DOE/MT/95018--1

BIOREMEDIATION TECHNIQUES ON CRUDE OIL CONTAMINATED SOILS IN OHIO

DE-FG22-95MT95018

Ohio Department of Natural Resources
Division of Oil and Gas

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Program Manager: Bill Hockheiser
Principal Investigator: David Hodges
Contracting Office: William Mundorf
Contracting Officer's Representative: Rhonda L. Lindsey
Reporting Period: 1st Quarterly Report 10/1/95 to 12/31/95

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MASTER

BIOREMEDIATION TECHNIQUES ON CRUDE OIL CONTAMINATED SOILS IN OHIO

Objective: The objective of this project is to develop environmentally-sound and cost-effective remediation techniques for crude oil contaminated soils. By providing a guidance manual to oil and gas operators, the Ohio Division of Oil and Gas regulatory authority hopes to reduce remediaton costs while improving voluntary compliance with soil clean-up requirements. This shall be accomplished by conducting a series of field tests to define the optimum range for nutrient, oxygen and organic enhancement to biologically remediate soils contaminated with brines and crude oil having a wide range of viscosity.

Summary of Technical Progress: Task one of the bioremediation project began on July 3, 1995 with the selection and preparation of a site in Smith Township, Mahoning County (Figure 1). Tasks two and three began according to the study chronology attached as Appendix 1. The plots were arranged and parameters were varied as shown in Figure 2. Plots 1, 3, 5, 7, 9 and 11 were contaminated with 159 liters (42 gal.) of Corning Grade crude oil and plots 2, 4, 6, 8 and 12 were contaminated with 159 liters (42 gal.) of Pennsylvania Grade crude oil. Plots 13 through 21 were contaminated with 159 liters (42 gal.) of Pennsylvania Grade crude oil and 477 liters (126 gal.) of Clinton sandstone brine with a 160,000 mg/liter concentration of chloride.

Treatment and administration of variables were conducted from August 17, 1995 to October 26, 1995. During this period samples were collected twice from each plot and analyzed for the parameters specified in the contract. The results of those analyses are attached as Appendix 2. The results have not been critically interpreted at this time. On September 7 and September 28, 1995, field measurements were collected for pH and percent soil moisture capacity at each plot (Figure 3). Results of pH measurements revealed the difficulty in raising alkalinity of the site to a desirable level. Results from both sampling events of total petroleum hydrocarbons suggest that crude oil spread on surface is not easily mixed into soils at tillage depth, resulting in considerably variable composite samples from plot to plot.

October 26, 1995 was the last day of activity at the site for the winter months. Remediation activity is expected to be minimal while soil temperature remains below 4.4° C (40° F) and soil is water saturated.

No further research activity is expected through the report period 1/1/95 to 3/31/96 due to weather conditions. By the third quarter of the study period remediation activity should resume. Treatment and monitoring will begin again in late April or early May. The most important treatment will be to apply super fine lime in an effort to increase soil pH to acceptable level for optimum microbe population growth.

MASTER

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STUDY CHRONOLOGY

Task 1
1995

August 15
- Mark and stake selected site 6.1 meters (20 ft.) x 33.5 meters (110 ft.) 22 plots in Mahoning County, Smith Township

Task 2

August 16
- Purchase 20 bags of Tri-14 agricultural fertilizer - $95.00.

August 17
- Purchase MTD front tine 5 hp tiller - $299.00
- Spread 159 liters (42 gal.) of Pennsylvania Grade crude oil evenly on 6 plots and 159 liters (42 gal.) of Corning Grade crude oil on 6 additional plots (12 total plots).
- Till soil after crude oil application to a depth of 15.2 centimeters (6 inches).
- Apply Tri-14 fertilizer 441 kilograms (200 lbs.) evenly on 12 contaminated plots at a rate of 39549 kg/hectare (7260 lb/acre).
- Till soil after fertilizer application to a depth of 15.2 centimeters (6 inches).
- Collect a composite sample from soil contaminated by each crude oil viscosity and a control.

Task 3

August 24
- Till plots on weekly schedule.
- Spread 159 liters (42 gal.) of Pennsylvania Grade crude oil on 20 remaining plots.
- Spread 477 liters (126 gal.) of oilfield brine (Clinton sandstone) on 10 remaining plots.
- Spread horse manure and sawdust 2.54 centimeters thick (1 inch) on designated plots.
- Collect a composite sample of the 20 plots.

August 29
- Purchase 441 Kg (200 lbs.) of gypsum - $29.34.

August 31
- Spread additional 2.54 centimeters (1 inch) of horse manure and sawdust on designated plots.
- Till in additional horse manure and sawdust applied.
- Till plots on weekly schedule.
- Field measure soil moisture and pH of each plot with Kelway soil tester.

September 14	• Till plots on weekly and monthly schedule. • Collect two composite samples from each plot (44 samples) and deliver to Wilson Laboratory along with samples collected on August 17 and 24 (4 samples). • Split four samples of plots 2, 7, 16 and 19 and deliver to Burgess and Niple Laboratory. • Rain gauge measurement 2 mm (0.08 inches)
September 22	• Till plots on weekly schedule. • Rain gauge measurement 5 mm (0.20 inches).
September 28	• Spread 220 kg (50 lb.) of Tri-14 fertilizer on 12 designated plots 222 m^2 (1200 $ft.^2$) or a rate of 9886 kg/hectare (1815 lb./acre). • Tilled plots on weekly schedule. • Field measure soil moisture and pH of each plot with Kelway soil tester. • Rain gauge measurement 0 centimeters (0 inches).
October 5	• No field activity due to inclement weather.
October 12	• Till plots on weekly and monthly schedule. • Collect two composite samples from each plot (44 samples) and 2 deep samples 46-61 centimeters (18-24 inches) to monitor contaminant vertical migration. • Soil temperature 13.7° C (56.6° F). • Rain gauge 60 mm (2.4 inches).
October 26	• Till plots on weekly schedule - difficult soil very muddy. • Soil temperature 7.6° C (45.7° F). • Rain gauge 3 mm (0.12 inches). • End of active season for remediation of hydrocarbons due to soil temperature and soil saturation.

Figure 1

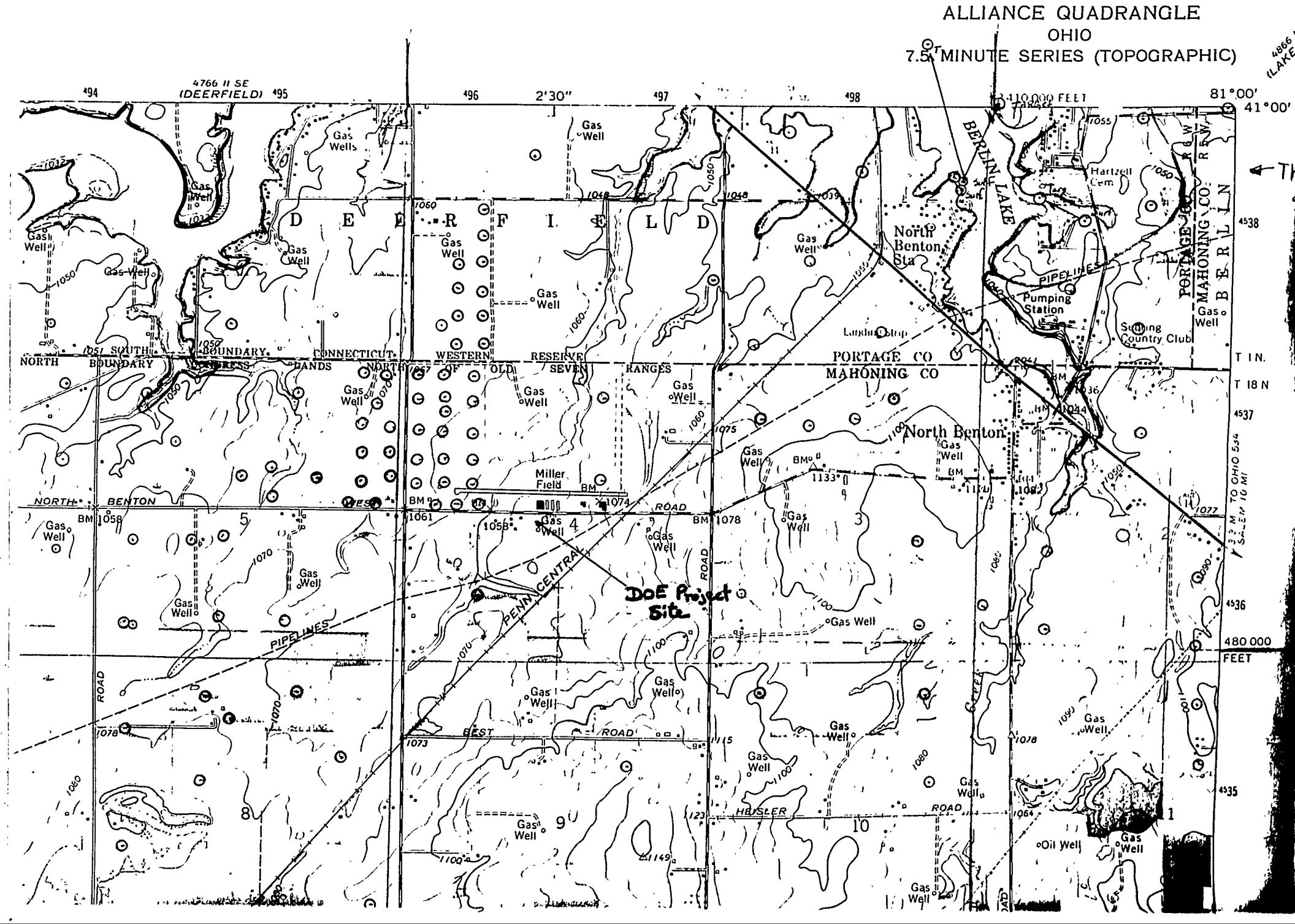
ALLIANCE QUADRANGLE
OHIO
7.5' MINUTE SERIES (TOPOGRAPHIC)
4766 II SE
(DEERFIELD)
2'30"
81°00'
41°00'
410 000 FEET
480 000 FEET
DEERFIELD
BERLIN LAKE
North Benton Sta
Pumping Station
Hartzell Cem
Sunning Country Club
PORTAGE CO
MAHONING CO
BERLIN
T 1 N.
T 18 N
SOUTH BOUNDARY
NORTH BOUNDARY
CONNECTICUT WESTERN RESERVE
LANDS NORTH OF OLD SEVEN RANGES
North Benton
Miller Field
NORTH BENTON WEST ROAD
BEST ROAD
HEISLER ROAD
PENN CENTRAL
PIPELINES
DOE Project Site
Gas Well
Oil Well
Landing Strip
3.3 M TO OHIO 534
SALEM 10 MI

Figure 2
Arrangement of Remediation Plots

Crude Oil Contaminated Area

Pennsylvania Grade Crude Oil
Plots 2, 4, 6, 8, 10 & 12

Corning Crude Oil
Plots 1, 3, 5,7, 9 & 11

2 AW NM OY	4 AW NM ON	6 AW NI OY	8 AW NI ON	10 AM NM OY	12 AM NM ON
1 AW NM OY	3 AW NM ON	5 AW NI OY	7 AW NI ON	9 AM NM OY	11 AM NM ON

Pennsylvania Crude Oil and Brine Contaminated Area

pH Maintained
above 8

pH Maintained
below 7

14 AW NI OY	16 AW NM OY	18 AM NI ON	20 AM NI ON	22 AM NM ON
13 AW NI OY	15 AW NM OY	17 AW NI OY	19 AM NI ON	21 AM NM ON

Legend of Variables on Each Plot

Aeration weekly	AW
Aeration monthly	AM
Nutrients initial only	NI
Nutrients monthly	NM
Organic bulk added	OY
Organic bulk not added	ON

Figure 3

Field Measurements of pH and Percent Soil Moisture Capacity After Aeration

	pH	%	pH	%	pH	%	pH	%	pH	%	pH	%
9-7-95	5.6	95	6.2	90	6.2	70	5.6	100	5.8	70	5.8	100
9-28-95	4.2	100	5.0	100	5.0	100	4.0	100	6.6	70	5.4	100
	2		4		6		8		10		12	
9-7-95	6.2	75	4.7	100	6.2	65	4.2	100	5.4	100	6.3	100
9-28-95	6.6	65	5.3	100	6.4	65	5.4	95	4.6	100	3.8	100
	1		3		5		7		9		11	

	pH	%	pH	%	pH	%	pH	%	pH	%
9-7-95	4.4	100	4.3	100	4.6	100	4.8	100	5.0	100
9-28-95	4.6	100	4.0	100	4.6	100	5.8	100	4.2	100
	14		16		18		20		22	
9-7-95	5.6	100	3.5	100	5.0	100	4.0	100	7.0	45
9-28-95	4.0	100	3.5	100	4.5	100	3.5	100	6.4	70
	13		15		17		19		21	

WILSON
ENVIRONMENTAL LABORATORIES, INC.

MEMBER ACIL

401 Venture Drive • Suite C • Westerville, Ohio 43081 • (614) 431-0010 • Fax: (614) 431-1650

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-1

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 1	Solid	CL	14 SEP 95/12:40	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1340	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.004	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	224	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	1160	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.013	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	130		mg/Kg	499-7	10-02-95	SAH	
Conductivity	98.4		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	549	23.6	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	19.2	2.0	ppm	499-6	09-27-95	DL	
pH	5.68		SU	9045B	09-15-95	DL	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

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SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 1	Solid	CL	14 SEP 95/12:40	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	5530	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	3400	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-28-95
Toluene	11.0	6.0	ug/KG	SW846:8020	09-28-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-28-95
Total Xylenes	<6.0	6.0	ug/KG	SW846:8020	09-28-95

* Detection Limit
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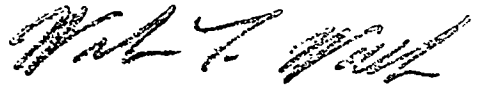

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-2

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 2	Solid	CL	14 SEP 95/12:42	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.007	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1330	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.005	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	224	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0006	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	860	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.015	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	173		mg/Kg	499-7	10-02-95	SAH	
Conductivity	117		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	869	23.8	mg/Kg	351.2	09-21-95	SL	
Total Phosphorus	64.0	2.0	ppm	499-6	09-28-95	DL	
pH	5.48		SU	9045B	09-15-95	ESH	

* Detection Limit
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Lab Number: WE02333-2

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 2	Solid	CL	14 SEP 95/12:42	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	1360	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	4490	40.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	47.9	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	19.1	6.0	ug/KG	SW846:8020	09-29-95

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Lab Number: WE02333-3

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 3	Solid	CL	14 SEP 95/12:44	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1020	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.025	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	120	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0004	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	420	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.011	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	104		mg/Kg	499-7	10-02-95	SAH	
Conductivity	123		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	725	24.0	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	10.8	2.0	ppm	499-6	09-27-95	DL	
pH	5.42		SU	9045B	09-15-95	ESH	

* Detection Limit

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Lab Number: WE02333-3

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 3	Solid	CL	14 SEP 95/12:44	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	<1117	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	2790	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	27.9	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	40.2	6.0	ug/KG	SW846:8020	09-29-95

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Lab Number: WE02333-4

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 4	Solid	CL	14 SEP 95/12:46	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1270	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.059	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	148	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0004	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	680	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.013	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	149		mg/Kg	499-7	10-02-95	SAH	
Conductivity	95.4		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	783	23.0	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	15.5	2.0	ppm	499-6	09-27-95	DL	
pH	4.99		SU	9045B	09-15-95	ESH	

* Detection Limit
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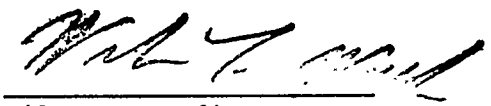

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-4

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 4	Solid	CL	14 SEP 95/12:46	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	<1152	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	7720	40.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-28-95
Toluene	9.03	6.0	ug/KG	SW846:8020	09-28-95
Ethylbenzene	7.16	6.0	ug/KG	SW846:8020	09-28-95
Total Xylenes	13.2	6.0	ug/KG	SW846:8020	09-28-95

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COLUMBUS, OH 43224

Lab Number: WE02333-5

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 5	Solid	CL	14 SEP 95/12:48	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.006	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1160	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.003	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	200	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	1140	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.010	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	152		mg/Kg	499-7	10-02-95	SAH	
Conductivity	134		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	918	23.2	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	31.9	2.0	ppm	499-6	09-27-95	DL	
pH	5.40		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-5

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 5	Solid	CL	14 SEP 95/12:48	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	59200	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	7910	40.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	53.3	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	9.08	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	11.5	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-6

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 6	Solid	CL	14 SEP 95/12:50	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1220	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	180	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	940	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.011	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	152		mg/Kg	499-7	10-02-95	SAH	
Conductivity	138		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	1020	23.1	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	20.7	2.0	ppm	499-6	09-27-95	DL	
pH	5.44		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-6

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 6	Solid	CL	14 SEP 95/12:50	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	53100	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	14000	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	36.2	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	30.8	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-7

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 7	Solid	CL	14 SEP 95/12:52	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1220	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.004	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	142	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0005	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	660	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.019	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	144		mg/Kg	499-7	10-02-95	SAH	
Conductivity	123		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	739	23.9	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	36.0	2.0	ppm	499-6	09-27-95	DL	
pH	5.41		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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Lab Number: WE02333-7

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 7	Solid	CL	14 SEP 95/12:52	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	4830	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	3190	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	46.5	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	11.9	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	151	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-8

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 8	Solid	CL	14 SEP 95/12:54	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1420	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	156	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	960	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.015	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	149		mg/Kg	499-7	10-02-95	SAH	
Conductivity	170		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	1185	23.5	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	33.6	2.0	ppm	499-6	09-28-95	DL	
pH	5.56		SU	9045B	09-15-95	ESH	

* Detection Limit
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COLUMBUS, OH 43224

Lab Number: WE02333-8

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 8	Solid	CL	14 SEP 95/12:54	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	7020	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	4800	40.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	39.5	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	78.2	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	36.9	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-9

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 9	Solid	CL	14 SEP 95/12:56	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1320	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.005	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	230	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	1140	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.012	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	175		mg/Kg	499-7	10-02-95	SAH	
Conductivity	170		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	799	23.2	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	92.8	2.0	ppm	499-6	09-28-95	DL	
pH	6.16		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-9

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 9	Solid	CL	14 SEP 95/12:56	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	31800	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	8290	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	48.4	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	31.8	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	192	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-10

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 10	Solid	CL	14 SEP 95/12:58	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.007	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1450	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.003	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	236	0.3	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	1140	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.012	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	165		mg/Kg	499-7	10-02-95	SAH	
Conductivity	146		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	703	22.8	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	53.2	2.0	ppm	499-6	09-28-95	DL	
pH	5.83		SU	9045B	09-15-95	ESH	

* Detection Limit
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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-10

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 10	Solid	CL	14 SEP 95/12:58	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	10600	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	10300	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	42.9	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	98.9	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-11

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 11	Solid	CL	14 SEP 95/13:00	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	10-04-95	SAH	
Calcium	1040	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.005	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	238	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0003	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	340	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.011	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	531		mg/Kg	499-7	10-02-95	SAH	
Conductivity	182		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP...			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	549	22.3	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	10.8	2.0	ppm	499-6	09-27-95	DL	
pH	4.98		SU	9045B	09-15-95	ESH	

* Detection Limit
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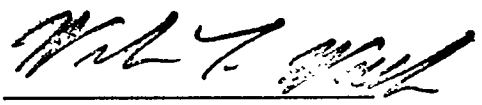

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COLUMBUS, OH 43224

Lab Number: WE02333-11

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 11	Solid	CL	14 SEP 95/13:00	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	8100	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	7350	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	18.2	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	15.1	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	55.6	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit

** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-12

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 12	Solid	CL	14 SEP 95/13:02	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.008	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1830	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.003	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	192	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	500	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.013	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	445		mg/Kg	499-7	10-02-95	SAH	
Conductivity	170		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	760	22.4	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	18.7	2.0	ppm	499-6	09-27-95	DL	
pH	5.72		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-12

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 12	Solid	CL	14 SEP 95/13:02	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	4610	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	7850	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	28.9	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	87.3	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-13

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 13	Solid	CL	14 SEP 95/13:04	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.008	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1750	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.003	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	248	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	520	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.015	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	1770		mg/Kg	499-7	10-02-95	SAH	
Conductivity	322		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP			1311	09-19-95	ESH	
Total Kjeldahl Nitrogen	677	22.4	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	26.2	2.0	ppm	499-6	09-28-95	DL	
pH	6.26		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-13

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 13	Solid	CL	14 SEP 95/13:04	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	9830	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	689	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	17.4	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	50.6	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	10.9	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-14

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 14	Solid	CL	14 SEP 95/13:06	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1500	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	206	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	380	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.011	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	1210		mg/Kg	499-7	10-02-95	SAH	
Conductivity	157		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	392	22.7	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	11.2	2.0	ppm	499-6	09-27-95	DL	
pH	5.98		SU	9045B	09-15-95	ESH	

* Detection Limit

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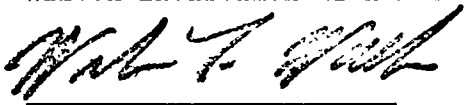

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-14

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 14	Solid	CL	14 SEP 95/13:06	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	67500	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	1940	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	18.7	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	16.2	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	30.6	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-15

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 15	Solid	CL	14 SEP 95/13:08	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1810	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	194	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0008	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	320	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.017	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	1390		mg/Kg	499-7	10-02-95	SAH	
Conductivity	169		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	288	22.4	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	6.0	2.0	ppm	499-6	09-27-95	DL	
pH	6.44		SU	9045B	09-15-95	ESH	

* Detection Limit
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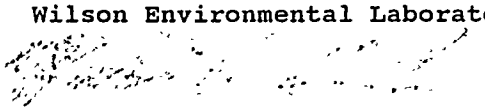

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COLUMBUS, OH 43224

Lab Number: WE02333-15

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 15	Solid	CL	14 SEP 95/13:08	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	2850	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	6130	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<28	28	ug/KG	SW846:8020	09-30-95
Toluene	38.2	28	ug/KG	SW846:8020	09-30-95
Ethylbenzene	65.0	28	ug/KG	SW846:8020	09-30-95
Total Xylenes	783	28	ug/KG	SW846:8020	09-30-95

* Detection Limit
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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-16

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 16	Solid	CL	14 SEP 95/13:10	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	2300	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	330	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0005	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	340	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.016	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	1290		mg/Kg	499-7	10-02-95	SAH	
Conductivity	140		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	164	22.4	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	5.9	2.0	ppm	499-6	09-27-95	DL	
pH	5.97		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-16

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 16	Solid	CL	14 SEP 95/13:10	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	1510	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	6910	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	12.4	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	33.3	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-17

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 17	Solid	CL	14 SEP 95/13:12	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	2460	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.005	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	170	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0003	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	440	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.016	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	2230		mg/Kg	499-7	10-02-95	SAH	
Conductivity	199		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	164	22.5	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	17.0	2.0	ppm	499-6	09-27-95	DL	
pH	6.57		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-17

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 17	Solid	CL	14 SEP 95/13:12	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	6790	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	4350	40.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-29-95
Toluene	27.1	6.0	ug/KG	SW846:8020	09-29-95
Ethylbenzene	18.8	6.0	ug/KG	SW846:8020	09-29-95
Total Xylenes	51.0	6.0	ug/KG	SW846:8020	09-29-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-18

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 18	Solid	CL	14 SEP 95/13:14	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1520	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	<0.001	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	194	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0003	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	300	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.017	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	2200		mg/Kg	499-7	10-02-95	SAH	
Conductivity	131		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	138	22.5	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	11.2	2.0	ppm	499-6	09-27-95	DL	
pH	6.63		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-18

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 18	Solid	CL	14 SEP 95/13:14	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	3930	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	18600	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-30-95
Toluene	8.13	6.0	ug/KG	SW846:8020	09-30-95
Ethylbenzene	16.0	6.0	ug/KG	SW846:8020	09-30-95
Total Xylenes	193	6.0	ug/KG	SW846:8020	09-30-95

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-19

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 19	Solid	CL	14 SEP 95/13:16	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.006	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	2560	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	250	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	0.0007	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	240	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.021	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	2260		mg/Kg	499-7	10-02-95	SAH	
Conductivity	650		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	539	23.4	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	2.6	2.0	ppm	499-6	09-27-95	DL	
pH	6.53		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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Lab Number: WE02333-19

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 19	Solid	CL	14 SEP 95/13:16	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	4100	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	147	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-30-95
Toluene	17.9	6.0	ug/KG	SW846:8020	09-30-95
Ethylbenzene	65.2	6.0	ug/KG	SW846:8020	09-30-95
Total Xylenes	27.6	6.0	ug/KG	SW846:8020	09-30-95

* Detection Limit
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COLUMBUS, OH 43224

Lab Number: WE02333-20

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 20	Solid	CL	14 SEP 95/13:18	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.006	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	2660	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.003	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	164	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	300	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.036	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	1890		mg/Kg	499-7	10-02-95	SAH	
Conductivity	401		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	352	22.6	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	5.0	2.0	ppm	499-6	09-27-95	DL	
pH	7.00		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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Lab Number: WE02333-20

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 20	Solid	CL	14 SEP 95/13:18	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	4590	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	6320	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-30-95
Toluene	42.8	6.0	ug/KG	SW846:8020	09-30-95
Ethylbenzene	16.7	6.0	ug/KG	SW846:8020	09-30-95
Total Xylenes	48.2	6.0	ug/KG	SW846:8020	09-30-95

* Detection Limit
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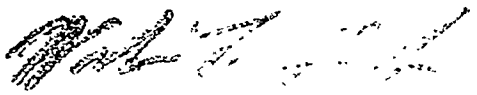

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-21

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 21	Solid	CL	14 SEP 95/13:20	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	1770	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.006	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	232	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	280	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.013	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	146		mg/Kg	499-7	10-02-95	SAH	
Conductivity	59.0		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	225	22.2	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	8.9	2.0	ppm	499-6	09-27-95	DL	
pH	6.72		SU	9045B	09-15-95	ESH	

* Detection Limit
** THE 499 SERIES ELEMENTS ARE REFERENCED FROM THE PUBLICATION "RECOMMENDED CHEMICAL SOIL TEST PROCEDURES" BULLETIN NO.499 "EXTRACTABLE".

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Lab Number: WE02333-21

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 21	Solid	CL	14 SEP 95/13:20	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	4410	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	38700	200	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-30-95
Toluene	38.5	6.0	ug/KG	SW846:8020	09-30-95
Ethylbenzene	<6.0	6.0	ug/KG	SW846:8020	09-30-95
Total Xylenes	118	6.0	ug/KG	SW846:8020	09-30-95

* Detection Limit
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COLUMBUS, OH 43224

Lab Number: WE02333-22

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 22	Solid	CL	14 SEP 95/13:22	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	2480	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.006	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	124	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	440	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.020	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	1680		mg/Kg	499-7	10-02-95	SAH	
Conductivity	307		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	271	22.1.	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	8.9	2.0	ppm	499-6	09-27-95	DL	
pH	6.83		SU	9045B	09-15-95	ESH	

* Detection Limit
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COLUMBUS, OH 43224

Lab Number: WE02333-22

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE 22	Solid	CL	14 SEP 95/13:22	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	2980	1	mg/Kg	415.1	09-25-95
Total Petroleum Hydrocarbons	1990	20.0	mg/KG	418.1	10-17-95
BTEX					
Benzene	<6.0	6.0	ug/KG	SW846:8020	09-30-95
Toluene	32.1	6.0	ug/KG	SW846:8020	09-30-95
Ethylbenzene	12.5	6.0	ug/KG	SW846:8020	09-30-95
Total Xylenes	88.7	6.0	ug/KG	SW846:8020	09-30-95

* Detection Limit
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COLUMBUS, OH 43224

Lab Number: WE02333-23

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE CONTROL SAMPLE	Solid	CL	17 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	1.4	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Calcium	734	0.2	mg/KG	499-7	10-03-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.005	0.001	mg/L	7421	09-28-95	SAH	
Magnesium	168	0.2	mg/KG	499-7	10-03-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
POTASSIUM	40	0.3	mg/KG	499-7	10-03-95	SAH	
Selenium-TCLP	0.012	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Sodium	65.2		mg/Kg	499-7	10-02-95	SAH	
Conductivity	4.6		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
Total Kjeldahl Nitrogen	<22.5	22.5	mg/Kg	351.2	09-21-95	DL	
Total Phosphorus	<2.0	2.0	ppm	499-6	09-27-95	DL	
pH	6.83		SU	9045B	09-15-95	ESH	

* Detection Limit

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-23

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE CONTROL SAMPLE	Solid	CL	17 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Organic Carbon	1990	1	mg/Kg	415.1	09-25-95

* Detection Limit

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-24

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE PENN	Solid	CL	17 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-27-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
Selenium-TCLP	0.017	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Conductivity	270		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
pH	5.77		SU	9045B	09-15-95	ESH	

* Detection Limit

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-24

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE PENN	Solid	CL	17 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	32300	200	mg/KG	418.1	10-17-95

* Detection Limit

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-25

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE CORN	Solid	CL	17 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	<0.005	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.004	0.001	mg/L	7421	09-28-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
Selenium-TCLP	0.012	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Conductivity	74.5		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
pH	5.16		SU	9045B	09-15-95	ESH	

* Detection Limit

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COLUMBUS, OH 43224

Lab Number: WE02333-25

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE CORN	Solid	CL	17 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	18800	200	mg/KG	418.1	10-17-95

* Detection Limit

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-26

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE PENN/BRINE	Solid	CL	24 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Arsenic-TCLP	0.007	0.005	mg/L	7060	09-29-95	SAH	
Barium-TCLP	<1.0	1.0	mg/L	7080	10-02-95	SAH	
Cadmium-TCLP	<0.020	0.020	mg/L	7130	09-26-95	SAH	
Chromium-TCLP	<0.030	0.030	mg/L	7190	09-26-95	SAH	
Lead-TCLP	0.002	0.001	mg/L	7421	09-28-95	SAH	
Mercury-TCLP	<0.0002	0.0002	mg/L	7470	09-30-95	SAH	
Selenium-TCLP	0.028	0.005	mg/L	7740	09-29-95	SAH	
Silver-TCLP	<0.020	0.020	mg/L	7760	10-02-95	SAH	
Conductivity	522		UMHOS/CM	120.1	09-22-95	DL	
TCLP Extraction	COMP.			1311	09-21-95	ESH	
pH	6.39		SU	9045B	09-15-95	ESH	

* Detection Limit

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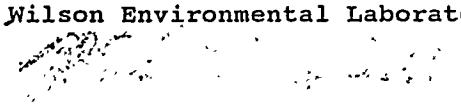

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4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02333-26

PROJECT: MAHONING /DISCOVERY EXCAVATION INC.

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE PENN/BRINE	Solid	CL	24 AUG 95	15 SEP 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	11100	200	mg/KG	418.1	10-17-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

Form 66
Revised: 10/88

WE02333

Ohio Department of Natural Resources
Division of Oil and Gas
Chain of Custody

Reg/Dist ____ / ____

(1)

Lab Wilson Env.

Samples Collected By: David Hodges Title Geology Program Supervisor

County Mahoning Township Smith Permit # ____ Well # ____

Lease Name ____ Surface Owner Discovery Excavation Inc

Registration # ____ License # ____ Hauler ____

Number of Samples Collected: Water ____ Soil 10

Other ____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	[signature]	Geol Prog Supv	09 15 95	13:00
Received By:	[signature]	V. PLES	9/15/95	13:00
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				

	Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only: OEPA Lab. No.	Comments
1 -	C	Maho	DAM	9/14/95	DOE	1	12:40		Spoke w/ Dave Hodges
2 -	C	Maho	DAM	9/14/95	DOE	2	12:42		on 9-20-95 to clarify sampl
3 -	C	Maho	DAM	9/14/95	DOE	3	12:44		requested for SW 9050
4 -	C	Maho	DAM	9/14/95	DOE	4	12:46		will be done in a
5 -	C	Maho	DAM	9/14/95	DOE	5	12:48		modified method
6 -	C	Maho	DAM	9/14/95	DOE	6	12:50		to find specific
7 -	C	Maho	DAM	9/14/95	DOE	7	12:52		conductants.
8 -	C	Maho	DAM	9/14/95	DOE	8	12:54		
9 -	C	Maho	DAM	9/14/95	DOE	9	12:56		
10 -	C	Maho	DAM	9/14/95	DOE	10	12:58		

DNR 5614

Form 66
Revised: 10/88

WE02333

Reg/Dist ____ / ____

Ohio Department of Natural Resources
Division of Oil and Gas
Chain of Custody

(2)

Lab ____

Samples Collected By: David Hodges Title Geology Program Supervisor
County Mahoning Township Smith Permit # ____ Well # ____
Lease Name ____ Surface Owner Discovery Excavation Inc
Registration # ____ License # ____ Hauler ____
Number of Samples Collected: Water ____ Soil 10
Other ____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	[signature]	Geol Prog Sup	09 15 95	13:00
Received By:	[signature]	V. Pres	9/15/95	13:00
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				

	Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only: OEPA Lab. No.	Comments
11	C	Maho	DAM	9/14/95	DOE	11	13:00		
12	C	Maho	DAM	9/14/95	DOE	12	13:02		
13	C	Maho	DAM	9/14/95	DOE	13	13:04		
14	C	Maho	DAM	9/14/95	DOE	14	13:06		
15	C	Maho	DAM	9/14/95	DOE	15	13:08		
16	C	Maho	DAM	9/14/95	DOE	16	13:10		
17	C	Maho	DAM	9/14/95	DOE	17	13:12		
18	C	Maho	DAM	9/14/95	DOE	18	13:14		
19	C	Maho	DAM	9/14/95	DOE	19	13:16		
20	C	Maho	DAM	9/14/95	DOE	20	13:18		

DNR 5614

Form 66
Revised: 10/88

WEO2333

Reg/Dist ____ / ____

Ohio Department of Natural Resources
Division of Oil and Gas
Chain of Custody

(3)

Lab ____

Samples Collected By: David Hedges Title Geology Program Supervisor
County Mahoning Township Smith Permit # ____ Well # ____
Lease Name ____ Surface Owner Discovery Excavating
Registration # ____ License # ____ Hauler ____
Number of Samples Collected: Water ____ Soil 6
Other ____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	[signature]	Geol Prog Supv	09 15 95	15:00
Received By:	[signature]	O. Tech	9/15/95	13:00
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				

Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only: OEPA Lab. No.	Laboratory Use Only: Comments
21 - C	Maho	DAM	9/14/95	DOE	21	13:20		
22 - C	Maho	DAM	9/14/95	DOE	22	13:22		
23 - C	Maho	DAM	8/17/95	DOE	Cont	11:30		
24 - C	Maho	DAM	8/17/95	DOE	Penn	12:50		
25 - C	Maho	DAM	8/17/95	DOE	Corn	12:55		
26 - C	Maho	DAM	8/24/95	DOE	Penn Brine	12:45		
			/ /					
			/ /					
			/ /					
			/ /					

DNR 5614

BURGESS
& NIPLE
LABORATORY

Burgess & Niple, Limited ■ 5085 Reed Road ■ Columbus, OH 43220 ■ 614 459-2050 ■ FAX 614 459-5398

RECEIVED
OCT
DIVISION OF OIL AND GAS

Laboratory Analysis Report

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08805
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #1
Site 2 split

Test Name	Method	Result	Units
Arsenic, TCLP	7060	<0.005	mg/l
Barium, TCLP	7080	0.35	mg/l
Benzene	8020	<2.0	ug/kg
Cadmium, TCLP	7130	<0.05	mg/l
Calcium, Solid		81	mg/kg
Chromium, TCLP	7190	<0.1	mg/l
Conductivity	2510B	630	umhos/cm
Ethylbenzene	8020	<2.0	ug/kg
Lead, TCLP	7421	0.0077	mg/l
Magnesium, Solid	7450	2800	mg/kg
Mercury, TCLP	7471	<0.0002	mg/l
Organic Nitrogen, Distilled	351.3	160	mg/kg
Percent Solids	160.3	86	%
pH, Solid	9045A	7.1	S.U.
Phosphorus, Total	365.2	360	mg/kg
Potassium, Solid	7610	2400	mg/kg
Selenium, TCLP	7740	<0.005	mg/l
Silver, TCLP	7760A	<0.05	mg/l
Toluene	8020	<2.0	ug/kg

BURGESS
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LABORATORY

Burgess & Niple, Limited ■ 5085 Reed Road ■ Columbus, OH 43220 ■ 614 459-2050 ■ FAX 614 459-5398

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08805
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #1

Test Name	Method	Result Units
Total Carbon		3070 mg/kg
Total Petroleum Hydrocarbons, Solid	9071	7800 mg/kg
Xylene	8020	<2.3 ug/kg

Above results are on a dry weight basis.

Reviewed by: William K. Schafer
Burgess & Niple, Limited

BURGESS & NIPLE

LABORATORY

Burgess & Niple, Limited ■ 5085 Reed Road ■ Columbus, OH 43220 ■ 614 459-2050 ■ FAX 614 459-5398

Laboratory Analysis Report

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08806
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #2
Site 7 split

Test Name	Method	Result	Units
Arsenic, TCLP	7060	<0.005	mg/l
Barium, TCLP	7080	0.35	mg/l
Benzene	8020	<2.0	ug/kg
Cadmium, TCLP	7130	<0.05	mg/l
Calcium, Solid		24	mg/kg
Chromium, TCLP	7190	<0.1	mg/l
Conductivity	2510B	500	umhos/cm
Ethylbenzene	8020	<2.0	ug/kg
Lead, TCLP	7421	0.0062	mg/l
Magnesium, Solid	7450	2300	mg/kg
Mercury, TCLP	7471	<0.0002	mg/l
Organic Nitrogen, Distilled	351.3	26	mg/kg
Percent Solids	160.3	87	%
pH, Solid	9045A	6.2	S.U.
Phosphorus, Total	365.2	360	mg/kg
Potassium, Solid	7610	1800	mg/kg
Selenium, TCLP	7740	<0.005	mg/l
Silver, TCLP	7760A	<0.05	mg/l
Toluene	8020	<2.0	ug/kg

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Laboratory Analysis Report
Page 2

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08806
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #2

Test Name	Method	Result Units
Total Carbon		5660 mg/kg
Total Petroleum Hydrocarbons, Solid	9071	6900 mg/kg
Xylene	8020	<2.3 ug/kg

Above results are on a dry weight basis.

Reviewed by: William K. Schafer
Burgess & Niple, Limited

BURGESS & NIPLE

LABORATORY

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Laboratory Analysis Report

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08807
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #3
Site 16 split

Test Name	Method	Result	Units
Arsenic, TCLP	7060	<0.005	mg/l
Barium, TCLP	7080	0.74	mg/l
Benzene	8020	<2.0	ug/kg
Cadmium, TCLP	7130	<0.05	mg/l
Calcium, Solid		150	mg/kg
Chromium, TCLP	7190	<0.1	mg/l
Conductivity	2510B	670	umhos/cm
Ethylbenzene	8020	<2.0	ug/kg
Lead, TCLP	7421	0.0029	mg/l
Magnesium, Solid	7450	2500	mg/kg
Mercury, TCLP	7471	<0.0002	mg/l
Organic Nitrogen, Distilled	351.3	1100	mg/kg
Percent Solids	160.3	90	%
pH, Solid	9045A	6.5	S.U.
Phosphorus, Total	365.2	120	mg/kg
Potassium, Solid	7610	1300	mg/kg
Selenium, TCLP	7740	<0.005	mg/l
Silver, TCLP	7760A	<0.05	mg/l
Toluene	8020	<2.0	ug/kg

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LABORATORY

Burgess & Niple, Limited ■ 5085 Reed Road ■ Columbus, OH 43220 ■ 614 459-2050 ■ FAX 614 459-5398

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08807
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #3

Test Name	Method	Result Units
Total Carbon		9500 mg/kg
Total Petroleum Hydrocarbons, Solid	9071	4500 mg/kg
Xylene	8020	<2.6 ug/kg

Above results are on a dry weight basis.

Reviewed by: William K. Schafer
Burgess & Niple, Limited

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& NIPLE
LABORATORY

Burgess & Niple, Limited ■ 5085 Reed Road ■ Columbus, OH 43220 ■ 614 459-2050 ■ FAX 614 459-5398

Laboratory Analysis Report

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08808
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #4

Site 19 split

Test Name	Method	Result	Units
Arsenic, TCLP	7060	<0.005	mg/l
Barium, TCLP	7080	0.58	mg/l
Benzene	8020	<2.0	ug/kg
Cadmium, TCLP	7130	<0.05	mg/l
Calcium, Solid		410	mg/kg
Chromium, TCLP	7190	<0.1	mg/l
Conductivity	2510B	1300	umhos/cm
Ethylbenzene	8020	<2.0	ug/kg
Lead, TCLP	7421	0.0047	mg/l
Magnesium, Solid	7450	3000	mg/kg
Mercury, TCLP	7471	<0.0002	mg/l
Organic Nitrogen, Distilled	351.3	1400	mg/kg
Percent Solids	160.3	89	%
pH, Solid	9045A	6.9	S.U.
Phosphorus, Total	365.2	170	mg/kg
Potassium, Solid	7610	1900	mg/kg
Selenium, TCLP	7740	<0.005	mg/l
Silver, TCLP	7760A	<0.05	mg/l
Toluene	8020	<2.0	ug/kg

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Laboratory Analysis Report

Water Lab Approval #4032
Bacteria Lab Approval #839
USEPA Lab #OH020

Ohio Dept. of Natural Resources
Division of Oil & Gas
Fountain Square, Building A
Columbus, OH 43224

October 13, 1995

Attention: Mr. David Hodges

Sample Number: 95-08808
Date Collected: September 14, 1995
Date Received: September 15, 1995

Sample Type: SOIL
Description: Discovery #4

Test Name	Method	Result Units
Total Carbon		5920 mg/kg
Total Petroleum Hydrocarbons, Solid	9071	1700 mg/kg
Xylene	8020	<2.5 ug/kg

Above results are on a dry weight basis.

Reviewed by: William K. Schuster
Burgess & Niple, Limited

Form 66
Revised: 10/88

Reg/Dist ____ / ____

Ohio Department of Natural Resources
Division of Oil and Gas
Chain of Custody

Lab ____

Samples Collected By: David Hodges Title Geology Program Supervisor

County Mahoning Township Smith Permit # ____ Well # ____

Lease Name ____ Surface Owner Discovery

Registration # ____ License # ____ Hauler ____

Number of Samples Collected: Water ____ Soil 4

Other ____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	David Hodges	Geol Prog Supv	09 15 95	13:30
Received By:	RPack	B&NO	09 15 95	1330
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				

Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only OEPA Lab. No.	Comments
C	Maho	DAH	9/14/95	Discovery	1	12:42		
C	Maho	DAH	9/14/95	Discovery	2	12:52		
C	Maho	DAH	9/14/95	Discovery	3	13:10		
C	Maho	DAH	9/14/95	Discovery	4	13:16		
			/ /					
			/ /					
			/ /					
			/ /					
			/ /					
			/ /					

DNR 5614

WILSON
ENVIRONMENTAL LABORATORIES, INC.

MEMBER ACIL

401 Venture Drive • Suite C • Westerville, Ohio 43081 • (614) 431-0010 • Fax: (614) 431-1650

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-1

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:16	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.67		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-1

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:16	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	6060	13.2	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-2

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:58	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.50		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-2

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:58	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	7770	14.6	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-3

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:18	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.25		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-3

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:18	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	4330	13.2	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-4

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:56	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.37		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-4

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:56	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	3150	13.4	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-5

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:20	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	6.04		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-5

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:20	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	10400	2700	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-6

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:54	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.64		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-6

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:54	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	14200	276	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-7

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:22	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.50		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-7

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:22	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	4950	13.2	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-8

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:52	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.81		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-8

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:52	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	6710	13.4	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-9

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:24	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.90		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-9

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:24	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	7960	1340	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-10

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:50	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.90		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

Lab Number: WE02418-10

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:50	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	5590	13.8	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-11

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:26	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	5.86		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-11

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:26	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	8320	252	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-12

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:48	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	6.07		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-12

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:48	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	5220	12.6	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-13

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:28	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	950	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	171	10	mg/KG	242.1	10-30-95	SAH	
Sodium	457		mg/KG	273.1	10-30-95	SAH	
pH	6.41		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-13

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:28	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	661	13.0	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-14

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:46	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1080	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	137	10	mg/KG	242.1	10-30-95	SAH	
Sodium	202		mg/KG	273.1	10-30-95	SAH	
pH	6.33		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-14

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:46	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	1590	13.9	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-15

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:30	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1880	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	167	10	mg/KG	242.1	10-30-95	SAH	
Sodium	735		mg/KG	273.1	10-30-95	SAH	
pH	6.64		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-15

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:30	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	9900	13.2	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-16

PROJECT: MAHONING

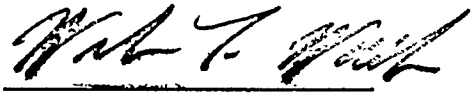
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:44	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1390	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	137	10	mg/KG	242.1	10-30-95	SAH	
Sodium	207		mg/KG	273.1	10-30-95	SAH	
pH	6.31		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.



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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-16

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:44	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	1810	13.6	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-17

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:32	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1430	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	213	10	mg/KG	242.1	10-30-95	SAH	
Sodium	254		mg/KG	273.1	10-30-95	SAH	
pH	6.50		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-17

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:32	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	3750	12.8	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-18

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:42	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1750	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	185	10	mg/KG	242.1	10-30-95	SAH	
Sodium	245		mg/KG	273.1	10-30-95	SAH	
pH	6.70		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-18

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:42	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	9700	13.3	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-19

PROJECT: MAHONING

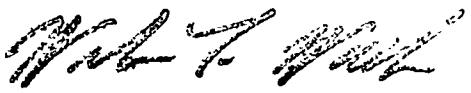
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:34	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	2180	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	239	10	mg/KG	242.1	10-30-95	SAH	
Sodium	602		mg/KG	273.1	10-30-95	SAH	
pH	6.56		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.



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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-19

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:34	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	1650	13.2	mg/KG	418.1	10-23-95

* Detection Limit

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-20

PROJECT: MAHONING

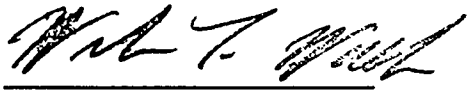
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:40	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	2160	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	164	10	mg/KG	242.1	10-30-95	SAH	
Sodium	603		mg/KG	273.1	10-30-95	SAH	
pH	6.92		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.



Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-20

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:40	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	11100	264	mg/KG	418.1	10-23-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-21

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:36	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1910	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	219	10	mg/KG	242.1	10-30-95	SAH	
Sodium	229		mg/KG	273.1	10-30-95	SAH	
pH	6.59		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-21

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:36	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	10300	13.2	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-22

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:38	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
Calcium	1780	10	mg/KG	215.1	10-30-95	SAH	
Magnesium	141	10	mg/KG	242.1	10-30-95	SAH	
Sodium	381		mg/KG	273.1	10-30-95	SAH	
pH	6.62		SU	9045B	10-20-95	ESS	

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-22

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/11:38	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	4900	13.2	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-23

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/12:00	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	4.39		SU	9045B	10-20-95	ESS	

* Detection Limit

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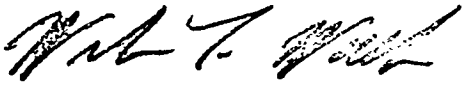

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-23

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/12:00	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	180	12.0	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-24

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/12:10	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED	BY	NOTES
pH	55.40		SU	9045B	10-20-95	ESS	

* Detection Limit

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DAVE HODGES
OHIO DEPT. OF NATURAL RESOURCES
4383 FOUNTAIN SQUARE BLDG. B-3
COLUMBUS, OH 43224

Lab Number: WE02418-24

PROJECT: MAHONING

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
MAHO/DOE	Solid	CL	12 OCT 95/12:10	13 OCT 95

CONSTITUENT	RESULT	*D.L.	UNITS	METHOD	ANALYZED
Total Petroleum Hydrocarbons	<11.4	11.4	mg/KG	418.1	10-24-95

* Detection Limit

Wilson Environmental Laboratories, Inc.

Wilson T. Walker

Form 66
Revised: 10/88

Reg/Dist _____ / _____

Ohio Department of Natural Resources
Division of Oil and Gas
Chain of Custody

Lab _____

Samples Collected By: David A. Hodges Title Geology Program Supervisor

County Mahoning Township Smith Permit # _____ Well # _____

Lease Name _____ Surface Owner Discovery

Registration # _____ License # _____ Hauler _____

Number of Samples Collected: Water _____ Soil 24

Other _____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	David A. Hodges	Geol Prog Super	10 13 95	10:00
Received By:	Lisa Pacifico	Office Manager	10 13 95	10:05 am
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				

Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only: OEPA Lab. No.	Comments
C	Maho	DAA	10/12/95	DOE	11	11:26		
C	Maho	DAA	10/12/95	DOE	12	11:48		
C	Maho	DAA	10/12/95	DOE	13	11:28		2nd ~~to~~ add 13-22
C	Maho	DAA	10/12/95	DOE	14	11:46		ca, mg, sodium +
C	Maho	DAA	10/12/95	DOE	15	11:30		tph, ph
C	Maho	DAA	10/12/95	DOE	16	11:44		23 + 24 tph + ph
C	Maho	DAA	10/12/95	DOE	17	11:32		
C	Maho	DAA	10/12/95	DOE	18	11:42		
C	Maho	DAA	10/12/95	DOE	19	11:34		
C	Maho	DAA	10/12/95	DOE	20	11:40		

DNR 5614

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Ohio Department of Natural Resources
Division of Oil and Gas
Chain of Custody

Lab ____

Samples Collected By: David A. Hodges Title Geology Program Supervisor

County Mahoning Township Smith Permit # ____ Well # ____

Lease Name ____ Surface Owner Discovery

Registration # ____ License # ____ Hauler ____

Number of Samples Collected: Water ____ Soil 24

Other ____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	David A. Hodges	Geol Prog Supv	10 13 95	10:00
Received By:	Lisa Pacifico	Office Manager	10 13 95	10:05
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				

Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only OEPA Lab. No.	Comments
C	Maho	DAH	10/12/95	DOE	1	11:16		
C	Maho	DAH	10/12/95	DOE	2	11:58		
C	Maho	DAH	10/12/95	DOE	3	11:18		
C	Maho	DAH	10/12/95	DOE	4	11:56		
C	Maho	DAH	10/12/95	DOE	5	11:20		
C	Maho	DAH	10/12/95	DOE	6	11:54		
C	Maho	DAH	10/12/95	DOE	7	11:22		
C	Maho	DAH	10/12/95	DOE	8	11:52		
C	Maho	DAH	10/12/95	DOE	9	11:24		
C	Maho	DAH	10/12/95	DOE	10	11:50		

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Division of Oil and Gas
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Lab ____

Samples Collected By: David A. Hodges Title Geology Program Supervisor

County Mahoning Township Smith Permit # ____ Well # ____

Lease Name ____ Surface Owner Discovery

Registration # ____ License # ____ Hauler ____

Number of Samples Collected: Water ____ Soil 24

Other ____

	Signature	Title	Date MM DD YY	Time (Military) HH MM
Turned In By:	David A. Hodges	Geology Program Supervisor	10 13 95	10:00
Received By:	Lisa Pashuta	Office manager	10 13 95	10:05 am
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				
Transferred By:				
Received By:				

Reg/Sec.	Co.	Initials	Date	Site	No.	Collection Time Military H H M M	Laboratory Use Only: OEPA Lab. No.	Comments
C	Maho	DAH	10/12/95	DOE	21	11:36		
C	Maho	DAH	10/12/95	DOE	22	11:38		
C	Maho	DAH	10/12/95	DOE	23	12:08		
C	Maho	DAH	10/12/95	DOE	24	12:10		
			/ /					
			/ /					
			/ /					
			/ /					
			/ /					
			/ /					

DNR 5614