter	Blank Concentration	Quantitation Limit
PCB-1016	ND	0.10
PCB-1221	ND	0.10
PCB-1232	ND	0.10
PCB-1242	ND	0.10
PCB-1248	ND	0.10
PCB-1254	ND	0.10
PCB-1260	ND	0.10

34899- 3

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Shelly A. Jewell Test Date: 03/10/99
Units: mg/kg dry
QC Batch: 42739-108

Parameter	Blank Concentration	Quantitation Limit
PCB-1016	<0.33	0.33
PCB-1221	<0.33	0.33
PCB-1232	<0.33	0.33
PCB-1242	<0.33	0.33
PCB-1248	<0.33	0.33
PCB-1254	<0.33	0.33
PCB-1260	<0.33	0.33

QUALITY CONTROL REPORT

LABORATORY FORTIFIED BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Shelly A. Jewell Test Date: 03/10/99
Units: mg/kg dry
QC Batch: 42739-108

Parameter	Spike Quantity	Spike Result	Spike % Rec	Control Limits
PCB-1016	0.167	0.169	101	68 - 111

34899- 3

QUALITY CONTROL REPORT

INSTRUMENT BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/10/99
Units: ug/L
Analytical Batch: 140041

Parameter	Blank Concentration	Quantitation Limit
PCB-1016	ND	0.10
PCB-1221	ND	0.10
PCB-1232	ND	0.10
PCB-1242	ND	0.10
PCB-1248	ND	0.10
PCB-1254	ND	0.10
PCB-1260	ND	0.10

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/10/99
Units: ug/L
QC Batch: 42570-109

Parameter	Blank Concentration	Quantitation Limit
PCB-1016	<0.10	0.10
PCB-1221	<0.10	0.10
PCB-1232	<0.10	0.10
PCB-1242	<0.10	0.10
PCB-1248	<0.10	0.10
PCB-1254	<0.10	0.10
PCB-1260	<0.10	0.10

34899- 3

QUALITY CONTROL REPORT

LABORATORY FORTIFIED BLANK

Fraction: PCB Scan USEPA-8081 Scan
Method: Organochlorine Pesticides & PCBs
Analyst: Diane L. VanMale Test Date: 03/10/99
Units: ug/L
QC Batch: 42570-109

Parameter	Spike Quantity	Spike Result	Spike % Rec	Control Limits
PCB-1016	1.00	0.918	92	70 - 130

34899- 3

QUALITY CONTROL REPORT
SURROGATE RECOVERIES

Method: Organochlorine Pesticides & PCBs USEPA-608 WATER

Surrogate Compound List

SUR-1: Tetrachloro-M-xylene
SUR-2: Decachlorobiphenyl

% R = Percent Recovery

Compounds:		SUR-1	SUR-2
Control Limits:		32-141	42-131
Sample # / ID	Batch	% R	% R
BLK-001	140061	100	67

QUALITY CONTROL REPORT
SURROGATE RECOVERIES

Method: Organochlorine Pesticides & PCBs USEPA-8081 WATER

Surrogate Compound List

SUR-1: Tetrachloro-M-xylene
SUR-2: Decachlorobiphenyl

% R = Percent Recovery

Compounds:		SUR-1	SUR-2
Control Limits:		47-127	15-128
Sample # / ID	Batch	% R	% R
BLK-001	140041	80	43
MPB-109	42570	93	88
LFB-109	42570	91	85
217920	42570	**23**	**4**

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QUALITY CONTROL REPORT
SURROGATE RECOVERIES

Method: Organochlorine Pesticides & PCBs USEPA-8081 SOIL

Surrogate Compound List

SUR-1: Tetrachloro-M-xylene
SUR-2: Decachlorobiphenyl

% R = Percent Recovery

Compounds:		SUR-1	SUR-2
Control Limits:		41-123	38-135
Sample # / ID	Batch	% R	% R
MPB-108	42739	105	88
LFB-108	42739	104	86
217916	42739	103	79
217917	42739	106	83
217918	42739	104	84
217919	42739	109	86

METHODS PAGE

Parameter: Polychlorinated Biphenyls USEPA 8081
Method: Organochlorine Pesticides & PCBs
Application: WATER Reference Citation: USEPA-8081
Analyst: Diane L. VanMale (DLV) Date Analyzed: 03/11/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217920	Decon	140061	42570-109

Parameter: Polychlorinated Biphenyls USEPA 8081
Method: Organochlorine Pesticides & PCBs
Application: SOIL Reference Citation: USEPA-8081
Analyst: Shelly A. Jewell (SAJ) Date Analyzed: 03/10/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217916	SB-1 (3-4')	140041	42739-108
217917	SB-4 (Concrete)	140041	42739-108
217918	SB-5 (Concrete)	140041	42739-108
217919	SB-3 (Concrete)	140041	42739-108

Parameter: PCB Extraction
Method: Separatory Funnel Liquid-Liquid Extract.
Application: WATER Reference Citation: USEPA-3510B
Analyst: James D. Mc Fadden (JDM) Date Analyzed: 03/09/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217920	Decon	139556	-109

Parameter: PCB Extraction
Method: Sonication Extraction
Application: SOIL Reference Citation: USEPA-3550A
Analyst: James D. Mc Fadden (JDM) Date Analyzed: 03/08/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217916	SB-1 (3-4')	139649	-108
217917	SB-4 (Concrete)	139649	-108
217918	SB-5 (Concrete)	139649	-108
217919	SB-3 (Concrete)	139649	-108

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METHODS PAGE

Parameter: Percent Solids
Method: Residue-Gravimetric, Dried @ 103-105*C
Application: SOIL Reference Citation: USEPA-160.3
Analyst: Timothy M. Eldridge (TME) Date Analyzed: 03/08/99

Sample Number	Sample Description	Analytical Batch	QC Batch
217916	SB-1 (3-4')	139971	42733
217917	SB-4 (Concrete)	139971	42733
217918	SB-5 (Concrete)	139971	42733
217919	SB-3 (Concrete)	139971	42733

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TriMatrix Laboratories, Inc.

ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-1
(3-4')

Submittal Number 34899- 3
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217916

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/10/99	04/17/99	03/08/99	03/16/99
PCB Extraction	03/08/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-4
(Concrete)

Submittal Number 34899- 3
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217917

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/10/99	04/17/99	03/08/99	03/16/99
PCB Extraction	03/08/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-5
(Concrete)

Submittal Number 34899- 3
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217918

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/10/99	04/17/99	03/08/99	03/16/99
PCB Extraction	03/08/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal, Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: SB-3
(Concrete)

Submittal Number 34899- 3
Date Sampled: 03/02/99
Date Received: 03/04/99

Sample No: 217919

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/10/99	04/17/99	03/08/99	03/16/99
PCB Extraction	03/08/99	03/16/99		
Percent Solids	03/08/99	03/30/99		

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ANALYSIS-PRETREATMENT DATE SUMMARY PAGE

AlliedSignal,Inc.
Proj: Plant #9

Subm: March 2, 1999 Samples
Sample: Decon

Submittal Number 34899- 3
Date Sampled: 03/03/99
Date Received: 03/04/99

Sample No: 217920

	Analysis		Pretreatment	
	Run Date	Hold Date	Run Date	Hold Date
Polychlorinated Biphenyls USEPA 8081	03/11/99	04/18/99	03/09/99	03/10/99
PCB Extraction	03/09/99	03/10/99		

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STATEMENT OF DATA QUALIFICATIONS

Analysis: **Polychlorinated Biphenyls**
Organochlorine Pesticides & PCBs
WATER USEPA-8081

Qualification:

Surrogate spike result(s) for this sample and analysis had a recovery of < 10%. All positive results must be considered estimated.

Sample(s) Qualified: 217920 Decon

Qualification:

Surrogate spike result(s) for this sample and analysis had a recovery of < 10%. All < or non-detectable results must be considered unusable.

Sample(s) Qualified: 217920 Decon

Page 1 - **End of Statement of Data Qualifications**

Note: This document is included as a part of the analytical report for the above referenced project and submittal, and should be retained as a permanent record thereof.

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CASE NARRATIVE

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TriMatrix Laboratories, Inc.

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Chain of Custody Record

COC No. ~~2 of 2~~ № 52389

Project Manager	Project Name	Sampler (Print)	Sampler Signature
Don Walsh	Allied Signal Plant 9	P. Kraczor	[signature]

Project No.: 9822-14

For Lab Use Only — Rack/Tray No.: — Lab Project #: 348993

Comments: 2-week turnaround

Date Sampled	Time Sampled	Matrix*	Composite	Grab	Sample Identification	No. of Containers	Container Type	Analysis Required/Comments	Sample No.	Filtered Date/Time
3-2-99	1510	SOIL		x	SB-1 (3-4')	1		PCB 8080	217916	TG-03
↓	1640	Solid		x	SB-4 (Concrete)	1		↓	217917	↓
↓	1530	Solid		x	SB-5 (Concrete)	1		↓	217918	↓
3-2-99	1650	Solid		x	SB-3 (Concrete)	1		↓	217919	↓
3-3-99	0954	WTR		x	Decon	2	2	PCB 8080	217920	TG-04

Relinquished By:	Date/Time	Received By:	Received to Lab By:	Date/Time	Logged in By:	Date/Time
[signature]	3-4-99 1551	[signature] 3/4/99 1551			[signature]	3-5-99 2:00 PM

* Matrix: Water (WTR), Wastewater (WW), Soil (SOIL), Sludge (SLG), Air, Oil, Waste (WASTE)