164326

WESTON MANAGERS DESIGNERS/CONSULTANTS
Hawley Building, Suite 436
1025 Main Street, Wheeling, WV 26003 1-304-233-1610

REC

NOV

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-WO-0036

WESTER
SU

MEMORANDUM

TO: Dave Wright, OSC, Region III
Western Response and Oil Enforcement Section

THRU: Bob Parkins, ATATL, Wheeling, WV TDD #9010-53
PCS #1053

FROM: Chuck Fisher, TAT Wheeling, WV

SUBJECT: Trip Report
Penn-DOT, Route 19 Site
Summit Township, Erie Co., Pa.

DATE: October 30, 1990

BACKGROUND

On May 8, 1990, OSC Dave Wright and TAT performed a windshield assessment of the Penn-DOT, Route 19 Site. The site is used for the storage of highway maintenance equipment and supplies. The windshield investigation showed deficiencies in drum storage and spillage of asphalt and oil emulsions and that access to the site is not restricted. It was determined that a preliminary assessment was needed to delineate areas of contamination onsite and offsite.

ASSESSMENT ACTIVITIES

OSC Dave Wright, OSC Jamie Fenske, and TAT arrived on site at 0900 hours, September 19, 1990, and performed a site inspection to determine the sampling locations. TAT members Barney and Piccolo were then instructed to obtain a residential water sample from the Hinkler Residence at 1761 West Townhall Road, Erie, PA, and a sample of the well water supply for the Penn-DOT Site. OSC Wright, OSC Fenske, and TAT obtained the following samples (see attached site sketch for sampling locations):

Station Number	Time Sampled	Analytical Performed
W01	1105 hours	Cyanide/VOA
W02	1125 hours	Cyanide/VOA
S01	1050 hours	Metals/VOA
S02	1100 hours	Metals/VOA

Station Number	Time Sampled	Analytical Performed
S03	1120 hours	Metals/VOA
S04	1145 hours	Metals/VOA
S05	1155 hours	Metals/VOA/BNA
S06	1150 hours	Metals/BNA
S07	1210 hours	Metals
S08	1215 hours	Metals
S09	1225 hours	Metals
S10	1230 hours	Metals

TAT arranged for analysis of the 2 liquid samples and the 10 soil samples. The samples were sent to SSM Laboratories in Reading, PA, September 20, 1990, with a three-week turnaround requested for the analytical results.

ANALYTICAL DATA

On October 15, 1990, TAT received the analytical data (included in this report) from the samples taken during the September 19, 1990, assessment. The data indicated 722 parts per million (ppm) of lead contamination at station S05, 123 ppm of lead at station S09, and 6 parts per billion (ppb) of methylene chloride in the well located onsite.

TOXICOLOGY

The following toxicological information was obtained from the According to NIOSH "Pocket Guide to Chemical Hazards" and the NIOSH "Registry of Toxic Effects of Chemical Substances".

Lead is classified as a priority toxic pollutant by EPA standards and poses a threat to human health through inhalation of dust-sized particles and ingestion. Lead may cause lassitude, insomnia, pallor, anosmia, weight loss, malnutrition, abdominal pain, colic, hypotension, anemia, tremors, and painful joints. The Toxic Dose Low (TDLo) for woman is 450 mg/kg, the quantity in the soil exceeds this level by 272 ppm. The EPA guidelines for lead levels in soils is 500 ppm. Lead is especially toxic to children.

Methylene chloride is also classified as a priority toxic pollutant by EPA standards and poses a threat to human health through inhalation, ingestion, and contact. Methylene chloride may cause fatigue, weakness, light headiness, numbness in the limbs, nausea, eye and skin irritation and vertigo. The compound is a carcinogen. The Maximum Contaminant Level (MCL) for methylene chloride under the Safe Drinking Water Act is 5 ppb.

RECOMMENDATION

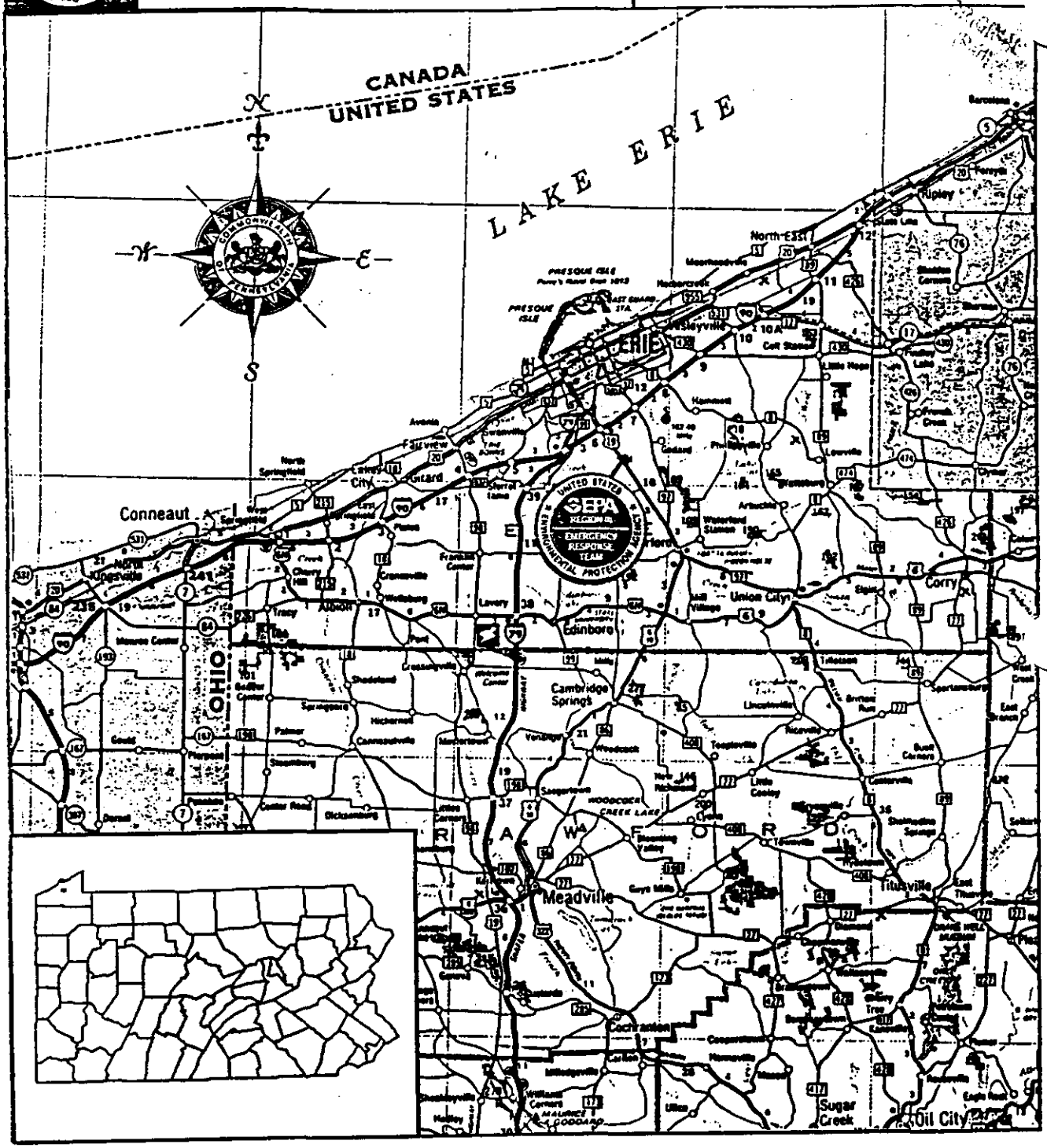
Since residents and workers are possibly exposed to levels of lead and methylene chloride, it is recommended by TAT that an information package be developed for ATSDR review.

ORIGINAL

ATTACHMENTS: Photographs
Site Sketches and Maps
Safety Plan
Analytical Results

WESTON · MPD

TDD Number: 9010-53
PCS Number: 1053

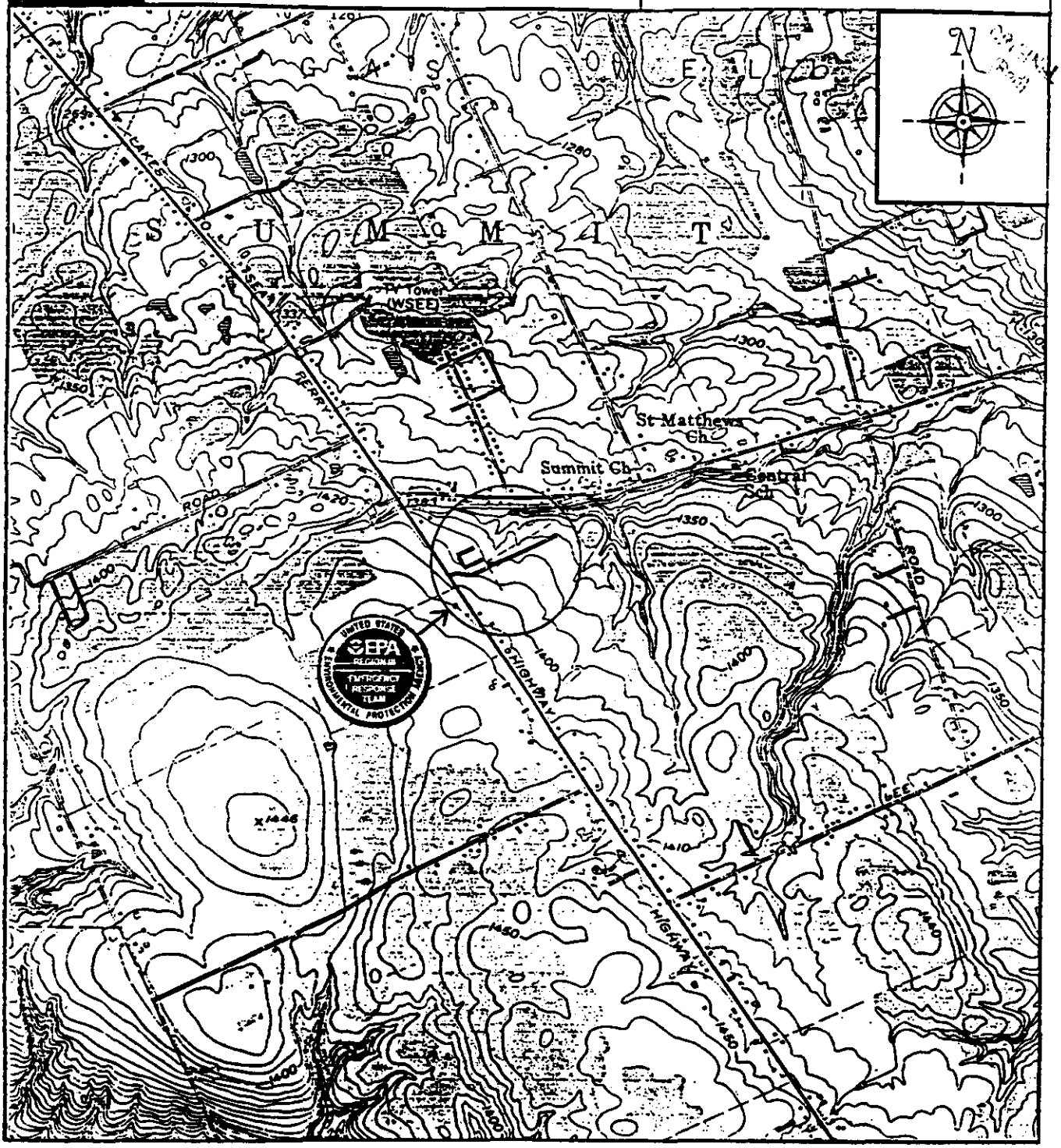


SITE LOCATION MAP
Penn DOT, Route 19 Site
Summit Township Erie County, PA

AR100006

WESTON · MPD

TDD Number: 9010-53
PCS Number: 1053



SITE LOCATION MAP

(South Erie Quadrangle)

Penn DOT Route 19 Site
Summit Township, Erie County, PA

SCALE 1:24 000

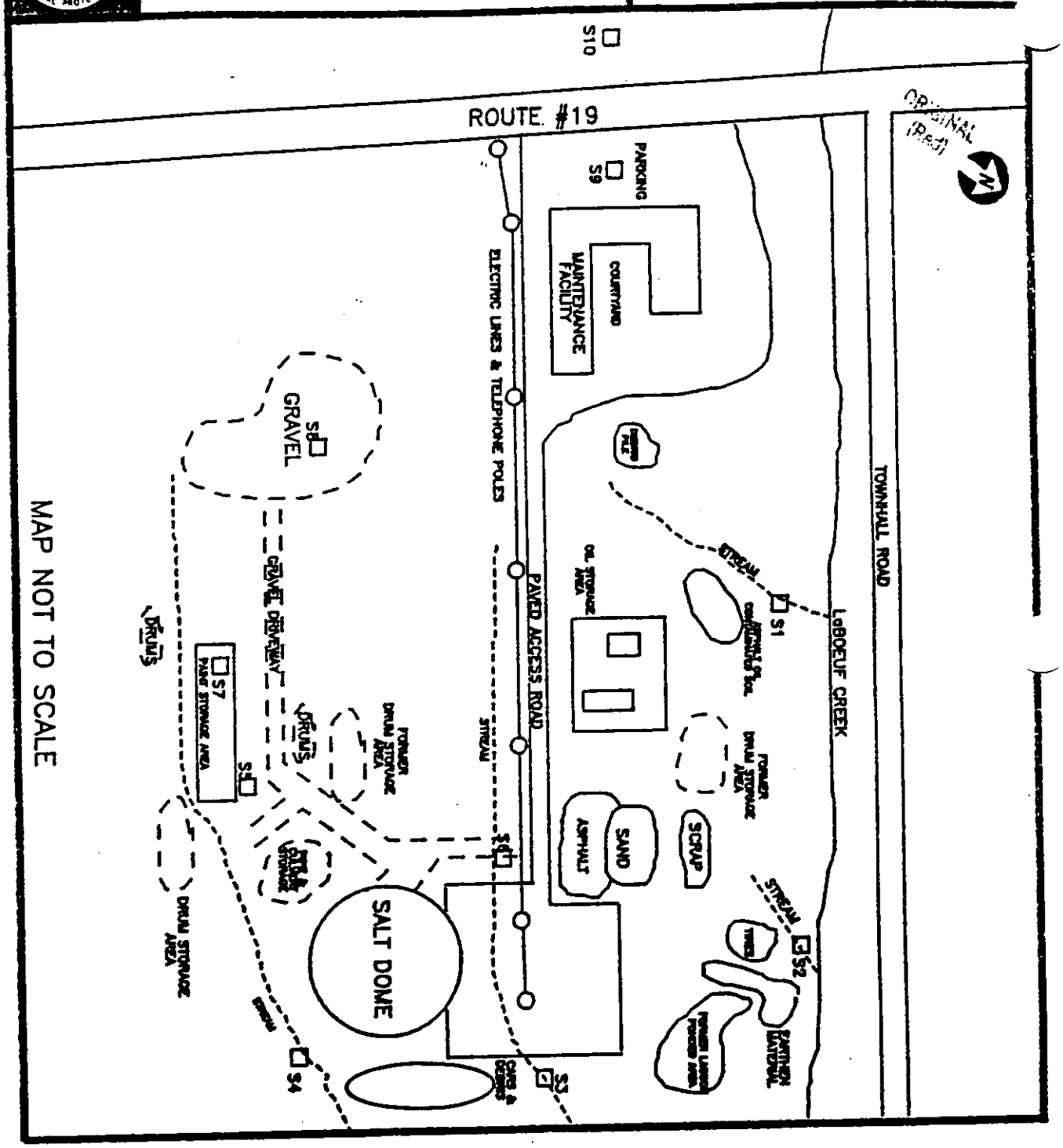
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETER

WESTON · MPD

TDD Number: 9010-53
PCS Number: 1053



SITE LOCATION MAP
Penn DOT, Route 19 Site
Summit Township, Erie County, PA

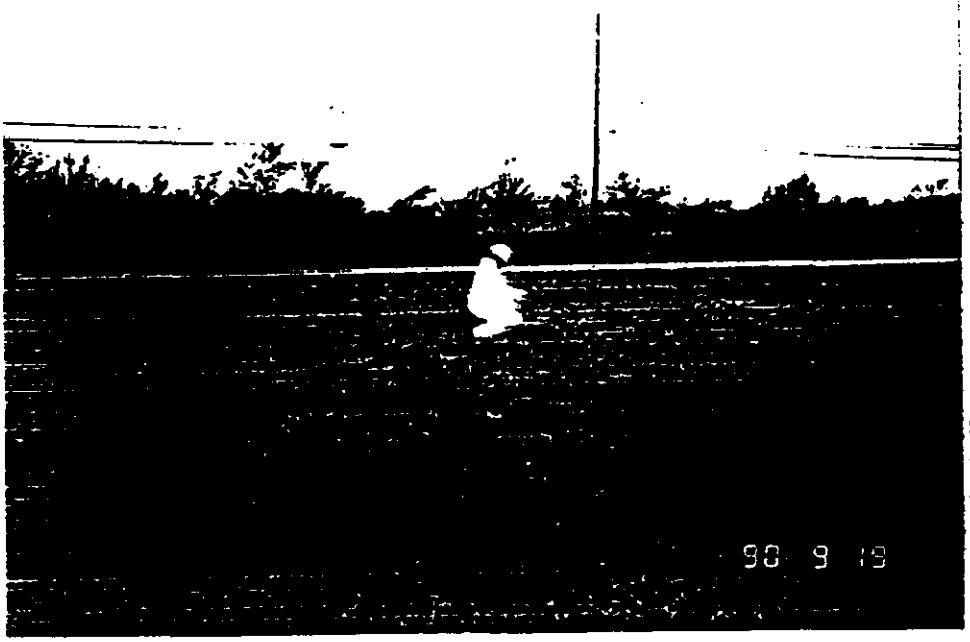
AR100008

ORIGINAL
(Red)

SITE: PENNDOT ROUTE #19 SITE
DATE: SEPTEMBER 19,1990
POS: 1053 TDD:9010-53
REMARK: PHOTO SHOWS COLLECTION OF SAMPLE S5.
REMARK:
REMARK:

AR100009

ORIGINAL
(Red)



SITE: PENNDOT ROUTE #19 SITE
DATE: SEPTEMBER 19,1990
PCS: 1053 TDD:9010-53
REMARK: PHOTO SHOWS TAT PICCOLO COLLECTING SAM-
REMARK: PLE S9.
REMARK:

AR100010

ORIGINAL
(Red)

SITE: PENNDOT ROUTE 313 SITE
DATE: SEPTEMBER 19,1990
PCS: 1053 TDD:9010-53
REMARK: DRAINAGE WATER WELL FOR PENNDOT SITE.
REMARK:
REMARK:

AR100011

SSM/Laboratories

ANALYTICAL DATA QUALITY PACKAGE

FOR

ROY F. WESTON, INC.

PENN DOT ROUTE 19 SITE

PROJECT NUMBER 9009-27

PURCHASE ORDER NUMBER 16-1322

PREPARED BY SSM/LABORATORIES

OCTOBER, 1990

MARIAN MURPHY

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 2
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

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-65

ANALYTICAL DATA PACKAGE

Client: Weston

Project Name: Penn DOT Route 19 Site

Client Designation	SSM Designation
S-1	1001787
S-2	1001788
S-3	1001789
S-4	1001790
S-5	1001791
S-6	1001792
S-7	1001793
S-8	1001794
S-9	1001795
S-10	1001796
W-1	1001797
W-2	1001798

R. Michael Slater
QA Manager

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

CHAIN OF CUSTODY RECORD

ORIGINAL (Red)

PROJ. NO.	PROJECT NAME
9009-27	PENN-DOT Route 19 Site

SAMPLERS: (Signature) Charles M. Fisher
Rebecca L. Barney, Jason Brewer

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	METALS	METALS/BNA	VOA's	CYANIDE			REMARKS
S1	9/19/90	1050		✓	SITE DRAINAGE	3	1		2				8 oz LOT # F9249123
S2	9/19/90	1100		✓	SITE DRAINAGE	3	1		2				40 mL LOT # BB044010
S3	9/19/90	1120		✓	SITE DRAINAGE	3	1		2				
S4	9/19/90	1145		✓	SITE DRAINAGE	3	1		2				
S5	9/19/90	1155		✓	PAINT STORAGE	3		1	2				
S6	9/19/90	1150		✓	SALT DOME	1		1					
S7	9/19/90	1210		✓	PAINT STORAGE	1	1						
S8	9/19/90	1215		✓	GRAVEL AREA	1	1						
S9	9/19/90	1225		✓	FRONT LAWN	1	1						
S10	9/19/90	1230		✓	FIELD	1	1						
W1	9/19/90	1105		✓	HINKLER WELL	4			3	1			
W2	9/19/90	1125		✓	PENNDOT WELL	4			3	1			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Charles M. Fisher	9/20/90 1620				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
FEDEX P	9-21-90 0945	Jay Klein			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; C to Coordinator Field F

433

AR100015

LABORATORY CHRONICLE

SSM SAMPLE DESIGNATION: 100433

ORIGINAL (Red)

ANALYTE	SAMPLE PREPARATION ANALYST	DATE	SAMPLE ANALYSIS ANALYST	DATE
Antimony	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Beryllium	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Cadmium	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Chromium	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Copper	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Lead	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Nickel	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Silver	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Thallium	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Zinc	R. J. Spare	09/22/90	R. J. Spare	09/25/90
Arsenic	R. J. Spare	09/22/90	J. M. Goncher	10/01/90
Selenium	R. J. Spare	09/22/90	J. M. Goncher	10/01/90
Mercury	J. L. Paris	09/25/90	J. L. Paris	09/25/90
Volatiles	R. K. Lakin	09/27-29/90	R. K. Lakin	09/27-29/90
Semivolatiles	K. Mann	09/27/90	S. W. Hinnershitz	10/10/90

REVIEW AND APPROVAL:	SIGNATURE	DATE
INORGANICS	R. J. Spare, Group Leader	10/12/90
ORGANICS	S. W. Hinnershitz, Group Leader	10/12/90
QUALITY ASSURANCE	R. M. Slater, QA Manager	

labchrn2.wk1

METHODOLOGY SUMMARY
FOR

CLIENT: Weston

ORIGINAL (Red)

ANALYTE	METHOD REFERENCE	BRIEF DESCRIPTION OF METHOD
Antimony	7040	AA, Direct Aspiration
Beryllium	7090	AA, Direct Aspiration
Cadmium	7130	AA, Direct Aspiration
Chromium	7190	AA, Direct Aspiration
Copper	7210	AA, Direct Aspiration
Lead	7420	AA, Direct Aspiration
Nickel	7520	AA, Direct Aspiration
Silver	7760	AA, Direct Aspiration
Thallium	7840	AA, Direct Aspiration
Zinc	7950	AA, Direct Aspiration
Arsenic	7061	AA, Direct Aspiration
Selenium	7740	AA, Direct Aspiration
Mercury	7471	AA, Direct Aspiration
Purgeables	8240	GC/MS, Purge and Trap
Semivolatiles	8270	GC/MS, Sonication Ext.

METH.WK1

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001787
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-1

SAMPLE DESCRIPTION: Site Drainage

SAMPLING DATE: 19-SEP-90 TIME: 10:50 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	13.5
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	9.99
Copper	mg/kg	18.4
Lead	mg/kg	13.
Mercury	mg/kg	< 0.10
Nickel	mg/kg	18.3
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	56.4
Purgeable Hydrocarbons		
Acrolein	ug/kg	< 80.
Acrylonitrile	ug/kg	< 80.
Benzene	ug/kg	< 5.
Bromomethane	ug/kg	< 10.
Bromodichloromethane	ug/kg	< 5.
Bromoform	ug/kg	< 5.
Carbon tetrachloride	ug/kg	< 5.
Chlorobenzene	ug/kg	< 5.
Chloroethane	ug/kg	< 10.
2-Chloroethylvinyl ether	ug/kg	< 10.

AR100018

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001787 S-1
PROJECT: 100433

Chloroform	ug/kg	< 5.
Chloromethane	ug/kg	< 10.
Dibromochloromethane	ug/kg	< 5.
1,2-Dichlorobenzene	ug/kg	< 5.
1,3-Dichlorobenzene	ug/kg	< 5.
1,4-Dichlorobenzene	ug/kg	< 5.
1,1-Dichloroethane	ug/kg	< 5.
1,2-Dichloroethane	ug/kg	< 5.
1,1-Dichloroethene	ug/kg	< 5.
Trans-1,2-dichloroethene	ug/kg	< 5.
1,2-Dichloropropane	ug/kg	< 5.
cis-1,3-Dichloropropene	ug/kg	< 5.
trans-1,3-Dichloropropene	ug/kg	< 5.
Ethylbenzene	ug/kg	< 5.
Methylene chloride	ug/kg	< 5.
1,1,2,2-Tetrachloroethane	ug/kg	< 5.
Tetrachloroethene	ug/kg	< 5.
1,1,1-Trichloroethane	ug/kg	< 5.
1,1,2-Trichloroethane	ug/kg	< 5.
Trichloroethene	ug/kg	< 5.
Trichlorofluoromethane	ug/kg	< 5.
Toluene	ug/kg	< 5.
Vinyl chloride	ug/kg	< 10.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz
Group Leader, Organics

AR100019

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 215/376-8522
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001788
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-2

SAMPLE DESCRIPTION: Site Drainage

SAMPLING DATE: 19-SEP-90 TIME: 11:00 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	3.97
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	6.46
Copper	mg/kg	21.7
Lead	mg/kg	< 8.
Mercury	mg/kg	< 0.10
Nickel	mg/kg	14.9
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	86.
Purgeable Hydrocarbons		
Acrolein	ug/kg	< 80.
Acrylonitrile	ug/kg	< 80.
Benzene	ug/kg	< 5.
Bromomethane	ug/kg	< 10.
Bromodichloromethane	ug/kg	< 5.
Bromoform	ug/kg	< 5.
Carbon tetrachloride	ug/kg	< 5.
Chlorobenzene	ug/kg	< 5.
Chloroethane	ug/kg	< 10.

AR100020

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001788 S-2
PROJECT: 100433

2-Chloroethylvinyl ether	ug/kg	< 10.
Chloroform	ug/kg	< 5.
Chloromethane	ug/kg	< 10.
Dibromochloromethane	ug/kg	< 5.
1,2-Dichlorobenzene	ug/kg	< 5.
1,3-Dichlorobenzene	ug/kg	< 5.
1,4-Dichlorobenzene	ug/kg	< 5.
1,1-Dichloroethane	ug/kg	< 5.
1,2-Dichloroethane	ug/kg	< 5.
1,1-Dichloroethene	ug/kg	< 5.
Trans-1,2-dichloroethene	ug/kg	< 5.
1,2-Dichloropropane	ug/kg	< 5.
cis-1,3-Dichloropropene	ug/kg	< 5.
trans-1,3-Dichloropropene	ug/kg	< 5.
Ethylbenzene	ug/kg	< 5.
Methylene chloride	ug/kg	< 5.
1,1,2,2-Tetrachloroethane	ug/kg	< 5.
Tetrachloroethene	ug/kg	< 5.
1,1,1-Trichloroethane	ug/kg	< 5.
1,1,2-Trichloroethane	ug/kg	< 5.
Trichloroethene	ug/kg	< 5.
Trichlorofluoromethane	ug/kg	< 5.
Toluene	ug/kg	< 5.
Vinyl chloride	ug/kg	< 10.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100021

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 215/376-8523
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001789
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-3

SAMPLE DESCRIPTION: Site Drainage

SAMPLING DATE: 19-SEP-90 TIME: 11:20 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	5.17
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	11.1
Copper	mg/kg	18.7
Lead	mg/kg	11.
Mercury	mg/kg	< 0.10
Nickel	mg/kg	17.4
Selenium	mg/kg	0.20
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	72.7
Purgeable Hydrocarbons		
Acrolein	ug/kg	< 80.
Acrylonitrile	ug/kg	< 80.
Benzene	ug/kg	< 5.
Bromomethane	ug/kg	< 10.
Bromodichloromethane	ug/kg	< 5.
Bromoform	ug/kg	< 5.
Carbon tetrachloride	ug/kg	< 5.
Chlorobenzene	ug/kg	< 5.
Chloroethane	ug/kg	< 10.

AR100022

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001789 S-3
PROJECT: 100433

2-Chloroethylvinyl ether	ug/kg	< 10.
Chloroform	ug/kg	< 5.
Chloromethane	ug/kg	< 10.
Dibromochloromethane	ug/kg	< 5.
1,2-Dichlorobenzene	ug/kg	< 5.
1,3-Dichlorobenzene	ug/kg	< 5.
1,4-Dichlorobenzene	ug/kg	< 5.
1,1-Dichloroethane	ug/kg	< 5.
1,2-Dichloroethane	ug/kg	< 5.
1,1-Dichloroethene	ug/kg	< 5.
Trans-1,2-dichloroethene	ug/kg	< 5.
1,2-Dichloropropane	ug/kg	< 5.
cis-1,3-Dichloropropene	ug/kg	< 5.
trans-1,3-Dichloropropene	ug/kg	< 5.
Ethylbenzene	ug/kg	< 5.
Methylene chloride	ug/kg	< 5.
1,1,2,2-Tetrachloroethane	ug/kg	< 5.
Tetrachloroethene	ug/kg	< 5.
1,1,1-Trichloroethane	ug/kg	< 5.
1,1,2-Trichloroethane	ug/kg	< 5.
Trichloroethene	ug/kg	< 5.
Trichlorofluoromethane	ug/kg	< 5.
Toluene	ug/kg	< 5.
Vinyl chloride	ug/kg	< 10.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100023

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 215/376-8522
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001790
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-4

SAMPLE DESCRIPTION: Site Drainage

SAMPLING DATE: 19-SEP-90 TIME: 11:45 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	4.54
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	7.41
Copper	mg/kg	33.8
Lead	mg/kg	15.5
Mercury	mg/kg	< 0.10
Nickel	mg/kg	19.9
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	122.
Purgeable Hydrocarbons		
Acrolein	ug/kg	< 80.
Acrylonitrile	ug/kg	< 80.
Benzene	ug/kg	< 5.
Bromomethane	ug/kg	< 10.
Bromodichloromethane	ug/kg	< 5.
Bromoform	ug/kg	< 5.
Carbon tetrachloride	ug/kg	< 5.
Chlorobenzene	ug/kg	< 5.
Chloroethane	ug/kg	< 10.

AR100024

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001790 S-4
PROJECT: 100433

2-Chloroethylvinyl ether	ug/kg	< 10.
Chloroform	ug/kg	< 5.
Chloromethane	ug/kg	< 10.
Dibromochloromethane	ug/kg	< 5.
1,2-Dichlorobenzene	ug/kg	< 5.
1,3-Dichlorobenzene	ug/kg	< 5.
1,4-Dichlorobenzene	ug/kg	< 5.
1,1-Dichloroethane	ug/kg	< 5.
1,2-Dichloroethane	ug/kg	< 5.
1,1-Dichloroethene	ug/kg	< 5.
Trans-1,2-dichloroethene	ug/kg	< 5.
1,2-Dichloropropane	ug/kg	< 5.
cis-1,3-Dichloropropene	ug/kg	< 5.
trans-1,3-Dichloropropene	ug/kg	< 5.
Ethylbenzene	ug/kg	< 5.
Methylene chloride	ug/kg	< 5.
1,1,2,2-Tetrachloroethane	ug/kg	< 5.
Tetrachloroethene	ug/kg	< 5.
1,1,1-Trichloroethane	ug/kg	< 5.
1,1,2-Trichloroethane	ug/kg	< 5.
Trichloroethene	ug/kg	< 5.
Trichlorofluoromethane	ug/kg	< 5.
Toluene	ug/kg	< 5.
Vinyl chloride	ug/kg	< 10.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100025

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 215/376-8522
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001791
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-5

SAMPLE DESCRIPTION: Paint Storage

SAMPLING DATE: 19-SEP-90 TIME: 11:55 BY: Chuck Fisher

	UNITS	RESULT
BN/A Extraction of Solid Samples		
Moisture	%	13.0
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	2.75
Beryllium	mg/kg	17.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	117.
Copper	mg/kg	1090.
Lead	mg/kg	722.
Mercury	mg/kg	< 0.10
Nickel	mg/kg	308.
Selenium	mg/kg	0.39
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	6780.
Purgeable Hydrocarbons		
Acrolein	ug/Kg	< 80.
Acrylonitrile	ug/Kg	< 80.
Benzene	ug/Kg	< 5.
Bromomethane	ug/Kg	< 10.
Bromodichloromethane	ug/Kg	< 5.
Bromoform	ug/Kg	< 5.
Carbon tetrachloride	ug/Kg	< 5.

AR100026

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001791 S-5
PROJECT: 100433

Chlorobenzene	ug/Kg	< 5.
Chloroethane	ug/Kg	< 10.
2-Chloroethylvinyl ether	ug/Kg	< 10.
Chloroform	ug/Kg	< 5.
Chloromethane	ug/Kg	< 10.
Dibromochloromethane	ug/Kg	< 5.
1,2-Dichlorobenzene	ug/Kg	< 5.
1,3-Dichlorobenzene	ug/Kg	< 5.
1,4-Dichlorobenzene	ug/Kg	< 5.
1,1-Dichloroethane	ug/Kg	< 5.
1,2-Dichloroethane	ug/Kg	< 5.
1,1-Dichloroethene	ug/Kg	< 5.
Trans-1,2-dichloroethene	ug/Kg	< 5.
1,2-Dichloropropane	ug/Kg	< 5.
cis-1,3-Dichloropropene	ug/Kg	< 5.
trans-1,3-Dichloropropene	ug/Kg	< 5.
Ethylbenzene	ug/Kg	< 5.
Methylene chloride	ug/Kg	< 5.
1,1,2,2-Tetrachloroethane	ug/Kg	< 5.
Tetrachloroethene	ug/Kg	< 5.
1,1,1-Trichloroethane	ug/Kg	< 5.
1,1,2-Trichloroethane	ug/Kg	< 5.
Trichloroethene	ug/Kg	< 5.
Trichlorofluoromethane	ug/Kg	< 5.
Toluene	ug/Kg	< 5.
Vinyl chloride	ug/Kg	< 10.
HSL BN/A Extractables		
Acenaphthene	ug/Kg	< 330.
Acenaphthylene	ug/Kg	< 330.
Anthracene	ug/Kg	< 330.
Benzo[a]anthracene	ug/Kg	< 330.
Benzo[b]fluoranthene	ug/Kg	< 330.
Benzo[k]fluoranthene	ug/Kg	< 330.
Benzo[a]pyrene	ug/Kg	< 330.
Benzo[g,h,i]perylene	ug/Kg	< 330.
Benzoic acid	ug/Kg	< 1650.
Benzyl alcohol	ug/Kg	< 330.
Benzyl butyl phthalate	ug/Kg	< 330.
Bis(2-chloroethyl)ether	ug/Kg	< 330.
Bis(2-chloroethoxy)methane	ug/Kg	< 330.
Bis(2-ethylhexyl)phthalate	ug/Kg	< 330.
Bis(2-chloroisopropyl)ether	ug/Kg	< 330.
4-Bromophenyl phenyl ether	ug/Kg	< 330.
4-Chloroaniline	ug/Kg	< 330.
2-Chloronaphthalene	ug/Kg	< 330.

AR100027

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001791 S-5
PROJECT: 100433

4-Chlorophenyl phenyl ether	ug/Kg	< 330.
Chrysene	ug/Kg	< 330.
Dibenzo[a,h]anthracene	ug/Kg	< 330.
Dibenzofuran	ug/Kg	< 330.
Di-n-butylphthalate	ug/Kg	< 330.
1,3-Dichlorobenzene	ug/Kg	< 330.
1,2-Dichlorobenzene	ug/Kg	< 330.
1,4-Dichlorobenzene	ug/Kg	< 330.
3,3'-Dichlorobenzidine	ug/Kg	< 660.
Diethyl phthalate	ug/Kg	< 330.
Dimethyl phthalate	ug/Kg	< 330.
2,4-Dinitrotoluene	ug/Kg	< 330.
2,6-Dinitrotoluene	ug/Kg	< 330.
Di-n-octylphthalate	ug/Kg	< 330.
Fluoranthene	ug/Kg	< 330.
Fluorene	ug/Kg	< 330.
Hexachlorobenzene	ug/Kg	< 330.
Hexachlorobutadiene	ug/Kg	< 330.
Hexachlorocyclopentadiene	ug/Kg	< 330.
Hexachloroethane	ug/Kg	< 330.
Indeno[1,2,3-cd]pyrene	ug/Kg	< 330.
Isophorone	ug/Kg	< 330.
2-Methylnaphthalene	ug/Kg	< 330.
Naphthalene	ug/Kg	< 330.
2-Nitroaniline	ug/Kg	< 1650.
3-Nitroaniline	ug/Kg	< 1650.
4-Nitroaniline	ug/Kg	< 1650.
Nitrobenzene	ug/Kg	< 330.
n-Nitrosodi-n-propylamine	ug/Kg	< 330.
n-Nitrosodiphenylamine	ug/Kg	< 330.
Phenanthrene	ug/Kg	< 330.
Pyrene	ug/Kg	< 330.
1,2,4-Trichlorobenzene	ug/Kg	< 330.
4-Chloro-3-methylphenol	ug/Kg	< 330.
2-Chlorophenol	ug/Kg	< 330.
2,4-Dichlorophenol	ug/Kg	< 330.
2,4-Dimethylphenol	ug/Kg	< 330.
2,4-Dinitrophenol	ug/Kg	< 330.
2-Methyl-4,6-dinitrophenol	ug/Kg	< 1650.
2-Methylphenol	ug/Kg	< 330.
4-Methylphenol	ug/Kg	< 330.
2-Nitrophenol	ug/Kg	< 330.
4-Nitrophenol	ug/Kg	< 1650.
Pentachlorophenol	ug/Kg	< 1650.
Phenol	ug/Kg	< 330.

AR100028

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001791 S-5
PROJECT: 100433

2,4,5-Trichlorophenol	ug/Kg	< 330.
2,4,6-Trichlorophenol	ug/Kg	< 330.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100029

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 215/376-8522
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001792
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-6

SAMPLE DESCRIPTION: Salt Dome

SAMPLING DATE: 19-SEP-90 TIME: 11:50 BY: Chuck Fisher

	UNITS	RESULT
BN/A Extraction of Solid Samples		
Moisture	%	10.8
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	4.69
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	6.44
Copper	mg/kg	24.6
Lead	mg/kg	22.
Mercury	mg/kg	< 0.10
Nickel	mg/kg	16.1
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	76.9
HSL BN/A Extractables		
Acenaphthene	ug/Kg	< 330.
Acenaphthylene	ug/Kg	< 330.
Anthracene	ug/Kg	< 330.
Benzo[a]anthracene	ug/Kg	< 330.
Benzo[b]fluoranthene	ug/Kg	< 330.
Benzo[k]fluoranthene	ug/Kg	< 330.
Benzo[a]pyrene	ug/Kg	< 330.

AR100030

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001792 S-6
PROJECT: 100433

Benzo[g,h,i]perylene	ug/Kg	< 330.
Benzoic acid	ug/Kg	< 1600.
Benzyl alcohol	ug/Kg	< 330.
Benzyl butyl phthalate	ug/Kg	< 330.
Bis(2-chloroethyl)ether	ug/Kg	< 330.
Bis(2-chloroethoxy)methane	ug/Kg	< 330.
Bis(2-ethylhexyl)phthalate	ug/Kg	< 330.
Bis(2-chloroisopropyl)ether	ug/Kg	< 330.
4-Bromophenyl phenyl ether	ug/Kg	< 330.
4-Chloroaniline	ug/Kg	< 330.
2-Chloronaphthalene	ug/Kg	< 330.
4-Chlorophenyl phenyl ether	ug/Kg	< 330.
Chrysene	ug/Kg	< 330.
Dibenzo[a,h]anthracene	ug/Kg	< 330.
Dibenzofuran	ug/Kg	< 330.
Di-n-butylphthalate	ug/Kg	< 330.
1,3-Dichlorobenzene	ug/Kg	< 330.
1,2-Dichlorobenzene	ug/Kg	< 330.
1,4-Dichlorobenzene	ug/Kg	< 330.
3,3'-Dichlorobenzidine	ug/Kg	< 660.
Diethyl phthalate	ug/Kg	< 330.
Dimethyl phthalate	ug/Kg	< 330.
2,4-Dinitrotoluene	ug/Kg	< 330.
2,6-Dinitrotoluene	ug/Kg	< 330.
Di-n-octylphthalate	ug/Kg	< 330.
Fluoranthene	ug/Kg	< 330.
Fluorene	ug/Kg	< 330.
Hexachlorobenzene	ug/Kg	< 330.
Hexachlorobutadiene	ug/Kg	< 330.
Hexachlorocyclopentadiene	ug/Kg	< 330.
Hexachloroethane	ug/Kg	< 330.
Indeno[1,2,3-cd]pyrene	ug/Kg	< 330.
Isophorone	ug/Kg	< 330.
2-Methylnaphthalene	ug/Kg	< 330.
Naphthalene	ug/Kg	< 330.
2-Nitroaniline	ug/Kg	< 1600.
3-Nitroaniline	ug/Kg	< 1600.
4-Nitroaniline	ug/Kg	< 1600.
Nitrobenzene	ug/Kg	< 330.
n-Nitrosodi-n-propylamine	ug/Kg	< 330.
n-Nitrosodiphenylamine	ug/Kg	< 330.
Phenanthrene	ug/Kg	< 330.
Pyrene	ug/Kg	< 330.
1,2,4-Trichlorobenzene	ug/Kg	< 330.
4-Chloro-3-methylphenol	ug/Kg	< 1600.

AR100031

SSM/Laboratories

ORIGINAL (Red)

CLIENT: Weston
SAMPLE: 1001792 S-6
PROJECT: 100433

2-Chlorophenol	ug/Kg	< 330.
2,4-Dichlorophenol	ug/Kg	< 330.
2,4-Dimethylphenol	ug/Kg	< 330.
2,4-Dinitrophenol	ug/Kg	< 330.
2-Methyl-4,6-dinitrophenol	ug/Kg	< 1600.
2-Methylphenol	ug/Kg	< 330.
4-Methylphenol	ug/Kg	< 330.
2-Nitrophenol	ug/Kg	< 330.
4-Nitrophenol	ug/Kg	< 1600.
Pentachlorophenol	ug/Kg	< 1600.
Phenol	ug/Kg	< 330.
2,4,5-Trichlorophenol	ug/Kg	< 330.
2,4,6-Trichlorophenol	ug/Kg	< 330.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100032

30 Noble Street ■ P.O. Box 6527 ■ Reading, PA 19611-0527 ■ 215/376-4595 or 215/376-6581 ■ Fax: 215/376-8522
Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001793
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-7

SAMPLE DESCRIPTION: Paint Storage

SAMPLING DATE: 19-SEP-90 TIME: 12:10 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	4.07
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	14.5
Copper	mg/kg	31.6
Lead	mg/kg	28.1
Mercury	mg/kg	< 0.10
Nickel	mg/kg	21.9
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	84.3

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100033

SSM/Laboratories

ANALYTICAL REPORT

ORIGINAL

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001794
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-8

SAMPLE DESCRIPTION: Gravel Area

SAMPLING DATE: 19-SEP-90 TIME: 12:15 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	3.48
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	6.33
Copper	mg/kg	10.3
Lead	mg/kg	17.3
Mercury	mg/kg	< 0.10
Nickel	mg/kg	15.8
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	35.5

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz
Group Leader, Organics

AR100034

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Engineering Offices in Baltimore, Lehigh Valley, Reading and Trenton.

SSM/Laboratories

ANALYTICAL REPORT

ORIGINAL (Red)

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001795
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-9

SAMPLE DESCRIPTION: Front Lawn

SAMPLING DATE: 19-SEP-90 TIME: 12:25 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	18.7
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	4.44
Chromium	mg/kg	22.7
Copper	mg/kg	31.
Lead	mg/kg	123.
Mercury	mg/kg	0.535
Nickel	mg/kg	18.3
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	150.

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz
Group Leader, Organics

AR100035

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001796
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: S-10

SAMPLE DESCRIPTION: Field

SAMPLING DATE: 19-SEP-90 TIME: 12:30 BY: Chuck Fisher

	UNITS	RESULT
PRIORITY POLLUTANT METALS - SOLIDS		
Antimony	mg/kg	< 20.
Arsenic	mg/kg	3.39
Beryllium	mg/kg	< 1.2
Cadmium	mg/kg	< 1.2
Chromium	mg/kg	8.2
Copper	mg/kg	5.92
Lead	mg/kg	< 8.
Mercury	mg/kg	< 0.10
Nickel	mg/kg	12.3
Selenium	mg/kg	< 0.08
Silver	mg/kg	< 2.4
Thallium	mg/kg	< 20.
Zinc	mg/kg	69.7

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100036

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001797
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: W-1

SAMPLE DESCRIPTION: Hinkler Well

SAMPLING DATE: 19-SEP-90 TIME: 11:05 BY: Chuck Fisher

	UNITS	RESULT
Purgeable Hydrocarbons		
Acrolein	ug/l	< 80.
Acrylonitrile	ug/l	< 80.
Benzene	ug/l	< 5.
Bromomethane	ug/l	< 10.
Bromodichloromethane	ug/l	< 5.
Bromoform	ug/l	< 5.
Carbon tetrachloride	ug/l	< 5.
Chlorobenzene	ug/l	< 5.
Chloroethane	ug/l	< 10.
2-Chloroethylvinyl ether	ug/l	< 10.
Chloroform	ug/l	< 5.
Chloromethane	ug/l	< 10.
Dibromochloromethane	ug/l	< 5.
1,2-Dichlorobenzene	ug/l	< 5.
1,3-Dichlorobenzene	ug/l	< 5.
1,4-Dichlorobenzene	ug/l	< 5.
1,1-Dichloroethane	ug/l	< 5.
1,2-Dichloroethane	ug/l	< 5.
1,1-Dichloroethene	ug/l	< 5.
Trans-1,2-dichloroethene	ug/l	< 5.
1,2-Dichloropropane	ug/l	< 5.
cis-1,3-Dichloropropene	ug/l	< 5.
trans-1,3-Dichloropropene	ug/l	< 5.
Ethylbenzene	ug/l	< 5.
Methylene chloride	ug/l	< 5.

AR100037

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001797 W-1
PROJECT: 100433

1,1,2,2-Tetrachloroethane	ug/l	< 5.
Tetrachloroethene	ug/l	< 5.
1,1,1-Trichloroethane	ug/l	< 5.
1,1,2-Trichloroethane	ug/l	< 5.
Trichloroethene	ug/l	< 5.
Trichlorofluoromethane	ug/l	< 5.
Toluene	ug/l	< 5.
Vinyl chloride	ug/l	< 10.
Cyanide, Total	mg/l	< 0.01

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz,
Group Leader, Organics

AR100038

SSM/Laboratories

ANALYTICAL REPORT

CLIENT: Marian Murphy
Weston
2890 Woodbridge Avenue
Bldg. 209 Annex
Edison NJ 08837-3679

SAMPLE: 1001798
PROJECT: 100433
PO NO:
REPORTED: 11-OCT-90
RECEIVED: 21-SEP-90
WORK ORDER:

PROJECT DESCRIPTION: Penn-Dot Route 19 Site
Project 9009-27

CLIENT IDENTIFICATION: W-2

SAMPLE DESCRIPTION: Penn Dot Well

SAMPLING DATE: 19-SEP-90 TIME: 11:25 BY: Chuck Fisher

	UNITS	RESULT
Purgeable Hydrocarbons		
Acrolein	ug/l	< 80.
Acrylonitrile	ug/l	< 80.
Benzene	ug/l	< 5.
Bromomethane	ug/l	< 10.
Bromodichloromethane	ug/l	< 5.
Bromoform	ug/l	< 5.
Carbon tetrachloride	ug/l	< 5.
Chlorobenzene	ug/l	< 5.
Chloroethane	ug/l	< 10.
2-Chloroethylvinyl ether	ug/l	< 10.
Chloroform	ug/l	< 5.
Chloromethane	ug/l	< 10.
Dibromochloromethane	ug/l	< 5.
1,2-Dichlorobenzene	ug/l	< 5.
1,3-Dichlorobenzene	ug/l	< 5.
1,4-Dichlorobenzene	ug/l	< 5.
1,1-Dichloroethane	ug/l	< 5.
1,2-Dichloroethane	ug/l	< 5.
1,1-Dichloroethene	ug/l	< 5.
Trans-1,2-dichloroethene	ug/l	< 5.
1,2-Dichloropropane	ug/l	< 5.
cis-1,3-Dichloropropene	ug/l	< 5.
trans-1,3-Dichloropropene	ug/l	< 5.
Ethylbenzene	ug/l	< 5.
Methylene chloride	ug/l	6.

AR100039

SSM/Laboratories

CLIENT: Weston
SAMPLE: 1001798 W-2
PROJECT: 100433

1,1,2,2-Tetrachloroethane	ug/l	< 5.
Tetrachloroethene	ug/l	< 5.
1,1,1-Trichloroethane	ug/l	< 5.
1,1,2-Trichloroethane	ug/l	< 5.
Trichloroethene	ug/l	< 5.
Trichlorofluoromethane	ug/l	< 5.
Toluene	ug/l	< 5.
Vinyl chloride	ug/l	< 10.
Cyanide, Total	mg/l	< 0.01

Respectfully submitted,

Scott W. Hinnershitz

Scott W. Hinnershitz
Group Leader, Organics

AR100040

METHOD DETECTION LIMITS

DATE	ANALYTE	UNITS	MDL
09/25/90	Antimony	mg/kg	20
09/25/90	Beryllium	mg/kg	1.2
09/25/90	Cadmium	mg/kg	1.2
09/25/90	Chromium	mg/kg	4
09/25/90	Copper	mg/kg	3.6
09/25/90	Lead	mg/kg	8
09/25/90	Nickel	mg/kg	4
09/25/90	Silver	mg/kg	2.4
09/25/90	Thallium	mg/kg	20
09/25/90	Zinc	mg/kg	0.8
10/01/90	Arsenic	mg/kg	0.08
10/01/90	Selenium	mg/kg	0.08
09/25/90	Mercury	mg/kg	0.1

MDL.WK1

METHOD BLANK RESULTS

DATE	ANALYTE	UNITS	BLANK RESULT
09/25/90	Antimony	mg/L	<0.5
09/25/90	Beryllium	mg/L	<0.03
09/25/90	Cadmium	mg/L	<0.03
09/25/90	Chromium	mg/L	<0.1
09/25/90	Copper	mg/L	<0.09
09/25/90	Lead	mg/L	<0.2
09/25/90	Nickel	mg/L	<0.1
09/25/90	Silver	mg/L	<0.06
09/25/90	Thallium	mg/L	<0.5
09/25/90	Zinc	mg/L	<0.02
10/01/90	Arsenic	mg/L	<0.002
10/01/90	Selenium	mg/L	<0.002
09/25/90	Mercury	mg/L	<0.0005

BLANK.WK1

Matrix Spike Results
SSM/Laboratories
Matrix: Soil

Date Analyzed	Analyte	Units	SSM Sample ID	Spike Added	Samp. Conc.	MS Conc.	MS % Rec.
09/25/90	Antimony	mg/kg	1001793	194	<20	194	100.00
09/25/90	Beryllium	mg/kg	1001793	38.8	<1.2	38.3	98.71
09/25/90	Cadmium	mg/kg	1001793	38.8	<1.2	39.4	101.55
09/25/90	Chromium	mg/kg	1001793	38.8	14.5	49.6	90.46
09/25/90	Copper	mg/kg	1001793	38.8	31.6	75.4	112.89
09/25/90	Lead	mg/kg	1001793	38.8	28.1	68.9	105.15
09/25/90	Nickel	mg/kg	1001793	38.8	21.9	60.6	99.74
09/25/90	Silver	mg/kg	1001793	38.8	<2.4	38.3	98.71
09/25/90	Thallium	mg/kg	1001793	194	<20	204	105.15
09/25/90	Zinc	mg/kg	1001793	388	84.3	483	102.76
10/01/90	Arsenic	mg/kg	1001793	4	4.07	8.45	109.50
10/01/90	Selenium	mg/kg	1001793	0.2	<0.08	0.183	0
09/25/90	Mercury	mg/kg	1001790	0.282	<0.1	0.274	97.16

QC ms_dp.wk1

Duplicate Results
SSM/Laboratories
Matrix: Soil

Date Analyzed	Analyte	Units	SSM Sample ID	Samp. Conc.	Dup. Conc.	RPD
09/25/90	Antimony	mg/kg	1001793	<20	<20	0
09/25/90	Beryllium	mg/kg	1001793	<1.2	<1.2	0
09/25/90	Cadmium	mg/kg	1001793	<1.2	<1.2	0
09/25/90	Chromium	mg/kg	1001793	14.5	13.5	7.14
09/25/90	Copper	mg/kg	1001793	31.6	32.9	4.03
09/25/90	Lead	mg/kg	1001793	28.1	34.5	20.45
09/25/90	Nickel	mg/kg	1001793	21.9	21.8	0.46
09/25/90	Silver	mg/kg	1001793	<2.4	<2.4	0
09/25/90	Thallium	mg/kg	1001793	<20	<20	0
09/25/90	Zinc	mg/kg	1001793	84.3	96.9	13.91
10/01/90	Arsenic	mg/kg	1001793	4.07	4.6	12.23
10/01/90	Selenium	mg/kg	1001793	<0.08	<0.08	0
09/25/90	Mercury	mg/kg	1001790	<0.1	<0.1	0

QC DUP_DP.WK1 FORM r 2.22