ORIGINAL
(Red)

R-585-4-3-55

A SITE INSPECTION OF MARTIN HOLLOW LANDFILL PREPARED UNDER

TDD NO. F3-8211-25
EPA NO. WV-21
CONTRACT NO. 68-01-6699

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 26, 1984

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY	REVIEWED BY	APPROVED BY
Thomas W. Fromm	William Wentworth	William Wentworth for G.G.
THOMAS W. FROMM	WILLIAM WENTWORTH	GARTH GLENN
Asst. Manager	Asst. Manager, Reports	Manager, FIT III

Site Name: Martin Hollow
TDD No.: F3-8211-25

TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION	1-1
1.1	AUTHORIZATION	1-1
1.2	SCOPE OF WORK	1-1
1.3	SUMMARY	1-1
2.0	THE SITE	2-1
2.1	LOCATION	2-1
2.2	SITE LAYOUT	2-1
2.3	OWNERSHIP HISTORY	2-1
2.4	SITE USE HISTORY	2-1
2.5	PERMIT AND REGULATORY ACTION HISTORY	2-2
2.6	REMEDIAL ACTION TO DATE	2-2
3.0	ENVIRONMENTAL SETTING	3-1
3.1	SURFACE WATERS	3-1
3.2	GEOLOGY AND SOILS	3-1
3.3	GROUNDWATERS	3-2
3.4	CLIMATE AND METEOROLOGY	3-2
3.5	LAND USE	3-2
3.6	POPULATION DISTRIBUTION	3-3
3.7	WATER SUPPLY	3-3
3.8	CRITICAL ENVIRONMENTS	3-3
4.0	WASTE TYPES AND QUANTITIES	4-1
5.0	FIELD TRIP REPORT	5-1
5.1	SUMMARY	5-1
5.2	PERSONS CONTACTED	5-1
5.2.1	PRIOR TO FIELD TRIP	5-1
5.2.2	AT THE SITE	5-1
5.3	SAMPLE LOG	5-2
5.4	SITE OBSERVATIONS	5-4
5.5	PHOTOGRAPH LOG	5-5
5.6	EPA ASSESSMENT FORM	5-4
6.0	LABORATORY DATA	6-1
6.1	SAMPLE DATA SUMMARY	6-1
6.2	QUALITY ASSURANCE REVIEW	6-2
6.2.1	ORGANIC	6-2
6.2.2	INORGANIC	6-5
7.0	TOXICOLOGICAL EVALUATION	7-1
7.1	SUMMARY	7-1
7.2	SUPPORT DOCUMENTATION	7-1

ORIGINAL
(Red)

Site Name: Martin Hollow
TDD No.: F3-8211-25

APPENDICES

A	1.0 COPY OF TDD	A-1
B	1.0 MAPS AND SKETCHES	B-1
C	1.0 QUALITY ASSURANCE SUPPORT DOCUMENTATION	C-1
D	1.0 LABORATORY DATA SHEETS	D-1

SECTION 1

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-6699. This specific report was prepared in accordance with Technical Directive Document No. F3-8211-25 for the Martin Hollow Landfill located in Granville, West Virginia.

1.2 Scope of Work

FIT III was tasked to conduct a site inspection and sampling at the subject site.

1.3 Summary

The Martin Hollow Landfill is approximately 36 acres in size and reportedly was used to dispose of esters, iso-octyl, iso-decyl alcohols, small amounts of salts (sodium chloride) from soda ash treatment, mercaptans and miscellaneous other compounds. The source of the waste was reportedly Borg-Warner. The Eckhardt List reports a total of 100 tons of waste were disposed of at the site.

The landfill was active for a period of 2 to 3 months and is presently inactive while the owners await action on a permit application.

FIT III visited the subject site on April 6, 1983, to conduct the site inspection. A total of 12 samples, including blanks, were collected. The results of the analysis of these samples are summarized in section 6 (Quality Assurance Review). A Toxicological Evaluation, section 7, reviews the possible adverse environmental and human health impacts of these results.

SECTION 2

2.0 THE SITE

2.1 Location

The Martin Hollow Landfill is located 1.5 miles north of U.S. Rt. 19 and I-79 on Monongalia Co. Rd 46/3 in Granville, West Virginia.

2.2 Site Layout

A site location map and a site sketch can be found in appendix B of this report. The area of concern consists of the inactive landfill, wooded surroundings, and one home.

2.3 Ownership History

Mr. and Mrs. Victor Solomon have been the sole owners of the landfill. They have owned and operated the site themselves except for a brief period of time in 1982 when the grounds were leased to Monongalia County. The leasing occurred during Mr. Solomon's incarceration in jail.

2.4 Site Use History

Prior to the utilization of the area as a landfill, the grounds and surrounding areas were strip mined. The area was then used as a dump site for construction and demolition debris. Reportedly, unknown amounts of organic and inorganic chemicals and some salts were also dumped there. The dump was run for only 2 to 3 months, and is presently shutdown while awaiting action regarding its permit application.

2.5 Permit and Regulatory Action History

There are no permits held at the present time. However, Mrs. Victor Solomon informed the FIT leader, Thomas Fromm, that applications are now being processed in an attempt to acquire a permit to use the area as a commercial landfill. In 1982, the county of Monongalia tried unsuccessfully to have the Martin Hollow landfill condemned.

2.6 Remedial Action To Date

No remedial action is known to have occurred to date.

SECTION 3

3.0 ENVIRONMENTAL SETTING

3.1 Surface Waters

The major surface water flow in the vicinity of the subject site is Dents Run which flows approximately 1/4 mile north of the northeast boundary of the site. Surface water runoff from the site flows into an unnamed tributary of Dents Run. This tributary is formed by a spring which emanates approximately 100 yards to the east of the fill area. In the past, this spring was utilized as a potable water source by a home located on the northeat border of the site. This home was vacant at the time of the FIT III visit (see appendix b).

3.2 Geology and Soils

Site specific geology and soil information are not presently available and as such the information herein has been derived from the "Geologic Map of West Virginia WV Geological, the Economic Survey 1968" and the "General Soil Map, West Virginia, Soil Conservation Survey 1979" and Groundwater Resources of Monongalia County, West Virginia, U.S.G.S. 1958.

The area of the Martin Hollow Landfill has been strip mined; therefore, the native soil has been removed. The native soil has been classified as "Colleoka-Westmoreland-Clarksburg Association" silt loam.

Regional geology is interpreted as the "Conemaugh", described in "Groundwater Resources of Monongalia County, West Virginia, U.S.G.S. 1958", is 550 to 600 feet thick and consists of highly lenticular sandstone interbedded with siltstone, shale, and some thin limestone and coal beds.

The Geological Map shows the Fayette Anticlinal axis on the northern side of the site, however, its effect on the site is unknown.

3.3 Groundwaters

Groundwater in the region and within Monongalia County demonstrates low yields. There are no drinking water wells within 1/4 mile of what is expected to be hydraulically downgradient of the site; there are, however, reportedly several within 1 mile. There is also a well approximately 1/4 to 1/2 mile of what is expected to be hydraulically upgradient of the site. The depth to aquifer is unknown.

A spring which emanates slightly east of the landfill is used as a drinking water source for the dwelling located on the site. This home was vacant at the time of the FIT III visit. Groundwater is expected to flow to the east-northeast towards Dents Run.

3.4 Climate and Meteorology

Monongalia County has a humid, temperate climate with moderate summers and no distinct dry season. Average winter temperatures range from 31°F to slightly above freezing; summer temperatures average nearly 73.5^{o}F.

Precipitation in the area averages 41 inches annually with evaporation averaging 29 inches per year. This leaves an accumulation of 12 inches of precipitation annually.

3.5 Land Use

The land surrounding the site is primarily stripped for coal. Some of the remaining grounds are being used for residences. The stripped hills are being restored as wooded, forest terrain.

3.6 Population Distribution

The population in and around the landfill is sparse, with only 2 or 3 residences within a mile of the area.

3.7 Water Supply

3.8 Critical Environments

No critical environments are known to exist in the vicinity of the site.

SECTION 4

4.0 WASTE TYPES AND QUANTITIES

Wastes suspected to have been disposed of on site include: esters, mercaptin, organic phosphate, iso-octyl (and iso-decyl) alcohols, salts associated with soda ash treatment and phenol.

According to the Eckhardt List, a total of 100 tons of waste was dumped at this site.

SECTION 5

5.0 FIELD TRIP REPORT

5.1 Summary

FIT III conducted a site inspection of the Martin Hollow Landfill in Granville, West Virginia on April 6, 1983. FIT III members included Thomas Fromm, William Wentworth, Jeffrey Case, Michael Nalipinski, and Laura Boornazian. Kevin Straight of West Virginia D.W.R. accompanied FIT III on site.

Weather conditions at the time of the site inspection were rainy and cool.

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Pamela Hays
WV Dept. of Nat. Resources
Hazardous Waste Division
1800 Washington Street East
Charleston, WV 25308
304-348-5935

Kevin M. Straight
Haz. Waste/Groundwater Inspector
WV Div. of Water Resources
Hazardous Waste/Groundwater Branch
Charleston, WV 25308
304-363-3533

Mrs. Victor Soloman
Rt. 1, Box 61
Morgantown, WV 26505
304-983-2315

5.2.2 At The Site

Mr. Victor Soloman
Rt. 1, Box 61
Morgantown, WV 26505
304--983-2315

Kevin M. Straight
Hazardous Waste/Groundwater Inspector
WV Division of Water Resources
Hazardous Waste/Groundwater Branch
Charleston, WV 25308
304-363-3533

TDD Number F3-8211-25
EPA Number WW - 21

5.3 SAMPLE LOG

Site Name MARTIN Hollow L.

TRAFFIC REPORTS			SAMPLING LOCATION	PHASE	SAMPLE DESCRIPTION	DATE	TIME	pH	COMMENTS/OBSERVATIONS
Organic	Inorganic	High Hazard							
C2856	MC0554	—	Standing water below fill area	AQ	Low Concentration Aqueous	4/6/83	0910	6.50	—
C2857	MC0555	—	Spring upstream of leachate	AQ	Low Concentration Aqueous	4/6/83	0920	7.33	—
C2858	MC0556	—	Sediment in standing water	Sol.	Low Concentration Soil / Sediment	4/6/83	0910	—	—
C2859	MC0557	—	Sediment in spring upstream	Sol	Low Concentration Soil / Sediment	4/6/83	0920	—	—
C2860	MC0558	—	Spring below leachate	AQ	Low Concentration Aqueous	4/6/83	0945	7.08	—
C2861	MC0559	—	Sediment in spring below	Sol	Low Concentration Soil / Sediment	4/6/83	0945	—	—
C2862	MC0560	—	Leachate Flow	AQ	Low Concentration Aqueous	4/6/83	1030	6.63	—
C2863	MC0561	—	Sediment in leachate flow	Sol	Low Concentration Soil / Sediment	4/6/83	1030	—	—
C2864	MC0562	—	Drinking water spring	AQ	Low Concentration Aqueous	4/6/83	1000	7.28	—
C2865	MC0563	—	Sediment in drinking water spring	Sol	Low Concentration Soil / sediment	4/6/83	1000	—	—

ORIGINAL (Red)

TDD Number F3-8211-25
EPA Number VJV - 21

5.3 SAMPLE LOG

Site Name Martin Hollow L.F.

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLING LOCATION	PHASE	SAMPLE DESCRIPTION	DATE	TIME	pH	COMMENTS/OBSERVATIONS
C2866	MC0564	-	Blank	AQ	Low Concentration Aqueous	4/6/83	1100	-	-
C2867	MC0565	-	Blank	Sol	Low Concentration Soil / Sediment	4/6/83	1100	-	-

Organics sent to: Spectrix Corp.
7408 Fannin
Houston, Tx 77054

Inorganics sent to: Versar Inc.
6621 Electronic Dr.
Springfield, Va 22151

ORIGINAL (Red)

5.4 Site Observations

- The access road to the landfill was secured with a cable, but did not have a lock.
- Household debris, such as washing machines and other appliances, was observed at the fill area.
- A mine well was pointed out by Kevin Straight, but it was not sampled.
- A red colored leachate flow was observed. Discolored soil beneath the leachate had the same reddish hue.
- This leachate (C-2862/MC-0560) and the corresponding sediment (C-2863/MC-0561) were selected as sampling locations.
- FIT III arrived on site at 8:30 AM and departed at 12:30 PM for a total of 4 hours on site.

5.5 Photograph Log

Photographs were not taken due to inclement weather conditions during the site investigation.

F3-8211-25 ORIGINAL

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

REGION	SITE NUMBER (to be assigned by HQ)
III	WV-21

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (*Section II*). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Martin Hollow Landfill

B. STREET (or other identifier): 1.5 miles north of U.S. 19 & I-79 on Co. Rd.

C. CITY: Granville

D. STATE: WV

E. ZIP CODE:

F. COUNTY NAME: Monongalia

G. SITE OPERATOR INFORMATION

1. NAME: Victor Soloman

2. TELEPHONE NUMBER: 304-983-2315

3. STREET: RT. 1 Box 61

4. CITY: Morgantown

5. STATE: WV

6. ZIP CODE: 26505

H. REALTY OWNER INFORMATION (*if different from operator of site*)

1. NAME: Gary and Lena Soloman

2. TELEPHONE NUMBER: 304-983-2315

3. CITY: Morgantown

4. STATE: WV

5. ZIP CODE: 26505

I. SITE DESCRIPTION

Inactive landfill currently being used to store salvageable materials.

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE

II. TENTATIVE DISPOSITION (*complete this section last*)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (*mo., day, & yr.*): 2/8/84

B. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☒ 4. NONE

C. PREPARER INFORMATION

1. NAME: Thomas W. Fromm

2. TELEPHONE NUMBER: 215-687-9510

3. DATE (*mo., day, & yr.*): 4/28/83

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME: Thomas W. Fromm

2. TITLE: Senior Field Technician

3. ORGANIZATION: NUS Corporation FIT III

4. TELEPHONE NO. (*area code & no.*): 215-687-9510

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Michael Nalipinski	NUS FIT III	215-687-9510
William Wentworth	NUS FIT III	215-687-9510
Jeffrey Case	NUS FIT III	215-687-9510
Laura Boornazian	NUS FIT III	215-687-9510
Kevin M. Straight	West Virginia Div. of Water Resources Hazardous Waste/Groundwater Branch	304-653-3533

C. SITE REPRESENTATIVES INTERVIEWED (*corporate officials, workers, residents*)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
Victor Soloman	Owner representative 304-983-2315	Rt. 1 Box 61, Morgantown, WV

Continue On Reverse

ORIGINAL (Red)

Continued From Page 2

IV. SAMPLING INFORMATION (continued)

C. PHOTOS

1. TYPE OF PHOTOS: [ ] a. GROUND [ ] b. AERIAL

2. PHOTOS IN CUSTODY OF: No photos due to a camera malfunction.

D. SITE MAPPED?

[X] YES. SPECIFY LOCATION OF MAPS: Appendix B of Site Inspection report.

E. COORDINATES

1. LATITUDE (deg.-min.-sec.): 39° 38' 30"

2. LONGITUDE (deg.-min.-sec.): 80° 00' 28"

V. SITE INFORMATION

A. SITE STATUS

[ ] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)

[X] 2. INACTIVE (Those sites which no longer receive wastes.)

[ ] 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

[X] 1. NO [ ] 2. YES (specify generator's four-digit SIC Code): _____

C. AREA OF SITE (in acres): approx. 36 acres

D. ARE THERE BUILDINGS ON THE SITE?

[ ] 1. NO [X] 2. YES (specify): 1 house unoccupied

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION	X	1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

[ ] 1. STORAGE [ ] 2. INCINERATION [X] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL

[ ] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [ ] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

[X] 1. LIQUID [X] 2. SOLID [ ] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS

[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE

[ ] 5. TOXIC [ ] 6. REACTIVE [X] 7. INERT [ ] 8. FLAMMABLE

[X] 9. OTHER (specify): Unknown

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

No records available.

 Continue On Reverse

ORIGINAL (Red)

Continued From Page 4

VIII. HAZARD DESCRIPTION (continued)

☐ B. NON-WORKER INJURY/EXPOSURE

None reported.

☐ C. WORKER INJURY/EXPOSURE

None reported.

☐ D. CONTAMINATION OF WATER SUPPLY

None reported or observed.

☐ E. CONTAMINATION OF FOOD CHAIN

None reported.

☐ F. CONTAMINATION OF GROUND WATER

None reported or observed.

☒ G. CONTAMINATION OF SURFACE WATER

Sample of a leachate flow discharging from the fill area revealed evidence of high iron content as well as elevated levels of several toxic heavy metals. Samples obtained downstream revealed acceptable levels of iron and no evidence of any toxic heavy metals.

 Continue On Reverse

ORIGINAL (Red)

Continued From Page 6

VIII. HAZARD DESCRIPTION (continued)

☐ N. FIRE OR EXPLOSION

None reported.

☒ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

A leachate runoff stream flowing from the fill area towards Dents Run.

☐ P. SEWER, STORM DRAIN PROBLEMS

None reported.

☐ Q. EROSION PROBLEMS

None reported.

☒ R. INADEQUATE SECURITY

Site is not secured.

☐ S. INCOMPATIBLE WASTES

None reported.

Continue On Reverse

ORIGINAL (Red)

Continued From Page 8

X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')
		No wells within 1/4 mile of the site.		

I. RECEIVING WATER

1. NAME: Dents Run

☐ 2. SEWERS ☒ 3. STREAMS/RIVERS ☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify):

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

Recreational

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☒ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. OVERBURDEN	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
X	1. SAND		coal		
X	2. CLAY		sandstone	X	shale
X	3. GRAVEL		shale		

XIII. SOIL PERMEABILITY

☐ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☒ C. HIGH (1000 to 10 cm/sec.)

☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☒ 1. YES ☐ 2. NO 3. COMMENTS: Landfill site collects water and adds runoff and underground flow to stream below.

H. DISCHARGE AREA

☒ 1. YES ☐ 2. NO 3. COMMENTS: Landfill site discharges into stream below.

I. SLOPE

1. ESTIMATE % OF SLOPE: 10 percent

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.: northeast

J. OTHER GEOLOGICAL DATA

Site is underlain by haulageway for coal mine.

Continue On Reverse

SECTION 6

6.0 LABORATORY DATA

The following section was prepared by U.S. EPA III chemists.

6.1 Sample Data Summary

TDD Number F3-821-25

EPA Number WV-21

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☒ Organic ☐ Inorganic

Site Name MARTIN Hollow Land fill

Date of Sample April 6 1983

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Naphthalene	bis (2-ethyl hexyl) phthalate	di-n-butylphthlate	di-n-octylphthlate	methylene chloride	4,4'-DDT	4,4'-DDE	4,4'-DDD	heptachlor epoxide	α-BHC	γ-BHC (lindane)	dibenzofuran	2-methylnaphthalene	Remarks
C2856	Standing water below fill area	AQ	ug/l														
C2857	Spring upstream of leachate	AQ	ug/l														
C2860	Spring below leachate	AQ	ug/l														
C2862	Leachate Flow	AQ	ug/l														
C2864	Drinking water spring	AQ	ug/l														
C2866	Blank	AQ	ug/l														
C2858	Sediment in standing water	SED	ug/kg	100K	20900◇	100K	576◇	17.2◇	1.83◇	0.24◇	0.42◇	.07◇	.36◇	.14◇	100K	200K	DWF = 1.5
C2859	Sediment in spring upstream	SED	ug/kg	100K	197◇			9.7◇		.22	.05					200K	DWF = 2.1
C2861	Sediment in spring below	SED	ug/kg	295		100K		8.1◇	1.23				.24	.37	172	487	DWF = 1.9
C2863	Sediment in leachate flow	SED	ug/kg					17.3◇					.34	.20	100K	200K	DWF = 1.4
C2865	Sediment in drinking water spring	SED	ug/kg					9.7◇				.08	.07	.09		200K	DWF = 1.9
C2867	Blank	SED	ug/kg					11.4									

Solid Sample results reported as wet weight.

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

K- compound present, but concentration not quantified since below listed limi

[illegible] wet weight (DWF = Dry weight correction factor)

ORIGINAL (Red)

TDD Number F3-3211-25
EPA Number WV-21

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☒ Organic ☐ Inorganic

Site Name MARTIN Hollow Landfill
Date of Sample April 6 1983

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	diethylphthalate	dieldrin	benzoic acid	fluoranthene	chrysene	pyrene	β-BHC	BENZENE	chloroform	ACETONE	Aldrin	benzyl butyl phthalate	Remarks
C 2856	standing water below fill area	AQ	ug/l													
C 2857	Spring upstream of leachate	AQ	ug/l													
C 2860	Spring below leachate	AQ	ug/l													
C 2862	Leachate Flow	AQ	ug/l													
C 2864	Drinking water spring	AQ	ug/l													
C 2866	Blank	AQ	ug/l													
C 2858	Sediment in standing water	SED	ug/Kg	100 K	.09 ◇	3460 ◇										
C 2859	Sediment in Spring upstream	SED	ug/Kg				100 K									
C 2861	Sediment in spring below	SED	ug/Kg	100 K			100 K	109	100 K	1.52						
C 2863	Sediment in leachate flow	SED	ug/Kg	100 K	1.14					1.51				.21		
C 2865	Sediment in drinking water spr.	SED	ug/Kg						100 K						100 K	
C 2867	Blank	SED	ug/Kg								2.5 K	2.5 K	63.7			

Solid Sample results reported as wet weight.

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

Results are wet weight K- compound present, but concentration not quantified since it was below the listed detection limit.

ORIGINAL (Red)

TDD Number F3-8211-25
EPA Number WV-21

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☐ Organic ☒ Inorganic

Site Name MARTIN Hollow Land Fill
Date of Sample APRIL 6 1983

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Aluminum	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Iron	Manganese	Nickel	Vanadium	Zinc	Arsenic	Remarks
MC0554	STANDING water below fill AREA	AQ	ug/l	1000			200	10◇			4750	11700			130		
MC0555	SPRING upstream of leachate	AQ	ug/l	7800				20◇			12800	450	80		120		
MC0558	SPRING below leachate	AQ	ug/l	1800				10◇			8500	1050			60		
MC0560	leachate flow	AQ	ug/l	194000	2200	25	600	220	650	500	1270000	78000	640	400	5630	250	
MC0562	Drinking water flow	AQ	ug/l	600◇							150◇	75			30◇		
MC0564	Blank	AQ	ug/l								50				10		
MC0556	Sediment in STANDING water	SED	MG/KG	4010	45	0.50	10.0	8.0	5.0	12.5	17600	275	12.0	10.0	42.5	5.0	
MC0557	Sediment in SPRING UPSTREAM	SED.	MG/KG	4080	35	0.50	5.0	6.5	10.0	15.0	16000	465	22.0	10.0	45.0	6.0	
MC0559	Sediment in SPRING below	SED.	MG/KG	1290	25			3.5	7.5	5.0	9400	800	10.0		38.5	4.0	
MC0561	SEDIMENT in leachate flow	SED	MG/KG	3620	45	0.50	15.0	7.0	10.0	12.5	28100	965	14.0		53.0	8.0	
MC0563	Sediment in drinking water SPR.	SED	MG/KG	4990	65	0.75	10.0	9.5	15.0	15.0	18700	560	30.0	10.0	62.0	8.0	
MC0565	Blank	SED	MG/KG								5.0						

Solid Sample results reported as wet weight.

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

ORIGINAL (Red)

TDD Number F3-8211-25

EPA Number WV-21

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☐ Organic ☒ Inorganic

Site Name MARTIN Hollow Land Fill

Date of Sample APRIL 6 1983

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	CADMIUM	LEAD	Selenium	MERCURY	CYANIDE									Remarks
MC0554	STANDING water below fill area	AQ	ug/l														
MC0555	SPRING upstream of Leachate	AQ	ug/l			4											
MC0558	SPRING below leachate	AQ	ug/l														
MC0560	leachate Flow	AQ	ug/l	16	480	14	1.0	10									
MC0562	DRINKING water Flow	AQ	ug/l					10									
MC0564	Blank	AQ	ug/l														
MC0556	Sediment in STANDING WATER	SED	MG/KG	0.1	10												
MC0557	Sediment in SPRING upstream	SED	MG/KG	.05	8.0	0.3											
MC0559	Sediment in SPRING Below	SED	MG/KG	0.1	5.0	0.3											
MC0561	sediment in leachate flow	SED	MG/KG	0.1	9.0	0.2											
MC0563	sediment in drinking water sp.	SED.	MG/KG	0.25	18	0.1											
MC0565	Blank	SED	MG/KG														

Solid Sample results reported as wet weight.

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

ORIGINAL (Red)

6.2 Quality Assurance Review

6.2.1 Organic Data: Lab Case 1624

6.2.1.1 Introduction

The findings offered in this report are based upon a general review of sample data, blank analysis, surrogate spike, matrix spike, duplicate analysis and tentatively identified compound results.

6.2.1.2 Qualifiers

It is recommended that this data package be utilized only with the following qualifier statements:

- Methylene chloride results for samples C2858, C2859, C2861, C2863 and C2865 are questionable.
- Acid fraction results for samples C2856, C2860, and C2862 may be questionable.
- Extractable results for samples C2858, C2859, C2861, C2863, and C2865 may be questionable.
- Sample C2855 results for bis(2-ethylhexyl)phthalate, di-n-octyl phthalate and benzoic acid may be questionable.
- C2859 result for bis(2-ethylhexyl)phthalate may be questioned.
- Pesticide results for sample C2858 may be questionable for DDT, DDE, DDD, heptachlor epoxide, -BHC, dieldrin and aldrin.
- Confirmation of pesticide results may be questionable.

ORIGINAL
(Red)

6.2.1.3 Findings

- The presence of methylene chloride in field blanks at levels similar to the samples was detected. Methylene chloide values should be assumed to be sampling or labotatory related and not characteristic of the samples.

- Acid compound surrogates were recovered below QC limits for samples C2856, C2860, and C2862. Detection limits may therefore be higher than what were stated.

- Acidic and basic surrogates were recovered below QC limits for soil samples C2858, C2859, C2861, C2863, and C2865. Detection limits may therefore be higher than what were stated.

- Results for bis(2-ethylhexyl)phthalate, di-n-octylphthalate and benzoic acid for sample C2858 were not duplicated in the duplicate or matrix spike. These results are questionable and may reflect introduced contamination or gross sample inhomogeneity.

- Pesticide matrix spike of soil sample C2858 exhibited recoveries below QC limits.

- Sample C2858 pesticide results for DDT, DDE, DDD, heptachlor epoxide, α-BHC, dieldrin and aldrin were not duplicated. These results may be false postives or reflect poor laboratory accuracy.

- Only trace levels of pesticide residues were detected. These results are below levels that could be confirmed by GC/MS. Poor chromatographic seperation of compound eluding before aldrin on the pack column could enhance the chance of false positives in the two column analysis regime.

ORIGINAL
(Red)

- The possible laboratory contamination of sample C2858 could also question sample C2859 as bis(2-ethylhexyl)phthalate is a frequent laboratory contaminate.

6.2.1.4 Summary

Several clerical omissions of data from required reporting forms were noted during the evaluation of this package. In all cases, the correct raw data was provided but not entered on the forms or the final % recovery calculated. This inattention to detail even though all forms were signed by the project manager also resulted in a mix up of sample fractions to be combined. Any future use of this data for litigation could be compromised.

The Quality Assurance Review has identified several areas of concern; blank contamination, duplicate analysis, surrogate recovery, and pesticide confirmations. Please see the accompanying support Documentation Appendix for specifics on this Quality Assurance Review.

Report prepared by John Austin John Austin Date: 7/4/84

6.2.2 Inorganic Data Lab Case 1624

6.2.2.1 Introduction

The findings offered in this report are based upon a review of all available sample data, blank results, matrix spike and duplicate analysis results, and quality assurance documentation.

6.2.2.2 Qualifiers

It is recommended that this data package be utilized only with the following qualifier statements:

- Results for aluminum, boron, barium, beryllium, chromium, cobalt, copper, iron, manganese, nickel, vanadium, zinc, and silver on samples MC0554, MC0555, MC0558, MC0560, MC0562, MC0564, MC0556, MC0557, MC0559, MC0561, MC0563, and MC0565 may be questionable. No supporting ICP raw data was available for verification.

- Results for iron, aluminum, and zinc may be questionable for sample MC0562 due to blank contamination.

- Results for chromium may be questionable for samples MC0554, MC0555, and MC0558 due to blank contamination.

- Results for all Task I and Task II parameters in aqueous matrix samples (MC0554, MC0555, MC0558, MC0560, MC0562, MC0564) should be regarded as questionable. The validity of the data could not be determined in that the possibility of matrix interferents was not properly delineated.

- Detection limits and reported values for aluminum, cadmium, selenium, and cyanide in aqueous matrix samples (MC0554, MC0555, MC0558, MC0560, MC0562, MC0564) may be elevated as indicated by poor matrix spike recoveries.

- Detection limits and reported values for selenium and cyanide in solid matrix samples (MC0556, MC0557, MC0559, MC0561, MC0563, MC0565) may be elevated as indicated by poor matrix spike recoveries.

- Results for boron and cyanide in samples (MC0556, MC0557, MC0559, MC0561, MC0563, MC0565) may not be representative of the average concentrations as indicated by high relative percent differences observed in the solid matrix duplicates.

ORIGINAL
(Red)

Site Name: Martin Hollow L.F.
TDD No.: F3-8211-25

6.2.2.3 Findings

- ICAP raw data was omitted from the data package; therefore, the reported sample results and corresponding QC could not be verified for any of the Task I parameters.
- Blank analysis revealed the presence of iron, zinc, aluminum, and chromium at levels sufficient to question the aforementioned results for these parameters.
- For matrix spike recovery evaluation, the contract laboratory used the aqueous field blank which is not representative of the actual sample matrix at the sampling site.
- Matrix spike recoveries for aluminum, cadmium, selenium, and cyanide in the aqueous matrix spike sample were below the established control limits.
- Matrix spike recoveries for selenium and cyanide in the solid matrix spike sample were below the established control limit.
- Relative percent difference limits were exceeded for boron and cyanide in the solid matrix sample.

6.2.2.4 Summary

This Quality Assurance Review has identified several areas of concern; blank contamination, incomplete document package submittal, and the poor choice of a field blank for use in evaluating potential matrix interferences.

Please see the accompanying support documentation appendix for specifics on this Quality Assurance Review.

Report prepared by Debra K. White: Debra K. White Date: 4/25/84

SECTION 7

7.0 TOXICOLOGICAL EVALUATION

7.1 Summary

No significant hazards are apparent from low concentrations of limited contaminants detected in samples taken from the Martin Hollow Landfill site. A spring, which provides a source of drinking water to a presently unoccupied dwelling on the site, revealed no organic contaminants within detection limits and no inorganics at levels of concern.

A very high concentration of iron was detected in a leachate flow from a mine drainage. Elevated levels of several toxic metals were also reported in the leachate sample. However, impacts of the leachate on a small surface water flow appear to be localized and minimal since a downstream sample revealed acceptable concentrations of iron and no toxic metals within detection limits.

Low concentrations of phthalates were reported in on-site sediment samples but not in sediments of surface water draining the landfill area. The reported detections of a series of chlorinated hydrocarbon pesticides at trace to low concentrations are probably artifactual (see section 6.2).

No sensitive targets are evident. Only 2 or 3 residences are reportedly located within a mile of the site. Groundwater status is unknown, but there are no indications from available sample results to indicate probable site-related degradation.

7.2 Support Documentation

A quality assurance review of the sample data (section 6.2) suggests that several of the reported identifications of pesticides at trace concentrations in sediment samples may be suspect. Concentrations of DDT, DDE, DDD, heptachlor epoxide, BHC isomers, dieldrin and aldrin (0.05 to 1.83 ug/kg) were too low to confirm by GC/MS. Random interference from these early eluting, single-peak compounds may be a possible source of their artifactual appearance. Moreover, such a wide spectrum of pesticides found together at comparable concentrations in a given sample rarely occurs in the environment. In any event, at the trace levels reported and the absence of apparent sensitive targets, no imminent hazards are evident.

Organic compounds of probable validity reported in sediment samples include several phthalates at less than detection limits of 100 ug/kg in sediments from an on-site standing water pool and upstream spring. Low concentrations of some of the more relatively water soluble polycyclic aromatic hydrocarbon compounds (PAH), such as naphthalene, were reported in a sediment from a spring downstream of a leachate inflow. No organics were detected in the spring water sample or any other aqueous samples.

Of the phthalic acid esters reported, only di-n-butyl phthalate at 100 ug/kg in 2 sediment samples was judged to be a valid result. Phthalates are ubiquitous. They are extensively utilized as plasticizers, in insect repellents, cosmetic preparations, detergents, inks, paper products, lubricating oils, etc. Humans are routinely exposed to these compounds through consumption of foods packaged in plastic, and contact with numerous other household products containing phthalates. The phthalic acid ester linkages are readily biodegraded to yield ortho-benzoic acid, which was also identified in the sample containing DEHP. DEHP has recently been demonstrated to exhibit weak carcinogenic activity in rodents. Sediments typically contain DEHP or other phthalate esters at sub-microgram to low milligram per kg levels. Because the phthalates tend to associate strongly with fulvic and humic elements of soils and sediments, they are relatively immobile in aqueous ecosystems. At the concentrations of phthalates reported, potential hazards posed by these compounds in this case would appear to be insignificant.

Of the PAH compounds detected, none are demonstrated animal carcinogens. Compounds such as naphthalene and methylnaphthalene exhibit a much greater water solubility than the three-ring or four-ring PAH and may be somewhat more mobile in aqueous systems. Like other PAH, however, the naphthalene derivatives adsorb strongly onto suspended particulates, and once in the water column they tend to undergo direct photolysis at a rapid rate. PAH compounds are common constituents of petroleum residues including coal. The origin of the low-level PAH contamination of sediments may be related to the strip mining of coal in the area of the site. Roadside soils typically contain higher molecular weight PAH at concentrations up to several hundred mg/kg. The levels detected in this case are relatively very low and present no apparent dangers to human health or the local environment.

Of potentially much more concern are the excessive concentrations of several toxic metals identified in the leachate aqueous sample. This leachate flow emanates from a mine drainage. Such seeps are typically acidic and contain high concentrations of ferrous salts. Iron was detected in the leachate aqueous sample at 1,270,000 ug/l and in the corresponding sediment at 28,100 mg/kg or more than 2.8 percent by weight. Both the leachate water and sediment were described as red-colored. This is due to the rapid oxidation of ferrous ions in oxygenated water to ferric hydroxide, which is relatively insoluble and precipitates as a reddish floc (ochre).

In the process of ferrous ion oxidation in surface water from mine drainage areas, dissolved oxygen is rapidly consumed, carbon dioxide is markedly elevated from natural bicarbonate, pH is reduced, and the ferric hydroxide formed can settle out of suspension and produce a choking sediment over areas in stream beds that may be critical for the support or progeneration of freshwater aquatic life. Depletion of oxygen and reduction of pH are often characteristic in surface waters emanating from mine adits that are typically devoid of life.

Other metals of toxicological note include beryllium (25 ug/l) and chromium (220 ug/l) which may be carcinogenic in humans and toxic to fish at concentrations below those detected, arsenic (240 ug/l) which is also a human carcinogen, lead (500 ug/l), and mercury (1.0 ug/l).

The impact of these metals as well as iron, however, on the spring into which the leachate discharges or Dents Run appears to be of little consequence. Samples of the spring water and sediment taken downstream of the leachate influx revealed concentrations of these metals which in most cases were below detection limits.

An aqueous sample of a spring on which a drinking water supply pipe is located to serve a currently unoccupied dwelling on the landfill site, revealed no organic contaminants and acceptable concentrations of inorganics. No mercury, arsenic, cadmium, beryllium, chromium, or lead were detected in this sample within the limits of analytical detection sensitivities. Concentrations of inorganics in sediments were unremarkable.

Kenneth G. Symms

Kenneth G. Symms, Ph.D., Toxicologist

APPENDIX A

ORIGINAL
(Red)

1. COST CENTER:	REM/FIT ZONE CONTRACT TECHNICAL DIRECTIVE DOCUMENT (TDD)	2. NO.:
ACCOUNT NO.:		F3-8211-25

3. PRIORITY:	4. ESTIMATE OF TECHNICAL HOURS:	5. EPA SITE ID:	6. COMPLETION DATE:	7. REFERENCE INFO.:
☐ HIGH ☒ MEDIUM ☐ LOW	140	WV-21	7/29/83 ~~2/14/83~~ LYB	☒ YES ☐ NO ☐ ATTACHED ☒ PICK UP
	4A. ESTIMATE OF SUBCONTRACT COST: 0	5A. EPA SITE NAME: Martin Hollow Landfill		

8. GENERAL TASK DESCRIPTION: ~~Conduct a site inspection.~~

9. SPECIFIC ELEMENTS:

1. Review Preliminary Assessment and State information.
2. Develop a sampling plan: submit to EPA for concurrence.
3. Make appropriate arrangements for sample analysis.
4. Contact appropriate state personnel.
5. Take samples & ship to Lab.
6. Submit S.I. report as per memo dated 1/6/82 from DPO.

10. INTERIM DEADLINES:

DESIRED REPORT FORM: FORMAL REPORT ☒ LETTER REPORT ☐ FORMAL BRIEFING ☐

OTHER (SPECIFY):

12. COMMENTS:

13. AUTHORIZING RPO:	14. DATE:
Linda Y. Boornazian (SIGNATURE)	11/22/82

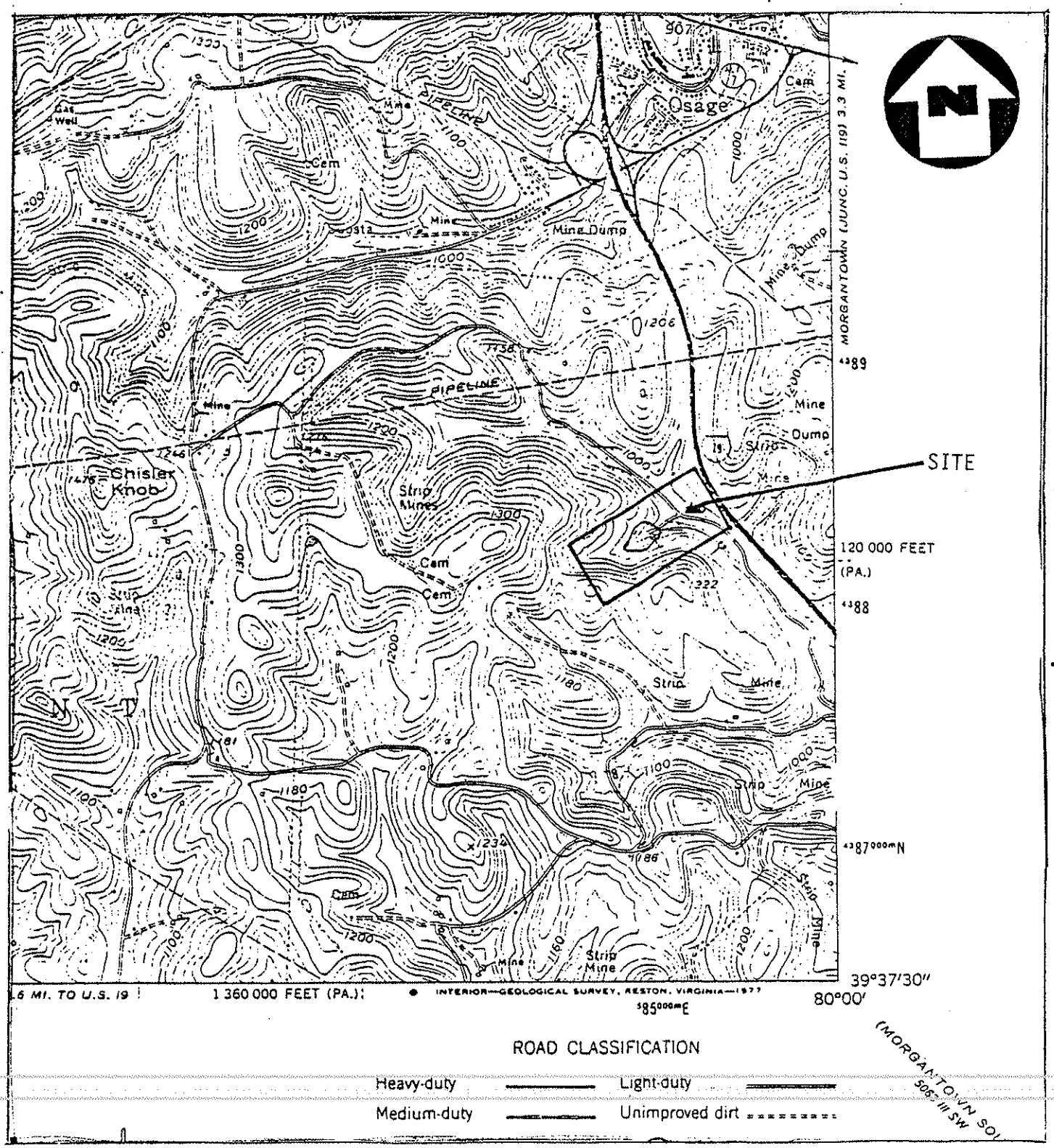
15. RECEIVED BY:	16. DATE:
☒ ACCEPTED ☐ ACCEPTED WITH EXCEPTIONS ☐ REJECTED J Leonard (CONTRACTOR RPM SIGNATURE)	3/4/83

Sheet 1 White — FITL Copy
Sheet 2 Canary — DPO Copy
Sheet 3 Pink — Contracting Officer's Copy (Washington, D. C.)
Sheet 4 Goldenrod — Project Officer's Copy (Washington, D. C.)

APPENDIX B

ORIGINAL
(Red)

SITE NAME: Martin Hollow Landfill
TDD NO.: F3-8211-25
EPA NO.: WV-21
TITLE: Site Location Map
FIGURE NO. 1



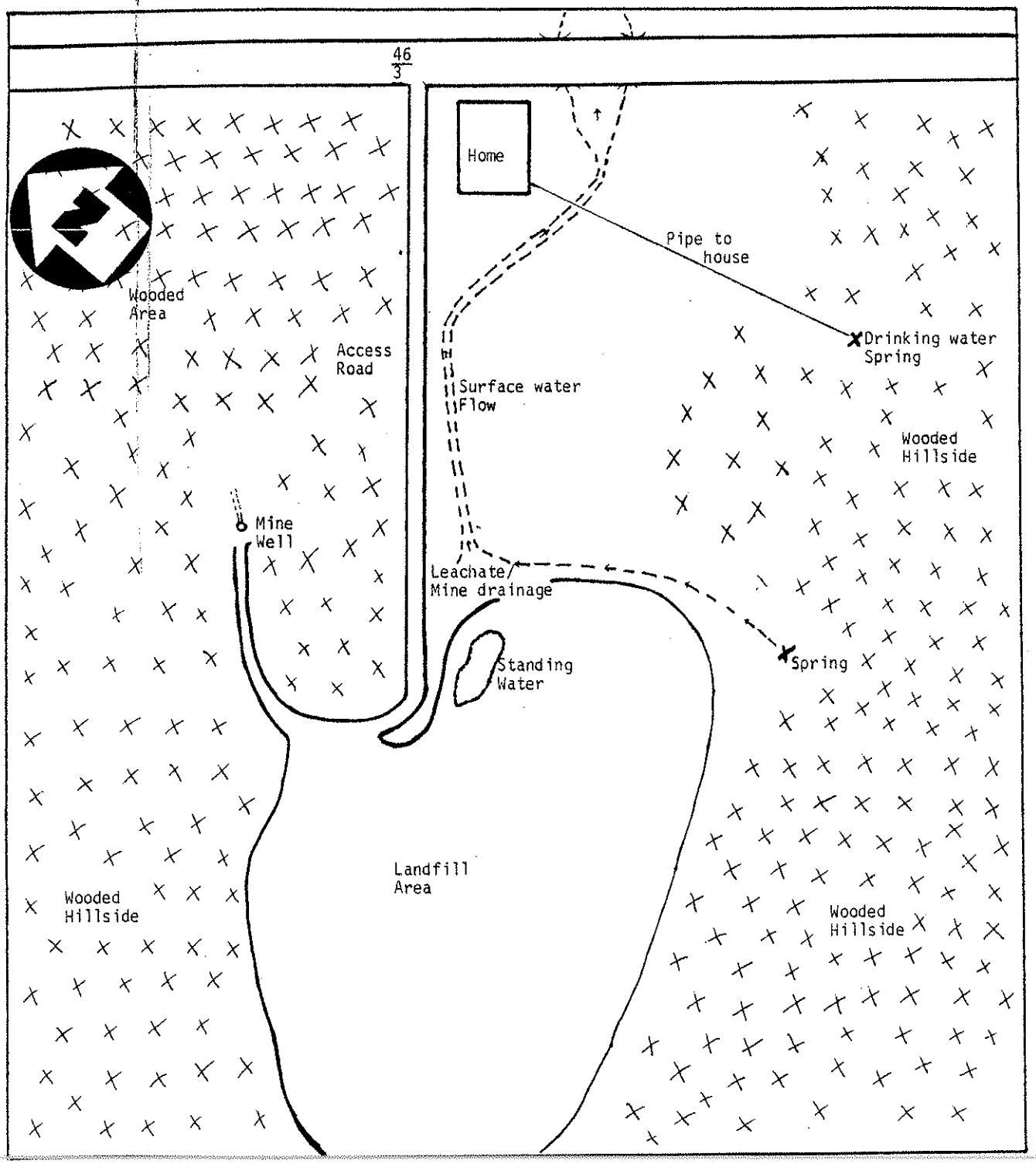
SOURCE: USGS OSAGE WV, PA Quad

SCALE: 1:24,000

NUS CORPORATION
A Halliburton Company

SITE NAME: Martin Hollow Landfill
TDD NO.: F3-8211-25
EPA NO.: WV-21
TITLE: Site Sketch
FIGURE NO.: 2

ORIGINAL (Red)



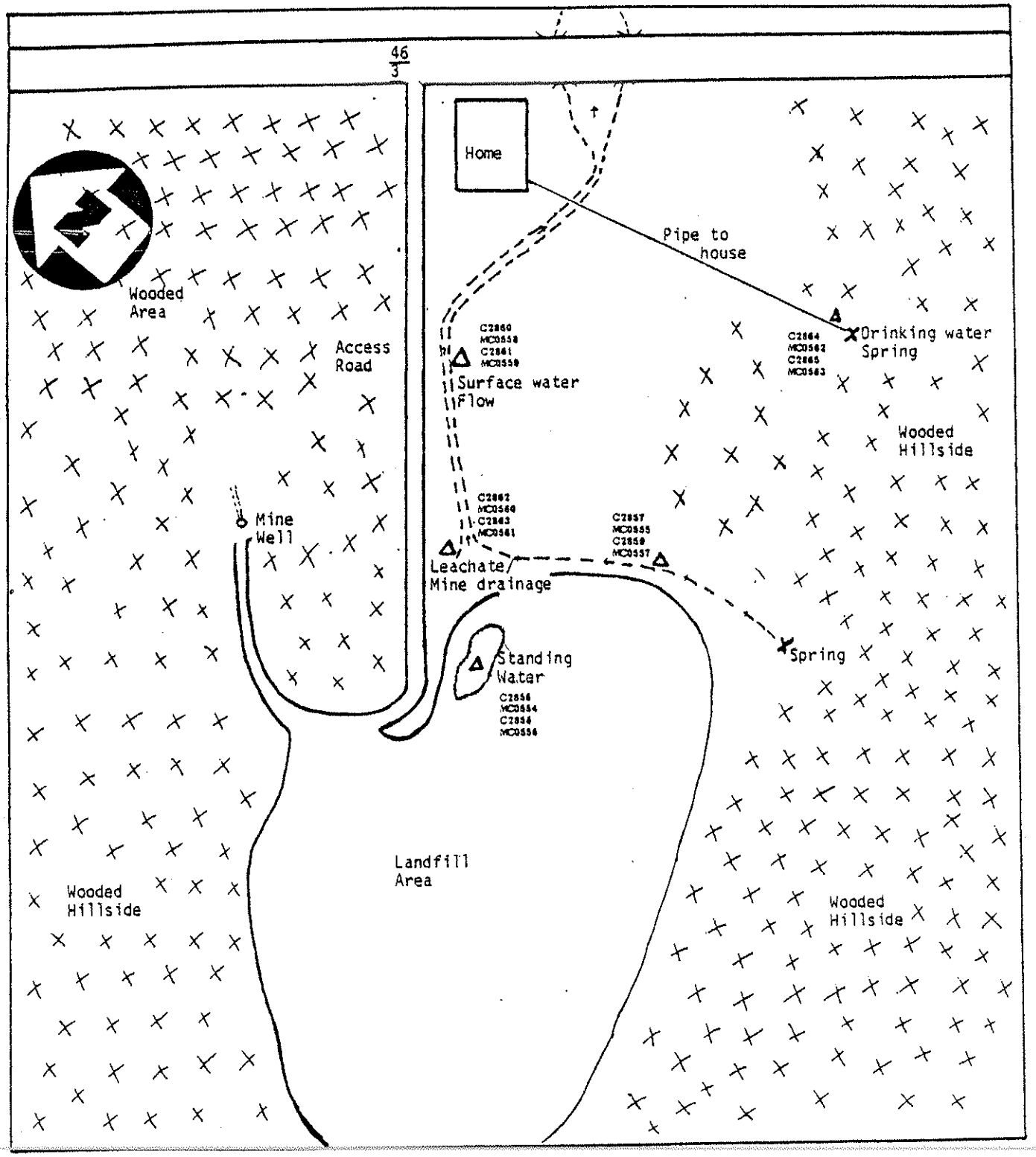
SOURCE: Field Trip Observations

SCALE: Not to Scale

NUS CORPORATION
A Halliburton Company

SITE NAME: Martin Hollow Landfill
TDD NO.: F3-8211-25
EPA NO.: WV-21
TITLE: Sample Location Sketch
FIGURE NO.: 3

ORIGINAL (Red)



SOURCE: Field Trip Observations

NUS CORPORATION
A Halliburton Company

APPENDIX C

ORIGINAL
(Red)

PROJECT NAME: Martin Hollow Landfill
TDD NO: F3-8211-25

EPA SITE NO.: WV-21
REGION: 3

QUALITY ASSURANCE REVIEW OF ORGANIC ANALYSIS LAB DATA PACKAGE

Case No.: 1624
Contract No.: 68-01-6728
Contract Laboratory: Spectrix
Applicable IFB No.:
Reviewer: John Austin EPA Reg 3
Review Date: 3/28/84

Applicable Sample No's.: C2856 - C2867

The organic analytical data for this case has been reviewed. The quality assurance evaluation is summarized in the following table:

Reviewer's Evaluation*	Fraction				
	VOLATILES	ACIDS	BASE/ NEUTRALS	PCB/ PEST.	TCDD
Acceptable	✓ Agreeing	✓ Agreeing	✓ Agreeing	✓ agreeing	X
Acceptable with exception(s)	1	2,3	2,3	3,4	X
Questionable					X
Unacceptable					X

* Definitions of the evaluation score categories are listed on next page.

This evaluation was based upon an analysis of the review items indicated below:

- ○ DATA COMPLETENESS
- ✓ BLANK ANALYSIS RESULTS
- ✓ SURROGATE SPIKE RESULTS
- ✓ MATRIX SPIKE RESULTS
- ✓ DUPLICATE ANALYSIS RESULTS
- ○ EVALUATION OF CONFIRMATIONS
- ○ TARGET COMPOUND MATCHING QUALITY
- ✓ TENTATIVELY IDENTIFIED COMPOUNDS
- ○ CHROMATOGRAPHIC SENSITIVITY CHECKS
- ○ DFTPP AND BFB SPECTRUM TUNE RESULTS
- ○ STANDARDS
- ○ CALIBRATION CHECK STANDARDS
- ○ INTERNAL STANDARDS PERFORMANCE

Data review forms are attached for each of the review items indicated above.

Comments: 1 blank contamination 2 surrogate recovery
3 duplicates 4 confirmations of identity

ORIGINAL
(Red)

DATA EVALUATION SCORE CATEGORIES

ACCEPTABLE: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

ACCEPTABLE WITH EXCEPTION(S): Data is not completely within established control limits. The deficiences are identified and specific data is still valid, given certain qualifications which are listed below.

QUESTIONABLE: Data is not within established control limits. The deficiences bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

UNACCEPTABLE: Data is not within established control limits. The deficiences imply the results are not meaningful.

ORIGINAL
(Red)

NARRATIVE

CASE NO: 1624

CONTRACT NO: 68-01-6728

During the process of combining acid and B/N fractions of the solid sample QC extracts, the B/N fraction of the matrix spike was accidently combined with the acid fraction of the duplicate sample, while the B/N fraction of the duplicate was combined with the acid fraction of the matrix spike. The data for FORMS II, A and B has been extracted from the appropriate reports with this in mind. Steps have been taken to reduce the possibility of this happening in the future.

Richard Scott
project manager

FO... II

ATER SURROGATE PERCENT RECOVER UMMARY

CASE NO. 1624
LOW LEVEL
WATER X
QC REPORT NO.

CONTRACTOR Spectrix
MED. LEVEL

CONTRACT NO.
HIGH LEVEL
OTHER (Specify)

[-------Volatile -------][----------Semi-Volatile----------][Pesticide]--[Dioxin]

SMO Traffic Report No.	D_8 Toluene (86-119)	D6 Benzene (81-119)	D_4-1,2-Dichloroethane (77-120)	D_5-Nitrobenzene (41-120)	2-Fluorobiphenyl (44-119)	D_{14}-p-Terphenyl (33-128)	D_5-Phenol (15-96)	2-Fluorophenol (23-107)	2,4,6-Tribromophenol (20-105)	Dibutylchlorendate (67-114)**	1,2,3,4-TCDD (23-148)
C2856	115	110		52.8	63.8		0*	0*			86.7
C2857	106	109		66.4	87		58.6	69.2			105
C2860	115	107		71.2	87.2		12.2*	DM*			35
C2862	111	108		63.2	57.8		0*	0*			55
C2864	116	110		70	53		83.6	67			86.7
k C2866	114	107		71.2	65.4		78.8	33			71.7
C2857D	97	107		80.6	82.6		86.8	64.4			[illegible]
LAB BLK	90.6	107		71.8	130*		36	DM*			100
C2862M											43.3
C2857M	163	107		136*	60.4		39.4	70.2			
C2862D											40

* Asterisked values are outside of QC limits.
** Advisory Limit
DM- Data not Entered Presumed Zero Recovery

Comments:
Low Recovery of Both Acid Surrogates C2856, C2860, C2862
Detection limits may be higher than reported for these samples

Volatiles: 0 out of 18; outside of QC limits
Semi-Volitales: 9 out of 36; outside of QC limits
Pesticides: N/A out of ___; outside of QC limits
Dioxin: 0 out of 0 ; outside of QC limits

Limits Revised 12/83

ORIGINAL (Red)

ORIGINAL (Red).

Soil

SURROGATE SPIKE RECOVERIES

1624 Spectrix

* Asterisked values are outside of QC limits

Surrogate compound name:		D5-benzene	d8-toluene	2-Fluorobiphenyl	Pentafluorophenol	d14 Terphenyl	1,2,3,4-TCDD						
Analytical Fraction:													
QC LIMITS: water:													
QC LIMITS: soil:		30-130	69-127	40-120	40-120	40-120	18**-128						
QC LIMITS: source:		Ref. 4	Ref.	Ref. 2	Ref. 2	Ref. 2	Ref. 3	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Matrix	Sample no.												
Soil	C2858	116	91	35*	13*	122*	22						
	C2859	115	102	DM*	39.7*	66	51.7						
	C2861	118	118	5.9*	16.8*	114	60						
	C2863	112	99.8	33.7*	0*	139*	43.3						
	C2865	114	100	18.7*	22.2*	105	50						
BLK	C2867	116	115	63.8	0*	184*	67.7						
	C2858D			17.5*	11.4*	91.2	46.7						
	LAB BLK			92.5	101	134	61.7						
	C2858M			25.9*	63.2	114	43.3						

Source of QC Limits: Ref. 1: IFB WA 83-0634, Am. 1
** Advisory Limits
Ref. 2: Instructional Guide for Reviewing GC/MS Data, version (11/5/82).
Ref 3: Revised Limits 12/83 Ref 4 EMSL-LV 11/83

COMMENTS:

Surrogate Recovery for Acidic & Basic compounds were below QC Limits. Detect limits may be higher than what were Reported.

FORM V

MATRIX SPIKE DUPLICATE/RECOVERY

CASE NO. 1624
LOW LEVEL
WATER
QC REPORT NO.

CONTRACTOR Spectrix
MED. LEVEL
SOIL/SED. X

CONTRACT NO.
HIGH LEVEL
OTHER (Specify)
UNITS (Circle) ug/kg ug/L

FRACTION	COMPOUND	CONC. SPIKE ADDED	CONC. MS	& REC.	CONC. MSD	& REC	RPD	QC %RECOVERY LIMITS* RPD	WATER	SOIL	COMMENTS
VOA SMO #	1,1-Dichloroethylene							<15%	61-145	59-177	
	Trichloroethylene							<15%	71-120	62-137	
	Chlorobenzene	Not Run						<15%	75-130	60-133	
	Toluene							<15%	76-125	59-139	
	Benzene							<15%	76-127	66-142	
B/N SMO # C2859	1,2,4-Trichlorobenzene	1000		80				<50%	39- 98	38-107	
	Acenaphthene			94.3				<50%	46-118	31-137	
	2,4-Dinitrotoluene			83.8				<50%	24- 96	28- 89	
	Di-N-Butylphthalate			109				<50%	11-117	29-135	
	Pyrene			110				<50%	26-127	35-142	
	N-Nitrosodi-N-Propylamine			77.9				<50%	41-116	41-126	
	1,4-Dichlorobenzene			67.9				<50%	36- 97	28-104	
ACID SMO # C2858	Pentachlorophenol	1000		25.4				<40%	9-103	17-109	
	Phenol							<40%	12- 89	26- 90	
	2-Chlorophenol	1000		61.6				<40%	27-123	25-102	
	P-Chlor-M-Cresol			48.6				<40%	23- 97	26-103	
	4-Nitrophenol							<40%	10- 80	11-114	
PEST SMO # C2858	Lindane							<40%	56-123	46-127	
	Heptachlor	100	1	36.2*				<40%	40-131	35-130	
	Aldrin			30*				<40%	40-120	34-132	
	Dieldrin			41.5*				<40%	52-126	31-134	
	Endrin							<40%	56-121	42-139	
	p,p-DDT							<40%	38-127	23-134	

*Asterisked values are outside QC limits.

RPD:
VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST ____ out of ____; outside QC limits

RECOVERY:
VOAs N/A out of ____; outside of QC limits
B/N 0 out of ____; outside of QC limits
ACID 0 out of ____; outside of QC limits
PEST 3 out of 3; outside of QC limits

*Advisory Limits
Revised 12/83

ORIGINAL (Red)

FORM V

MATRIX SPIKE DUPLICATE/RECOVERY

CASE NO. 1624
LOW LEVEL X
WATER X
QC REPORT NO.

CONTRACTOR Spectrix
MED. LEVEL
SOIL/SED.

CONTRACT NO.
HIGH LEVEL
OTHER (Specify)
UNITS (Circle) ug/kg ug/l

FRACTION	COMPOUND	CONC. SPIKE ADDED	CONC. MS	& REC.	CONC. MSD	& REC	RPD	QC %RECOVERY LIMITS* RPD	WATER	SOIL	COMMENTS
VOA SMO # C2857	1,1-Dichloroethylene							<15%	61-145	59-177	
	Trichloroethylene							<15%	71-120	62-137	
	Chlorobenzene	25	25.6	102				<15%	75-130	60-133	
	Toluene	25	26.6	106				<15%	76-125	59-139	
	Benzene	25	25.8	103				<15%	76-127	66-142	
B/N SMO # C2857	1,2,4-Trichlorobenzene	50	41.9	83.8				<50%	39- 98	38-107	
	Acenaphthene		48.3	97.6				<50%	46-118	31-137	
	2,4-Dinitrotoluene		13.8	27.6				<50%	24- 96	28- 89	
	Di-N-Butylphthalate		15.2	30.4				<50%	11-117	29-135	
	Pyrene		53.5	107				<50%	26-127	35-142	
	N-Nitrosodi-N-Propylamine		29.0	58				<50%	41-116	41-126	
	1,4-Dichlorobenzene		33.6	67.2				<50%	36- 97	28-104	
ACID SMO # C2857	Pentachlorophenol		.8	1.6*				<40%	9-103	17-109	
	Phenol	0						<40%	12- 89	26- 90	
	2-Chlorophenol	50	48.8	97.6				<40%	27-123	25-102	
	P-Chlor-M-Cresol	50	38.8	77.6				<40%	23- 97	26-103	
	4-Nitrophenol							<40%	10- 80	11-114	
PEST SMO # C2862	Lindane							<40%	56-123	46-127	
	Heptachlor	5	2.71	54.2				<40%	40-131	35-130	
	Aldrin		2.46	49.2*				<40%	40-120	34-132	
	Dieldrin		3.23	64.6				<40%	52-126	31-134	
	Endrin		.12					<40%	56-121	42-139	
	p,p-DDT							<40%	38-127	23-134	

*Asterisked values are outside QC limits.

RPD: VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST ____ out of ____; outside QC limits

RECOVERY: VOAs 0 out of 3; outside of QC limits
B/N 0 out of 7; outside of QC limits
ACID 1 out of 3; outside of QC limits
PEST 1 out of 3; outside of QC limits

*Advisory Limits
Revised 12/83

ORIGINAL (Red)

mple No: C2858D
ase No: 1624
ab Standard ID:

U.S. ENVIRONMENTAL PROTECTION AGENCY
HWI SAMPLE MANAGEMENT OFFICE

DC # 1624-3-18
Lab Name: SPECTRIX CORP.
Report No: 8
Page 1 of 1

QUALITY CONTROL REPORT

B. DUPLICATE ANALYSIS

COMPOUND (Including Surrogates)		CONCENTRATION (ug/KG)		
CAS #	COMPOUND NAME	Aliquot 1 (D_1)	Aliquot 2 (D_2)	Relative Percent Difference (RPD)*
	2-fluoroaniline	348	175	62.2
	pentafluorophenol	134	114	16.1
	decafluorobiphenyl	1220	912	14.4
	1,2,3,4-TCDD	0.26	0.56	73.2
117-81-7	bis(2 ethylhexyl) phthalate	20900	170	98.4
309-00-2	aldrin	0	0.06	200
72-55-9	4,4'-DDE	0.24	0.14	52.6
58-89-9	γ BHC	0.14	0.18	25.0
50-29-3	4,4'-DDT	1.83	0	200
72-55-9	4,4'-DDD	0.42	0	200
1024-57-3	heptachlor epoxide	0.07	0	200
319-84-6	α BHC	0.36	0	200
117-84-0	di-n-octyl phthalate	576	0	200

p 431

his QC Report also covers the following sample numbers: C2858; C2859; C2861; C2863; C2865; C2867

*RPD = $\frac{(D_1 - D_2)}{\text{[illegible]}} \times 100$

ORIGINAL (Red)

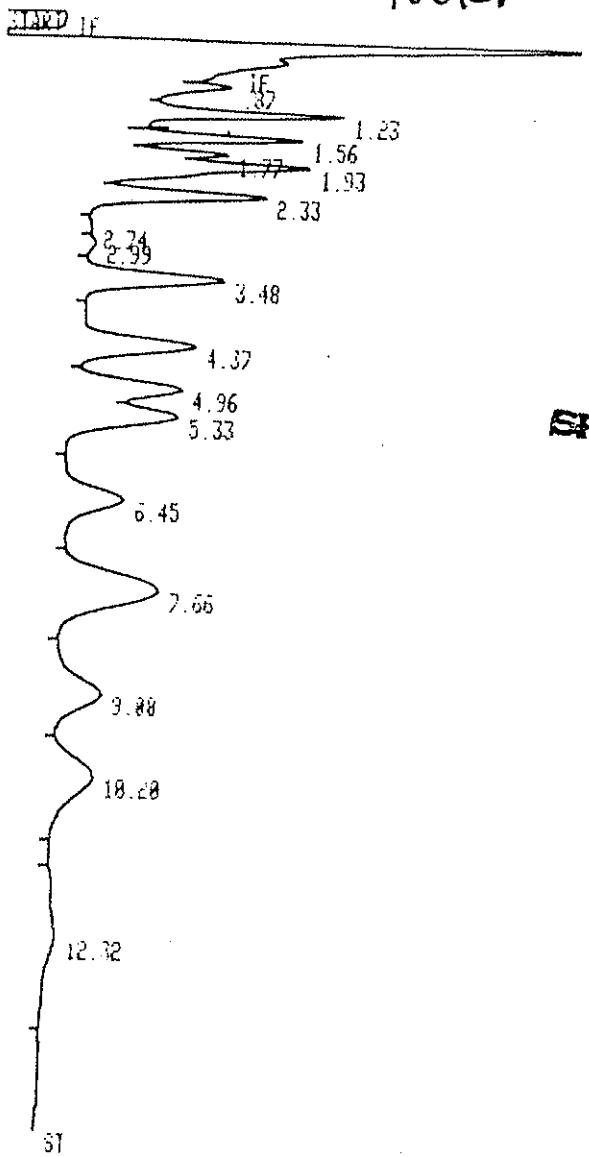
lul #3342 MKF

ORIGINAL (Red)

1624-3-17

16 pests

50 pg each



SPECTRIX CORPORATION

2) α BHC
3) γ BHC
4) β BHC
5) Δ BHC/ Heptachlor
6) Aldrin
7) Heptachlor Epoxide
8) α Endosulfan
9) DDE
10) Dieldrin
11) Endrin
12) DDD/ β endosulfan
13) DDT
14) endrin aldehyde
15) endo. sulfate

RUN # 45 APR/29/83 10:59:03

CAL#	RT	AMT	AMT/AREA
2R	1.22	5.0000E+01	4.3181E-05
3R	1.54	5.0000E+01	4.9569E-05
4R	1.75	5.0000E+01	7.9107E-05
5R	1.91	1.0000E+02	5.0699E-05
6R	2.32	5.0000E+01	3.5674E-05
7R	3.46	5.0000E+01	2.8698E-05
8R	4.36	5.0000E+01	2.6631E-05
9R	4.95	5.0000E+01	2.7613E-05
10R	5.32	5.0000E+01	2.5184E-05
11R	6.44	5.0000E+01	3.6394E-05
12R	7.65	1.0000E+02	2.9498E-05
13R	9.02	5.0000E+01	3.3824E-05
14R	10.19	5.0000E+01	2.9384E-05
15R	12.30	5.0000E+01	1.0073E-04

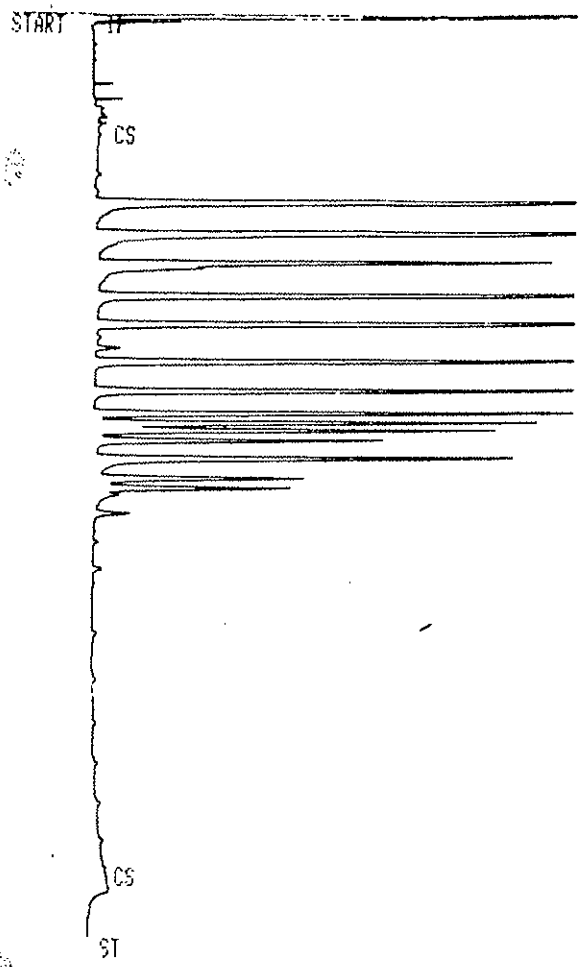
000345

1ul std #3342 MKF

ORIGINAL
(Red)

1624-3-14 17
MKF

SPECTRIX CORPORATION



16 pests 50 pg/ul

1) α BHC
2) β BHC / γ BHC
3) Δ BHC
4) Heptachlor
5) Aldrin
6) Heptachlor Epoxide
7) α endosulfan
8) Dieldrin
9) DDE
10) Endrin
11) β endosulfan
12) DDD / endrin aldehyde
13) endosulfan sulfate
14) DDT

RUN # 35 APR/21/83 10:36:39

:CALB @
:STD CALIB RUNS 2
REF % RTW: -0.10 % RTW: -0.10

CAL#	RT	AMT	AMT/AREA
1R	17.08	5.0000E+01	8.8404E-05
2R	17.92	1.0000E+02	1.5670E-04
3R	18.74	5.0000E+01	1.3577E-04
4R	19.59	5.0000E+01	9.3783E-05
5R	20.36	5.0000E+01	8.6311E-05
6R	21.39	5.0000E+01	1.1476E-04
7R	22.18	5.0000E+01	1.3382E-04
8R	22.79	5.0000E+01	1.4581E-04
9R	23.06	5.0000E+01	1.7303E-04
10R	23.25	5.0000E+01	1.7895E-04
11R	23.53	5.0000E+01	2.3221E-04
12R	24.04	1.0000E+02	3.0082E-04
13R	24.55	5.0000E+01	3.1248E-04
14R	24.81	5.0000E+01	3.1575E-04

000333

DC 1624-03-8

ORGANICS ANALYSIS DATA SHEET - Page 4

Sample Number
C 2856

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 7

Richard Scott

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	NONE FOUND	SV			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORIGINAL (Red)

ORGANICS ANALYSIS DATA SHEET - Page 4

Sample Number
C 2857

DC 1624-03-8

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 7

Richard Scott

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
	NONE FOUND	SV			

000023

ORIGINAL (Red)

DC#1624-03-8

Sample Number
C 2860

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 7

R. Scott

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	NONE FOUND	SV			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORIGINAL

DC 1624-03-8

Sample Number C2862

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: ~~8~~ 7

R. Scott

000178

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	NONE FOUND	SV			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORIGINAL (Red)

DC 1624-03-8

C2864

aboratory Name: SPECTRIX CORPORATION Case No: 1624

C Report No: 7

R. Scott

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
	NONE FOUND	SV			

000215

ORIGINAL (Red)

DC 1624-03-8 Field BLANK

C2866

Laboratory Name: SPECTRIX CORPORATION Case No: 1624

QC Report No: 7

Richard Scott P.M

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	NONE FOUND	SV			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORIGINAL (Red)

ORGANICS ANALYSIS DATA SHEET - Page 4

DC# 1624-03-08

Sample Number C2858

Laboratory Name: SPECTRIX CORPORATION

QC Report No: 7

Case No: 1624

B. Tentatively Identified Compounds

	CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	29538-77-0	TRANS-4-CHLORO-CYCLOHEXANOL	SV	583	67.5	620
2.	112-95-8	EICOSANE	SV	1270	83.5	415
3.	57-10-3	HEXADECANOICACID	SV	1560	75.6	200
4.		UNKNOWN - PROBABLY A PHTHALATE	SV	2068	39.6	700
5.		UNKNOWN - PROBABLY A PHTHALATE	SV	2079		1150
6.		UNKNOWN - PROBABLY A PHTHALATE	SV	2109		740
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						
25.						
26.						
27.						
28.						
29.						
30.						

000038

ORIGINAL (red)

ANICS ANALYSIS DATA SHEET - Page 1

DC # 1624-03-08

Sample Number: C2859

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 7

Richard Scott P.M.

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1. 123-42-2	4-HYDROXY-4-METHYL-2-PENTANONE	SV	386	94.8	340
2.	UNKNOWN	SV	586	73.9	490
3.	UNKNOWN	SV	1672	60.9	250
4.	UNKNOWN	SV	1857	66.4	2200
5. 630-06-8	HEXATRIACONTANE	SV	2057	81.2	630
6. 56554-96-2	2-OCTADECENAL	SV	2159	72.5	500
7. 630-06-8	HEXATRIACONTANE	SV	2169	81.1	1000
8. 124-25-4	TETRADECANAL	SV	2232	68.9	330
9.	UNKNOWN	SV	2266	68.7	330
10. 629-99-2	PENTACOSANE	SV	2273	81.2	850
11.	UNKNOWN	SV	2361	53.7	980
12. 56599-50-9	2-(7-HEPTADECYNYLOXY) TETRAHYDRO-2H-PYRAN	SV	2369	39.6	1200
13.	UNKNOWN	SV	2378	65.2	330
14.	UNKNOWN	SV	2385	55.2	300
15.	UNKNOWN	SV	2395	44.9	300
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORIGINAL (Red)

DC 1624-03-8

ORGANICS ANALYSIS DATA SHEET - Page

Sample Number C2861

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 8

R. Scott

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1. 123-42-2	4-HYDROXY-4-METHYL-2-PENTANONE	SV	301	94.7	400
2. 108-38-3	1,3-DIMETHYL-BENZENE	SV	366	95.0	270
3. 108-38-3	1,3-DIMETHYL-BENZENE	SV	401	88.6	280
4. 95-63-6	1,2,4-TRIMETHYL-BENZENE	SV	561	93.3	260
5.	UNKNOWN	SV	940	83.3	360
6. 569-41-5	1,8-DIMETHYL-NAPHTHALENE	SV	1058	92.9	290
7.	UNKNOWN	SV	1268	80.9	3300
8. 55045-14-2	4-ETHYL-TETRADECANE	SV	1355	65.0	300
9.	UNKNOWN	SV	1364	80.7	520
10. 10544-50-0	MOLECULAR SULFUR (S8)	SV	1555	91.2	1040
11.	UNKNOWN	SV	1670	60.8	370
12.	UNKNOWN	SV	1937	75.0	260
13.	UNKNOWN	SV	2043	72.0	680
14.	UNKNOWN	SV	2056	79.5	520
15.	UNKNOWN	SV	2158	65.6	510
16.	UNKNOWN	SV	2168	81.3	970
17.	UNKNOWN	SV	2232	63.8	340
18.	UNKNOWN	SV	2265	74.1	340
19.	UNKNOWN	SV	2273	78.6	640
20.	UNKNOWN	SV	2368	41.8	820
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

000128

ORIGINAL (Red)

DC 162X-03-8

C 2863

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 7

Richard Scott P.M.

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	UNKNOWN	SV	580	73.0	600
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

000193

ORIGINAL (Red)

Dc 1624-03-08

Sample Number C2865

000230

aboratory Name: SPECTRIX CORPORATION Case No: 1624

C Report No: 8

R. Scott

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
10544-50-0	MOLECULAR SULFUR (S8)	SV	1554	87.9	800
	UNKNOWN	SV	1667	63.5	330
	UNKNOWN	SV	1919	75.7	1000
	UNKNOWN	SV	2041	75.8	2000
	UNKNOWN	SV	2054	75.8	490
	UNKNOWN	SV	2156	74.7	300
112-95-8	EICOSANE	SV	2166	78.0	600
	UNKNOWN	SV	2271	78.4	300
	UNKNOWN	SV	2366	42.2	710

ORIGINAL (Red)

DC 1624-3-8 Field Blank

C2867

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

QC Report No: 8

R. Scott

000277

B. Tentatively Identified Compounds

CAS #	Compound Name	Fraction	Scan No.	% Purity	Est. Conc. UG/L or UG/KG
1.	NONE FOUND	SV			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORIGINAL (Red)

ORIGINAL
(Red)

PROJECT NAME: Martin Hollow
TDD NO.: F3-8211-25
EPA NO.: WV-21
REGION: III

QUALITY ASSURANCE REVIEW OF INORGANIC ANALYTICAL DATA PACKAGE

Case No.: 1624
Contract No.:
Contract Laboratory: VERSAR
Applicable IFB No.: WA072/WA073
Reviewer: D. K. White
Review Date: 4-18-84

Applicable Sample No's.:
MC0554 thru MC0565

The inorganic analytical data for this case has been reviewed. The quality assurance evaluation is summarized in the following table:

Reviewer's Evaluation*	Fraction			
	TASK I ICP or AA METALS	TASK II FURNACE AA METALS	TASK III COLD VAPOR AA MERCURY	TASK III CYANIDE
Acceptable			X	
Acceptable with exception(s)		X		X
Questionable	X①			
Unacceptable				

* Definitions of the evaluation score categories are listed on next page.

This evaluation was based upon an analysis of the review items indicated below:

- O DATA COMPLETENESS
- O BLANK ANALYSIS RESULTS
- O MATRIX SPIKE RESULTS
- O DUPLICATE ANALYSIS RESULTS
- O STANDARD ADDITIONS RESULTS
- O INITIAL CALIBRATION VERIFICATION
- O CONTINUING CALIBRATION VERIFICATION
- O INTERFERENCE QC RESULTS
- O DETECTION LIMITS RESULTS
- O INSTRUMENT SENSITIVITY REPORTS

Data review forms are attached for each of the review items indicated above.

Comments:

① DUE TO THE LACK OF SUPPORTING RAW DATA THE TASK I RESULTS COULD NOT BE VERIFIED FOR ANY OF THE SAMPLES IN THIS CASE

ORIGINAL
(Red)

DATA EVALUATION SCORE CATEGORIES

ACCEPTABLE: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

ACCEPTABLE WITH EXCEPTION(S): Data is not completely within established control limits. The deficiences are identified and specific data is still valid, given certain qualifications which are listed below.

QUESTIONABLE: Data is not within established control limits. The deficiences bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

UNACCEPTABLE: Data is not within established control limits. The deficiences imply the results are not meaningful.

ORIGINAL (Red)

INORGANIC DATA COMPLETENESS CHECKLIST

	TRAFFIC REPORT #	MC0557	MC0555	MC0556	MC0557	MC0558	MC0559	MC0560	MC0561	MC0562	MC0563	MC0564	MC0565
	MATRIX (SOL,AQ)	AQ	AQ	SED	SED	AQ	SED	AQ	SED	AQ	SED	AQ	SED
	(LO, MED, HI) CONC.	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
FIELD QC	BLANK	✓	—	—	—	—	—	—	—	—	—	—	→
	DUPLICATE												
	SPIKE												
TASK I: ICAP or AA Metals	Raw data	No	—	—	—	—	—	—	—	—	—	—	→
	TAB. results	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. D.L.'s	✓	—	—	—	—	—	—	—	—	—	—	→
	QA Form	✓	—	—	—	—	—	—	—	—	—	—	→
	ICAP Interference QC	✓	—	—	—	—	—	—	—	—	—	—	→
	Instr. Sens.	✓	—	—	—	—	—	—	—	—	—	—	→
TASK II: Furnace AA Metals	Raw data	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. results	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. D.L.'s	✓	—	—	—	—	—	—	—	—	—	—	→
	QA Form	✓	—	—	—	—	—	—	—	—	—	—	→
	Instr. Sens.	✓	—	—	—	—	—	—	—	—	—	—	→
TASK II: Cold Vapor AA: Mercury	Raw data	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. results	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. D.L.'s	✓	—	—	—	—	—	—	—	—	—	—	→
	QA Form	✓	—	—	—	—	—	—	—	—	—	—	→
	Instr. Sens.	✓	—	—	—	—	—	—	—	—	—	—	→
TASK III: Cyanide	Raw data	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. results	✓	—	—	—	—	—	—	—	—	—	—	→
	TAB. D.L.'s	✓	—	—	—	—	—	—	—	—	—	—	→
	QA Form	✓	—	—	—	—	—	—	—	—	—	—	→
	Instr. Sens.	✓	—	—	—	—	—	—	—	—	—	—	→
Other (Specify):	Raw data												
	TAB. results												
	TAB. D.L.'s												
	QA Form												
	Instr. Sens.												
Other (Specify):	Raw data												
	TAB. results												
	TAB. D.L.'s												
	QA Form												
	Instr. Sens.												

Comments: ICAP RAW DATA WAS NOT SUBMITTED BY THE CONTRACT LAB

ORIGINAL
(Red)

Blank Analysis Results

The contaminants found in the blanks are listed below:

FRACTION	TYPE OF BLANK	SAMPLE NO.	SOURCE OF	CONTAMINANTS (concentration/DL)
INORGANIC I, II, III	Aqueous Field	MC0564		Fe : 50 µg/L Zn : 10 µg/L
INORGANIC I, II, III	Solid Field	MC0565		Fe : 5.0 mg/kg
INORGANIC I, II, III	LAB	—		Al : 120 µg/L Cr : 8 µg/L Fe : 32 µg/L

COMMENTS:

Results for iron, zinc, aluminum and chromium in samples with iron results of less than 250 µg/L (50x5), zinc results less than 50 µg/L (10x5), aluminum results of less than 600 µg/L (120x5) and chromium results of less than 40 µg/L (8x5) should be considered questionable due to a combination of both lab and field blank results.

ORIGINAL
(Red)

MATRIX SPIKE RECOVERIES

Sample No.	MC0564	MC0556	MC0562	MC0561	MC0555	
Field Spike						
Lab Spike	✓	✓	✓	✓	✓	
Matrix	AQ	SOL	AQ	SOL	AQ	
Conc. Level	LOW	LOW	LOW	LOW	LOW	
Method Std.						
Fraction	I, II	I, II	II - Hg	II - Hg, III	III	

All matrix spike recoveries were within the established control ranges specified in; IFB WA82-A072, Exhibit E, Table 2. ___ Yes X No

Exception(s):

Parameter	Accepted Range (%)	Actual % Rec.	Sample Number	Org. Result	Spike Added	Spike Result	Units
Al	80-120	53	MC0564	<15	200	105	ug/L
Cd	75-125	70	MC0564	<1	10	7	ug/L
Se	75-125	70	MC0564	<2	20	14	ug/L
Se	75-125	60	MC0556	0.1	0.7	1.0	mg/kg
CN	80-120	70	MC0555	<0.01	0.10	0.07	mg/L
CN	80-120	72	MC0561	<0.5	9.3	6.7	mg/kg

Comments: For matrix spike recovery evaluation, the contract laboratory used the aqueous field blank which is not representative of the actual sample matrix at the sampling site. Therefore, the validity of the aqueous sample data should be regarded as questionable in that the possibility of matrix interferents was not properly delineated.

ORIGINAL
(Red)

Duplicate Analysis Results

The applicable duplicate pairs are:

sample no.	MC0564	MC0556	MC0554	MC0561	MC0555	
Field duplicate						
Lab duplicate	✓	✓	✓	✓	✓	
sample level	LOW	LOW	LOW	LOW	LOW	
sample matrix	AQ	SOL	AQ	SOL	AQ	
Fraction	I, II	I, II	II-Ha	II-Ha, III	~~III~~	

The relative percent difference (RPD) for each parameter group was evaluated. The duplicate analysis RPD acceptance criteria should be:

Fraction	maximum acceptable Percent Difference
AQ	20%
SOL	40%

The RPD's exceeding the maximum acceptable percent difference were:

Fraction	Compound	Actual RPD	Sample	Comparison conc.	Comparison conc.
AQ	Fe	87	MC0554	46	18
AQ	Zn	93	MC0564	12	33
SOL	P	59	MC0556	7.5	13.8
SOL	CN	200	MC0561	<0.5	1.5

Comments: High relative percent difference observed on aqueous matrix duplicates probably due to blank contamination as previously mentioned

ORIGINAL
(Red)

STANDARD ADDITION RESULTS

Documentation indicates a standard addition correction was performed on all spiked samples for parameters having recoveries outside of control limits: Yes X No____

For the parameters having poor recoveries in the spiked sample(s), standard additions were also performed on all other samples where the following conditions were met:

(1) The sample matrix was similar to the matrix of the sample which was spiked; and

(2) The parameters in question were detected with postive results.

Yes___ No X

(NOT REQUIRED AT THIS TIME)

The parameters with poor spike recoveries are listed below, along with the type of standard addition performed(none, 1, 2, or 3 point). The results for these parameters in other samples which have a similar matrix are also listed below:

sample	description of matrix	parameter	recovery	type of std. add.

Comments:

ORIGINAL (Red)

Initial Calibration Verification and Continuing Calibration Verification

Documentation indicates calibrations were performed and checked every ten samples: Yes___ No_

Exceptions: LACK OF ICP RAW DATA PREVENTS VERIFICATION OF CALIBRATION FREQUENCY

Calibrations and verifications were all within the control limits specified in

_____: Yes X No

Outliers are listed below:

Parameter	Acceptable Range (%)	Calibration Identifier	% of True Value	Comments

Interference QC Results

Documentation indicates interference QC samples were run before and after every ten samples: Yes___ No

Exceptions: LACK OF ICP RAW DATA PREVENTS VERIFICATION OF INTERFERENCE QC CHECK FREQUENCY.

Interference QC results were all within the control limits specified in

_____: NOT SPECIFIED IN 82-WAC72/WAC73 Yes___ No_

Exceptions:

Parameter	Acceptable Range (%)	Calibration Identifier	% of True Value	Comments

ORIGINAL
(Red)

Detection Limits Results

Detection limits were reported for all samples analyzed: Yes X No ____

Exceptions: _____

Detection limits were less than or equal to the required detection limits specified in _____. Yes X No ____

Exceptions: _____

Instrument Sensitivity Reports

Instrument sensitivity reports were documented for all parameters:

Yes X No ____

Comments: _____

Other Remarks Concerning this Case:

APPENDIX D

ORGANICS ANALYSIS DATA SHEET

oratory Name: SPECTRIX CORP. Case No: 1624

Sample I.D. No: 83-04-013 QC Report No: 8

ORIGINAL (Red)

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 2.1

ACID COMPOUNDS

P #	CAS #		ug/kg
1A)	88-06-2	2,4,6- trichlorophenol	100 U
2A)	59-50-7	p-chloro-m-cresol	100 U
4A)	95-57-8	2- chlorophenol	100 U
1A)	120-83-2	2,4-dichlorophenol	100 U
4A)	105-67-9	2,4-dimethylphenol	100 U
7A)	88-75-5	2- nitrophenol	200 U
8A)	100-02-7	4-nitrophenol	1000 U
9A)	51-28-5	2,4-dinitrophenol	500 U
0A)	534-52-1	4,6-dinitro-2-methylphenol	200 U
4A)	87-86-5	pentachlorophenol	200 U
5A)	108-95-2	phenol	100 U

BASE/NEUTRAL COMPOUNDS

3)	83-32-9	acenaphthene	100 U
3)	92-87-5	benzidine	400 U
3)	120-82-1	1,2,4-trichlorobenzene	100 U
3)	118-74-1	hexachlorobenzene	100 U
2B)	67-72-1	hexachloroethane	100 U
3)	111-44-4	bis(2-chloroethyl)ether	100 U
8)	91-58-7	2-chloronaphthalene	100 U
5B)	95-50-1	1,2-dichlorobenzene	100 U
3B)	541-73-1	1,3-dichlorobenzene	100 U
7B)	106-46-7	1,4-dichlorobenzene	100 U
8B)	91-94-1	3,3'-dichlorobenzidine	200 U
5B)	121-14-2	2,4-dinitrotoluene	200 U
5B)	606-20-2	2,6-dinitrotoluene	200 U
B)	122-66-7	1,2-diphenylhydrazine	200 U
B)	206-44-0	fluoranthene	100 U
8B)	7005-72-3	4-chlorophenyl phenyl ether	100 U
B)	101-55-3	4-bromophenyl phenyl ether	100 U
B)	39638-32-9	bis (2-chloroisopropyl) ether	200 U
B)	111-91-1	bis (2-chloroethoxy) methane	200 U
B)	87-68-3	hexachlorobutadiene	100 U
B)	77-47-4	hexachlorocyclopentadiene	100 U
B)	78-59-1	isophorone	100 U
B)	91-20-3	naphthalene	K 100 U
B)	98-95-3	nitrobenzene	100 U
B)	86-30-6	N-nitrosodiphenylamine	100 U
B)	621-64-7	N-nitrosodipropylamine	200 U
B)	117-81-7	bis (2-ethylhexyl) phthalate	197 ~~100 U~~
B)	85-68-7	benzyl butyl phthalate	100 U
B)	84-74-2	di-n-butyl phthalate	100 U
B)	117-84-0	di-n-octyl phthalate	100 U
B)	84-66-2	diethyl phthalate	K 100 U
B)	131-11-3	dimethyl phthalate	100 U
B)	56-55-3	benzo(a)anthracene	100 U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		ug/kg
(73B)	50-32-8	benzo(a)pyrene	200 U
(74B)	205-99-2	benzo(b)fluoranthene	200 U
(75B)	207-08-9	benzo(k)fluoranthene	200 U
(76B)	218-01-9	chrysene	100 U
(77B)	208-96-8	acenaphthylene	100 U
(78B)	120-12-7	anthracene	100 U
(79B)	191-24-2	benzo(ghi)perylene	200 U
(80B)	86-73-7	fluorene	100 U
(81B)	85-01-8	phenanthrene	100 U
(82B)	53-70-3	dibenzo(a,h)anthracene	200 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	200 U
(84B)	129-00-0	pyrene	100 U

VOLATILES

(2V)	107-02-8	acrolein	50 U
(3V)	107-13-1	acrylonitrile	50 U
(4V)	71-43-2	benzene	2.5 U
(6V)	56-23-5	carbon tetrachloride	2.5 U
(7V)	108-90-7	chlorobenzene	2.5 U
(10V)	107-06-2	1,2-dichloroethane	2.5 U
(11V)	71-55-6	1,1,1-trichloroethane	2.5 U
(13V)	75-34-3	1,1-dichloroethane	2.5 U
(14V)	79-00-5	1,1,2-trichloroethane	2.5 U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	2.5 U
(16V)	75-00-3	chloroethane	2.5 U
(19V)	110-75-8	2-chloroethylvinyl ether	2.5 U
(23V)	67-66-3	chloroform	2.5 U
(29V)	75-35-4	1,1-dichloroethene	2.5 U
(30V)	156-60-5	trans-1,2-dichloroethene	2.5 U
(32V)	78-87-5	1,2-dichloropropane	2.5 U
(33V)	10061-02-6	trans-1,3-dichloropropene	2.5 U
	10061-01-05	cis-1,3-dichloropropene	.5 U
(38V)	100-41-4	ethylbenzene	2.5 U
(44V)	75-09-2	methylene chloride	9.7 ~~2.5 U~~
(45V)	74-87-3	chloromethane	2.5 U
(46V)	74-83-9	bromomethane	2.5 U
(47V)	75-25-2	bromoform	2.5 U
(48V)	75-27-4	bromodichloromethane	2.5 U
(49V)	75-69-4	fluorotrichloromethane	2.5 U
(50V)	75-71-8	dichlorodifluoromethane	—
(51V)	124-48-1	chlorodibromomethane	2.5 U
(85V)	127-18-4	tetrachloroethene	2.5 U
(86V)	108-88-3	toluene	2.5 U
(87V)	79-01-6	trichloroethene	2.5 U
(88V)	75-01-4	vinyl chloride	2.5 U

Richard Scott P.M.

000068

ORGANICS ANALYSIS DATA SHEET - Page 2

Sample Number C2859

LOW LEVEL SOLID

Laboratory Name: SPECTRIX CORP. Case No: 1624

Sample I.D. No: 83-04-013 QC Report No: 8

ORIGINAL (Red)

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 2.1

PESTICIDES

PP #	CAS #		ug/kg
89P)	309-00-2	aldrin	0.02 U
90P)	60-57-1	dieldrin	** 0.09 ~~0.02 U~~ **
91P)	57-74-9	chlordane	0.2 U
92P)	50-29-3	4,4'-DDT	0.04 U
93P)	72-55-9	4,4'-DDE	** 0.22 ~~0.02 U~~ **
94P)	72-54-8	4,4'-DDD	0.04 U
95P)	115-29-7	α-endosulfan	0.02 U
96P)	115-29-7	β-endosulfan	0.02 U
97P)	1031-07-8	endosulfan sulfate	0.04 U
98P)	72-20-8	endrin	0.02 U
99P)	7421-93-4	endrin aldehyde	0.04 U
100P)	76-44-8	heptachlor	0.02 U
101P)	1024-57-3	heptachlor epoxide	** 0.05 ~~0.02 U~~ **
102P)	319-84-6	α-BHC	0.02 U

PESTICIDES

PP #	CAS #		ug/kg
(103P)	319-85-7	β-BHC	0.02 U
(104P)	319-86-8	δ-BHC	0.02 U
(105P)	58-89-9	γ-BHC (lindane)	0.02 U
(106P)	53469-21-9	PCB-1242	0.2 U
(107P)	11097-69-1	PCB-1254	0.4 U
(108P)	11104-28-2	PCB-1221	0.4 U
(109P)	11141-16-5	PCB-1232	0.4 U
(110P)	12672-29-6	PCB-1248	0.4 U
(111P)	11096-82-5	PCB-1260	0.8 U
(112P)	12674-11-2	PCB-1016	0.2 U
(113P)	8001-35-2	toxaphene	0.2 U

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.1 U

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #		ug/kg
65-85-0	benzoic acid	3460 ~~1000 U~~
95-48-7	2-methylphenol	100 U
108-39-4	4-methylphenol	100 U
95-95-4	2,4,5-trichlorophenol	1000 U

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	100 U
100-51-6	benzyl alcohol	200 U
106-47-8	4-chloroaniline	500 U
132-64-9	dibenzofuran	100 U
91-57-6	2-methylnaphthalene	K 200 U
88-74-4	2-nitroaniline	1000 U
99-09-2	3-nitroaniline	1000 U
100-01-6	4-nitroaniline	1000 U

VOLATILES

CAS #		ug/kg
67-64-1	acetone	2.5 U
78-93-3	2-butanone	2.5 U
75-15-0	carbondisulfide	0.5 U
519-78-6	2-hexanone	2.5 U
108-10-1	4-methyl-2-pentanone	2.5 U
100-42-5	styrene	2.5 U
108-05-4	vinyl acetate	2.5 U
95-47-6	o-xylene	2.5 U

Richard Scott P.M.

4/82

000069

DOCUMENT CONTROL # 1624-03 -8

CASE # — 1624

Sample Number C2859

ORIGINAL (Red)

ORGANICS ANALYSIS DATA SHEET - Page 3

S FORM I ( )

ry Name: SPECTRIX CORPORATION

rt No: 8-7-8

A. Surrogate Spike Results

Compound Name	Fraction	Concentration (ug/kg)	Surrogates Only: Spike Added (ug/kg)	Surrogates Only: Percent Recovery
luorophenol	BNAP			
luoroaniline	BNAP		1000	
ds)-phenol	BNAP			
tafluorophenol	BNAP	397	1000	39.7
ni benzene	BNAP			
af uorobiphenyl	BNAP	664	1000	66.4
luorobiphenyl	BNAP			
Benzene	VOA	115	100	115
toluene	VOA	102	100	102
,3,4-TCDD	TCDD	0.62	1.2	51.7

Data Reporting Qualifiers

ting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. of such flags must be explicit however.

If the result is a value greater than or equal to the detection limit, report the value.

Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative result is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K - Actual value, within the limitations of this method, is less than the value given.

This flag applies to analyses performed by Fused Silica Capillary Column.

J - Indicates an estimated value which is used when estimating a concentration for tentatively identified compounds; e.g., 1200J. The footnote should read: J - Estimated value.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described in a page attached to the data summary report.

** - This flag applies to pesticides parameters where the identification has been performed using two columns confirmation (as specified in Method 608) but the level is too low for verification of the compound by mass spectrometry.

CX - This flag is used to indicate those compounds which were concentrated by a factor of 10 times.

Richard Scott P.M.

000070

C2857

ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

Lab Sample I.D. No: 8304013

QC Report No: 7

Multiply Detection Limits by 1 [✓] or 10 [ ] (Check Box for Appropriate Factor)

5 [ ]

ACID COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	12	U
(22A)	59-50-7	p-chloro-m-cresol	5.4	U
(24A)	95-57-8	2- chlorophenol	5.2	U
(31A)	120-83-2	2,4-dichlorophenol	8.8	U
(34A)	105-67-9	2,4-dimethylphenol	1.5	U
(57A)	88-75-5	2- nitrophenol	0.8	U
(58A)	100-02-7	4-nitrophenol	66	U
(59A)	51-28-5	2,4-dinitrophenol	54	U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	19	U
(64A)	87-86-5	pentachlorophenol	20	U
(65A)	108-95-2	phenol	9	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(1B)	83-32-9	acenaphthene	1.9	U
(5B)	92-87-5	benzidine	-0-	U
(8B)	120-82-1	1,2,4-trichlorobenzene	4.7	U
(9B)	118-74-1	hexachlorobenzene	11	U
(12B)	67-72-1	hexachloroethane	1.3	U
(18B)	111-44-4	bis(2-chloroethyl)ether	5.1	U
(20B)	91-58-7	2-chloronaphthalene	1.5	U
(25B)	95-50-1	1,2-dichlorobenzene	7.9	U
(26B)	541-73-1	1,3-dichlorobenzene	8.5	U
(27B)	106-46-7	1,4-dichlorobenzene	6.1	U
(28B)	91-94-1	3,3'-dichlorobenzidine	18	U
(35B)	121-14-2	2,4-dinitrotoluene	11	U
( )	606-20-2	2,6-dinitrotoluene	4.7	U
( )	122-66-7	1,2-diphenylhydrazine	7.1	U
(39B)	206-44-0	fluoranthene	2.5	U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	6.6	U
(41B)	101-55-3	4-bromophenyl phenyl ether	8.0	U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	18	U
(43B)	111-91-1	bis (2-chloroethoxy) methane	1.4	U
(52B)	87-68-3	hexachlorobutadiene	18	U
(53B)	77-47-4	hexachlorocyclopentadiene	20	U
(54B)	78-59-1	isophorone	7.4	U
(55B)	91-20-3	naphthalene	2.8	U
(56B)	98-95-3	nitrobenzene	5.1	U
(62B)	86-30-6	N-nitrosodiphenylamine	-0-	U
(63B)	621-64-7	N-nitrosodipropylamine	13.3	U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	22	U
(67B)	85-68-7	benzyl butyl phthalate	24	U
(68B)	84-74-2	di-n-butyl phthalate	16	U
(69B)	117-84-0	di-n-octyl phthalate	22	U
(70B)	84-66-2	diethyl phthalate	8	U
(71B)	131-11-3	dimethyl phthalate	3.5	U
(72B)	56-55-3	benzo(a)anthracene	4.4	U
(73B)	50-32-8	benzo(a)pyrene	1.0	U
(74B)	205-99-2	benzo(b)fluoranthene	7.2	U
(75B)	207-08-9	benzo(k)fluoranthene	7.2	U
(76B)	218-01-9	chrysene	5.1	U
(77B)	208-96-8	acenaphthylene	1.8	U
(78B)	120-12-7	anthracene	7.6	U
(79B)	191-24-2	benzo(ghi)perylene	12	U
(80B)	86-73-7	fluorene	4.2	U
(81B)	85-01-8	phenanthrene	7.5	U
(82B)	53-70-3	dibenzo(a,h)anthracene	7.8	U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	13	U
(84B)	129-00-0	pyrene	2.1	U

VOLATILES

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(2V)	107-02-8	acrolein	250	U
(3V)	107-13-1	acrylonitrile	122	U
(4V)	71-43-2	benzene	2.7	U
(6V)	56-23-5	carbon tetrachloride	4.0	U
(7V)	108-90-7	chlorobenzene	4.8	U
(10V)	107-06-2	1,2-dichloroethane	2.0	U
(11V)	71-55-6	1,1,1-trichloroethane	3.4	U
(13V)	75-34-3	1,1-dichloroethane	3.6	U
(14V)	79-00-5	1,1,2-trichloroethane	3.9	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	4.4	U
(16V)	75-00-3	chloroethane	8.9	U
(19V)	110-75-8	2-chloroethylvinyl ether	18.6	U
(23V)	67-66-3	chloroform	3.6	U
(29V)	75-35-4	1,1-dichloroethene	3.4	U
(30V)	156-60-5	trans-1,2-dichloroethene	5.7	U
(32V)	78-87-5	1,2-dichloropropane	2.9	U
(33V)	10061-02-6	trans-1,3-dichloropropene	9.4	U
	10061-01-05	cis-1,3-dichloropropene	5.0	U
(38V)	100-41-4	ethylbenzene	4.9	U
(44V)	75-09-2	methylene chloride	0.7	UB
(45V)	74-87-3	chloromethane	35.3	U
(46V)	74-83-9	bromomethane	9.4	U
(47V)	75-25-2	bromoform	7.9	U
(48V)	75-27-4	bromodichloromethane	5.9	U
(51V)	124-48-1	chlorodibromomethane	7.2	U
(85V)	127-18-4	tetrachloroethene	10.0	U
(86V)	108-88-3	toluene	5.8	U
(87V)	79-01-6	trichloroethene	10.4	U
(88V)	75-01-4	vinyl chloride	32.2	U

Richard Scott 4/87

ORGANICS ANALYSIS DATA SHEET - Page 2

S FORM I ( )

ORIGINAL (Red)

Sample Number C2857

Laboratory Name: SPECTRIX CORPORATION

Case No: 1627

Lab Sample I.D. No: 8304013

QC Report No: 7

Multiply Detection Limits by 1 ☑ or 10 ☐ (Check Box for Appropriate Factor)

5 ☐

PESTICIDES

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(89P)	309-00-2	aldrin	0.001	U
(90P)	60-57-1	dieldrin	0.001	U
(91P)	57-74-9	chlordane	0.03	U
(92P)	50-29-3	4,4'-DDT	0.010	U
(93P)	72-55-9	4,4'-DDE	0.002	U
(94P)	72-54-8	4,4'-DDD	0.005	U
(95P)	115-29-7	α-endosulfan	0.004	U
(96P)	115-29-7	β-endosulfan	0.004	U
(97P)	1031-07-8	endosulfan sulfate	0.003	U
(98P)	72-20-8	endrin	0.001	U
(99P)	7421-93-4	endrin aldehyde	0.007	U
(100P)	76-44-8	heptachlor	0.003	U
(101P)	1024-57-3	heptachlor epoxide	0.002	U
(102P)	319-84-6	α-BHC	0.002	U

PESTICIDES

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(103P)	319-85-7	β-BHC	0.003	U
(104P)	319-86-8	δ-BHC	0.001	U
(105P)	58-89-9	γ-BHC (lindane)	0.001	U
(106P)	53469-21-9	PCB-1242	0.03	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221	-1	U
(109P)	11141-16-5	PCB-1232	0.03	U
(110P)	12672-29-6	PCB-1248	0.02	U
(111P)	11096-82-5	PCB-1260	0.10	U
(112P)	12674-11-2	PCB-1016	0.01	U
(113P)	8001-35-2	toxaphene	0.01	U

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.005	U

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #			ug/l or ug/kg (circle one)
65-85-0	benzoic acid	-1	U
95-48-7	2-methylphenol	7.3	U
108-39-4	4-methylphenol	12.8	U
95-95-4	2,4,5-trichlorophenol	22	U

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	25	U
100-51-6	benzyl alcohol	13	U
106-47-8	4-chloroaniline	8.8	U
132-64-9	dibenzofuran	-1	U
91-57-6	2-methylnaphthalene	2.3	U
88-74-4	2-nitroaniline	4.1	U
99-09-2	3-nitroaniline	35	U
100-01-6	4-nitroaniline	-1	U

VOLATILES

CAS #			ug/l or ug/kg (circle one)
67-64-1	acetone	22.5	U
78-93-3	2-butanone	11.5	U
75-15-0	carbondisulfide	2.3	U
519-78-6	2-hexanone	12.1	U
108-10-1	4-methyl-2-pentanone	12.8	U
100-42-5	styrene	7.4	U
108-05-4	vinyl acetate	12.3	U
95-47-6	o-xylene	11.1	U

4/82

Instrumental detection limits not determined because good quality standards were not available.

Richard Scott

ORIGINAL
(Red)

DOCUMENT CONTROL # 1624-03 -8

CASE # 1624

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Number
C 2857

S FORM I ( )

atory Name: SPECTRIX CORPORATION

:port No: 7

A. Surrogate Spike Results

Compound Name	Fraction	Concentration (ug/l)	Surrogates Only	
			Spike Added (ug/l)	Percent Recovery
-fluorophenol	SV	34.6	50	69.2
-f oroaniline	SV		50	
6( )-phenol	SV	29.3	50	58.6
entafluorophenol	SV		50	
5-nitrobenzene	SV	33.2	50	66.4
ecafluorobiphenyl	SV		50	
-fluorobiphenyl	SV	43.5	50	87.0
-benzene	VOA	107.5	100	108
toluene	VOA	100.4	100	100
,2,3,4-TCDD	Dioxin	0.063	0.060	105

Data Reporting Qualifiers

ting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. n of such flags must be explicit however.

If the result is a value greater than or equal to the detection limit, report the value.

Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative result is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K - Actual value, within the limitations of this method, is less than the value given.

This flag applies to analysis performed by Fused Silica Capillary Columns.

J - Indicates an estimated value which is used when estimating a concentration for tentatively identified compounds; e.g., 12001. The footnote should read: J - Estimated value.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described in a page attached to the data summary report.

** - This flag applies to pesticides parameters where the identification has been performed using two column confirmation (as specified in Method 608) but the level is too low for verification of the compound by mass spectrometry.

CX - This flag is used to indicate those compounds which were concentrated by a factor of 10 times.

Richard Scott

000022

LOW LEVEL SOLID

ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

oratory Name: SPECTRIX CORP. Case No: 1624

Sample I.D. No: 83-04-013 QC Report No: 8

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 1.5

ACID COMPOUNDS

PP #	CAS #		ug/kg
1A)	88-06-2	2,4,6- trichlorophenol	100 U
2A)	59-50-7	p-chloro-m-cresol	100 U
4A)	95-57-8	2- chlorophenol	100 U
1A)	120-83-2	2,4-dichlorophenol	100 U
4A)	105-67-9	2,4-dimethylphenol	100 U
7A)	88-75-5	2- nitrophenol	200 U
8A)	100-02-7	4-nitrophenol	1000 U
9A)	51-28-5	2,4-dinitrophenol	500 U
0A)	534-52-1	4,6-dinitro-2-methylphenol	200 U
4A)	87-86-5	pentachlorophenol	200 U
5A)	108-95-2	phenol	100 U

BASE/NEUTRAL COMPOUNDS

3)	83-32-9	acenaphthene	100 U
3)	92-87-5	benzidine	400 U
3)	120-82-1	1,2,4-trichlorobenzene	100 U
3)	118-74-1	hexachlorobenzene	100 U
B)	67-72-1	hexachloroethane	100 U
	111-44-4	bis(2-chloroethyl)ether	100 U
6)	91-58-7	2-chloronaphthalene	100 U
B)	95-50-1	1,2-dichlorobenzene	100 U
B)	541-73-1	1,3-dichlorobenzene	100 U
B)	106-46-7	1,4-dichlorobenzene	100 U
B)	91-94-1	3,3'-dichlorobenzidine	200 U
B)	121-14-2	2,4-dinitrotoluene	200 U
B)	606-20-2	2,6-dinitrotoluene	200 U
B)	122-66-7	1,2-diphenylhydrazine	200 U
B)	206-44-0	fluoranthene	100 U
B)	7005-72-3	4-chlorophenyl phenyl ether	100 U
B)	101-55-3	4-bromophenyl phenyl ether	100 U
B)	39638-32-9	bis (2-chloroisopropyl) ether	200 U
B)	111-91-1	bis (2-chloroethoxy) methane	200 U
3)	87-68-3	hexachlorobutadiene	100 U
B)	77-47-4	hexachlorocyclopentadiene	100 U
3)	78-59-1	isophorone	100 U
3)	91-20-3	naphthalene	K 100 ~~U~~
B)	98-95-3	nitrobenzene	100 U
3)	86-30-6	N-nitrosodiphenylamine	100 U
3)	621-64-7	N-nitrosodipropylamine	200 U
B)	117-81-7	bis (2-ethylhexyl) phthalate	20900 ~~100 U~~
3)	85-68-7	benzyl butyl phthalate	100 U
	84-74-2	di-n-butyl phthalate	K 100 ~~U~~
	117-84-0	di-n-octyl phthalate	576 ~~100 U~~
3)	84-66-2	diethyl phthalate	K 100 ~~U~~
3)	131-11-3	dimethyl phthalate	100 U
3)	56-55-3	benzo(a)anthracene	100 U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		ug/kg
(73B)	50-32-8	benzo(a)pyrene	200 U
(74B)	205-99-2	benzo(b)fluoranthene	200 U
(75B)	207-08-9	benzo(k)fluoranthene	200 U
(76B)	218-01-9	chrysene	100 U
(77B)	208-96-8	acenaphthylene	100 U
(78B)	120-12-7	anthracene	100 U
(79B)	191-24-2	benzo(ghi)perylene	200 U
(80B)	86-73-7	fluorene	100 U
(81B)	85-01-8	phenanthrene	100 U
(82B)	53-70-3	dibenzo(a,h)anthracene	200 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	200 U
(84B)	129-00-0	pyrene	100 U

VOLATILES

(2V)	107-02-8	acrolein	50 U
(3V)	107-13-1	acrylonitrile	50 U
(4V)	71-43-2	benzene	2.5 U
(6V)	56-23-5	carbon tetrachloride	2.5 U
(7V)	108-90-7	chlorobenzene	2.5 U
(10V)	107-06-2	1,2-dichloroethane	2.5 U
(11V)	71-55-6	1,1,1-trichloroethane	2.5 U
(13V)	75-34-3	1,1-dichloroethane	2.5 U
(14V)	79-00-5	1,1,2-trichloroethane	2.5 U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	2.5 U
(16V)	75-00-3	chloroethane	2.5 U
(19V)	110-75-8	2-chloroethylvinyl ether	2.5 U
(23V)	67-66-3	chloroform	2.5 U
(29V)	75-35-4	1,1-dichloroethene	2.5 U
(30V)	156-60-5	trans-1,2-dichloroethene	2.5 U
(32V)	78-87-5	1,2-dichloropropane	2.5 U
(33V)	10061-02-6	trans-1,3-dichloropropene	2.5 U
	10061-01-05	cis-1,3-dichloropropene	5 U
(38V)	100-41-4	ethylbenzene	2.5 U
(44V)	75-09-2	methylene chloride	17.3 ~~2.5 U~~
(45V)	74-87-3	chloromethane	2.5 U
(46V)	74-83-9	bromomethane	2.5 U
(47V)	75-25-2	bromoform	2.5 U
(48V)	75-27-4	bromodichloromethane	2.5 U
(49V)	75-69-4	fluorotrichloromethane	2.5 U
(50V)	75-71-8	dichlorodifluoromethane	—
(51V)	124-48-1	chlorodibromomethane	2.5 U
(85V)	127-18-4	tetrachloroethene	2.5 U
(86V)	108-88-3	toluene	2.5 U
(87V)	79-01-6	trichloroethene	2.5 U
(88V)	75-01-4	vinyl chloride	2.5 U

Richard Scott

000035

ORGANICS ANALYSIS DATA SHEET - Page 2

(Red) LOW LEVEL SOLID

Sample Number C 2858

Laboratory Name: SPECTRIX CORP. Case No: 1624

Sample I.D. No: 83-04-013 QC Report No: 8

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 1.5

PESTICIDES

PP #	CAS #		ug/kg
(89P)	309-00-2	aldrin	0.02 U
(90P)	60-57-1	dieldrin	0.02 U
(91P)	57-74-9	chlordane	0.2 U
(92P)	50-29-3	4,4'-DDT	** 1.83 ~~0.04 U~~ **
(93P)	72-55-9	4,4'-DDE	** 0.24 ~~0.02 U~~ **
(94P)	72-54-8	4,4'-DDD	** 0.42 ~~0.04 U~~ **
(95P)	115-29-7	α-endosulfan	0.02 U
(96P)	115-29-7	β-endosulfan	0.02 U
(97P)	1031-07-8	endosulfan sulfate	0.04 U
(98P)	72-20-8	endrin	0.02 U
(99	7421-93-4	endrin aldehyde	0.04 U
(10	76-44-8	heptachlor	0.02 U
(101P)	1024-57-3	heptachlor epoxide	** 0.07 ~~0.02 U~~ **
(102P)	319-84-6	α-BHC	** 0.36 ~~0.02 U~~ **

PESTICIDES

PP #	CAS #		ug/kg
(103P)	319-85-7	β-BHC	0.02 U
(104P)	319-86-8	δ-BHC	0.02 U
(105P)	58-89-9	γ-BHC (lindane)	** 0.14 ~~0.02 U~~ **
(106P)	53469-21-9	PCB-1242	0.2 U
(107P)	11097-69-1	PCB-1254	0.4 U
(108P)	11104-28-2	PCB-1221	0.4 U
(109P)	11141-16-5	PCB-1232	0.4 U
(110P)	12672-29-6	PCB-1248	0.4 U
(111P)	11096-82-5	PCB-1260	0.8 U
(112P)	12674-11-2	PCB-1016	0.2 U
(113P)	8001-35-2	toxaphene	0.2 U

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.1 U

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #		ug/kg
65-85-0	benzoic acid	1000 U
95-48-7	2-methylphenol	100 U
108-39-4	4-methylphenol	100 U
95-95-4	2,4,5-trichlorophenol	1000 U

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	100 U
100-51-6	benzyl alcohol	200 U
106-47-8	4-chloroaniline	500 U
132-64-9	dibenzofuran	K 1000 U
91-57-6	2-methylnaphthalene	K 2000 U
88-74-4	2-nitroaniline	1000 U
99-09-2	3-nitroaniline	1000 U
100-01-6	4-nitroaniline	1000 U

VOLATILES

CAS #		ug/kg
67-64-1	acetone	2.5 U
78-93-3	2-butanone	2.5 U
75-15-0	carbondisulfide	0.5 U
519-78-6	2-hexanone	2.5 U
108-10-1	4-methyl-2-pentanone	2.5 U
100-42-5	styrene	2.5 U
108-05-4	vinyl acetate	2.5 U
95-47-6	o-xylene	2.5 U

4/82

Richard Scott

DOCUMENT CONTROL # 1624-03 -8

CASE # 1624

ORGANICS ANALYSIS DATA SHEET - Page 3

ORIGINAL (Red)

Sample Number C2858

S FORM I ( )

ratory Name: SPECTRIX CORPORATION

Report No: 8

A. Surrogate Spike Results

Compound Name	Fraction	Concentration (ug/kg)	Surrogates Only: Spike Added (ug/kg)	Surrogates Only: Percent Recovery
2-fluorophenol	BNAP			
2-fluoroaniline	BNAP	348	1000	34.8
d_6(d_5)-phenol	BNAP			
pentafluorophenol	BNAP	134	1000	13.4
d_5-nitrobenzene	BNAP			
2-fluorobiphenyl	BNAP	1220	1000	122
2-fluorobiphenyl	BNAP			
d_6-benzene	VOA	116	100	116
d_8-toluene	VOA	90.9	100	90.9
1,2,3,4-TCDD	TCDD	0.26	1.2	21.7

Data Reporting Qualifiers

eporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. ition of such flags must be explicit however.

the result is a value greater than or equal to the detection limit, report the value.

- Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

- If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative result is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K - Actual value, within the limitations of this method, is less than the value given.

- This flag applies to analysis performed by Fused Silica Capillary Column.

J - Indicates an estimated value which is used when estimating a concentration for tentatively identified compounds; e.g., 1200J. The footnote should read: J - Estimated value.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described in a page attached to the data summary report.

** - This flag applies to pesticides parameters where the identification has been performed using two column confirmation (as specified in Method 608) but the level is too low for verification of the compound by mass spectrometry.

CX - This flag is used to indicate those compounds which were concentrated by a factor of 10 times.

Richard Scott

000037

ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

Sample I.D. No: 8304013

QC Report No: 7

Multiply Detection Limits by 1 [✓] or 10 [ ] (Check Box for Appropriate Factor)

5 [ ]

ACID COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6-trichlorophenol	12	U
(22A)	59-50-7	p-chloro-m-cresol	5.4	U
(24A)	95-57-8	2-chlorophenol	5.2	U
(31A)	120-83-2	2,4-dichlorophenol	8.8	U
(34A)	105-67-9	2,4-dimethylphenol	1.5	U
(57A)	88-75-5	2-nitrophenol	0.8	U
(58A)	100-02-7	4-nitrophenol	66	U
(59A)	51-28-5	2,4-dinitrophenol	54	U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	19	U
(64A)	87-86-5	pentachlorophenol	20	U
(65A)	108-95-2	phenol	9	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(1B)	83-32-9	acenaphthene	1.9	U
(5B)	92-87-5	benzidine	-0-	U
(8B)	120-82-1	1,2,4-trichlorobenzene	4.7	U
(9B)	118-74-1	hexachlorobenzene	11	U
(B)	67-72-1	hexachloroethane	1.3	U
(18B)	111-44-4	bis(2-chloroethyl)ether	5.1	U
(20B)	91-58-7	2-chloronaphthalene	1.5	U
(25B)	95-50-1	1,2-dichlorobenzene	7.9	U
(26B)	541-73-1	1,3-dichlorobenzene	8.5	U
(27B)	106-46-7	1,4-dichlorobenzene	6.1	U
(28B)	91-94-1	3,3'-dichlorobenzidine	18	U
(35B)	121-14-2	2,4-dinitrotoluene	11	U
(36B)	606-20-2	2,6-dinitrotoluene	4.7	U
(3	122-66-7	1,2-diphenylhydrazine	7.1	U
(3	206-44-0	fluoranthene	2.5	U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	6.6	U
(41B)	101-55-3	4-bromophenyl phenyl ether	8.0	U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	18	U
(43B)	111-91-1	bis (2-chloroethoxy) methane	1.4	U
(52B)	87-68-3	hexachlorobutadiene	18	U
(53B)	77-47-4	hexachlorocyclopentadiene	20	U
(54B)	78-59-1	isophorone	7.4	U
(55B)	91-20-3	naphthalene	2.8	U
(56B)	98-95-3	nitrobenzene	5.1	U
(62B)	86-30-6	N-nitrosodiphenylamine	-0-	U
(63B)	621-64-7	N-nitrosodipropylamine	13.3	U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	22	U
(7B)	85-68-7	benzyl butyl phthalate	24	U
(8B)	84-74-2	di-n-butyl phthalate	16	U
(69B)	117-84-0	di-n-octyl phthalate	22	U
(70B)	84-66-2	diethyl phthalate	8	U
(71B)	131-11-3	dimethyl phthalate	3.5	U
(72B)	56-55-3	benzo(a)anthracene	4.4	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(73B)	50-32-8	benzo(a)pyrene	1.0	U
(74B)	205-99-2	benzo(b)fluoranthene	7.2	U
(75B)	207-08-9	benzo(k)fluoranthene	7.2	U
(76B)	218-01-9	chrysene	5.1	U
(77B)	208-96-8	acenaphthylene	1.8	U
(78B)	120-12-7	anthracene	7.6	U
(79B)	191-24-2	benzo(ghi)perylene	12	U
(80B)	86-73-7	fluorene	4.2	U
(81B)	85-01-8	phenanthrene	7.5	U
(82B)	53-70-3	dibenzo(a,h)anthracene	7.8	U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	13	U
(84B)	129-00-0	pyrene	2.1	U

VOLATILES

(2V)	107-02-8	acrolein	250	U
(3V)	107-13-1	acrylonitrile	122	U
(4V)	71-43-2	benzene	2.7	U
(6V)	56-23-5	carbon tetrachloride	4.0	U
(7V)	108-90-7	chlorobenzene	4.8	U
(10V)	107-06-2	1,2-dichloroethane	2.0	U
(11V)	71-55-6	1,1,1-trichloroethane	3.4	U
(13V)	75-34-3	1,1-dichloroethane	3.6	U
(14V)	79-00-5	1,1,2-trichloroethane	3.9	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	4.4	U
(16V)	75-00-3	chloroethane	8.9	U
(19V)	110-75-8	2-chloroethylvinyl ether	18.6	U
(23V)	67-66-3	chloroform	3.6	U
(29V)	75-35-4	1,1-dichloroethene	3.4	U
(30V)	156-60-5	trans-1,2-dichloroethene	5.7	U
(32V)	78-87-5	1,2-dichloropropane	2.9	U
(33V)	10061-02-6	trans-1,3-dichloropropene	9.4	U
	10061-01-05	cis-1,3-dichloropropene	5.0	U
(38V)	100-41-4	ethylbenzene	4.9	U
(44V)	75-09-2	methylene chloride	0.7	UB
(45V)	74-87-3	chloromethane	35.3	U
(46V)	74-83-9	bromomethane	9.4	U
(47V)	75-25-2	bromoform	7.9	U
(48V)	75-27-4	bromodichloromethane	5.9	U
(51V)	124-48-1	chlorodibromomethane	7.2	U
(85V)	127-18-4	tetrachloroethene	10.0	U
(86V)	108-88-3	toluene	5.8	U
(87V)	79-01-6	trichloroethene	10.4	U
(88V)	75-01-4	vinyl chloride	32.2	U

Richard Scott

000110

6/87

ORGANICS ANALYSIS DATA SHEET - Page 2

S FORM I ( )

Sample Number C 2860

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

Lab Sample I.D. No:

QC Report No: 7

ORIGINAL (Red)

Multiply Detection Limits by 1 ☑ or 10 ☐ (Check Box for Appropriate Factor)
5 ☐

PESTICIDES

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(89P)	309-00-2	aldrin	0.001	U
(90P)	60-57-1	dieldrin	0.001	U
(91P)	57-74-9	chlordane	0.03	U
(92P)	50-29-3	4,4'-DDT	0.010	U
(93P)	72-55-9	4,4'-DDE	0.002	U
(94P)	72-54-8	4,4'-DDD	0.005	U
(95P)	115-29-7	α-endosulfan	0.004	U
(96P)	115-29-7	β-endosulfan	0.004	U
(97P)	1031-07-8	endosulfan sulfate	0.003	U
(98P)	72-20-8	endrin	0.001	U
(99P)	7421-93-4	endrin aldehyde	0.007	U
(1)	76-44-8	heptachlor	0.003	U
(101P)	1024-57-3	heptachlor epoxide	0.002	U
(102P)	319-84-6	α-BHC	0.002	U

PESTICIDES

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(103P)	319-85-7	β-BHC	0.003	U
(104P)	319-86-8	δ-BHC	0.001	U
(105P)	58-89-9	γ-BHC (lindane)	0.001	U
(106P)	53469-21-9	PCB-1242	0.03	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221	-1	U
(109P)	11141-16-5	PCB-1232	0.03	U
(110P)	12672-29-6	PCB-1248	0.02	U
(111P)	11096-82-5	PCB-1260	0.10	U
(112P)	12674-11-2	PCB-1016	0.01	U
(113P)	8001-35-2	toxaphene	0.01	U

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.005	U

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #			ug/l or ug/kg (circle one)
65-85-0	benzoic acid	-1	U
95-48-7	2-methylphenol	7.3	U
108-39-4	4-methylphenol	12.8	U
95-95-4	2,4,5-trichlorophenol	22	U

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	25	U
100-51-6	benzyl alcohol	13	U
106-47-8	4-chloroaniline	8.8	U
132-64-9	dibenzofuran	-1	U
91-57-6	2-methylnaphthalene	2.3	U
88-74-4	2-nitroaniline	4.1	U
99-09-2	3-nitroaniline	35	U
100-01-6	4-nitroaniline	-1	U

VOLATILES

CAS #			ug/l or ug/kg (circle one)
67-64-1	acetone	22.5	U
78-93-3	2-butanone	11.5	U
75-15-0	carbondisulfide	2.3	U
519-78-6	2-hexanone	12.1	U
108-10-1	4-methyl-2-pentanone	12.8	U
100-42-5	styrene	7.4	U
108-05-4	vinyl acetate	12.3	U
95-47-6	o-xylene	11.1	U

4/82

1 Instrumental detection limits not determined because good quality standards were not available.

Richard Scott P.M.

ORIGINAL
(Red)

DOCUMENT CONTROL # 1624-03 -8

CASE # 1624

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Number C2860

S FORM I ( )

oratory Name: SPECTRIX CORPORATION

Report No: 7

A. Surrogate Spike Results

Compound Name	Fraction	Concentration (ug/l)	Surrogates Only	
			Spike Added (ug/l)	Percent Recovery
2-fluorophenol	SV		50	
2-fluoroaniline	SV		50	
$d_{(4,5)}$-phenol	SV	6.1	50	12.2
pe...afluorophenol	SV		50	
d_5-nitrobenzene	SV	35.6	50	71.2
decafluorobiphenyl	SV		50	
2-fluorobiphenyl	SV	43.6	50	87.2
d_6-benzene	VOA	107	100	107
d_8-toluene	VOA	115	100	115
1,2,3,4-TCDD	Dioxin	0.021	0.060	35

Data Reporting Qualifiers

...g results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. ...ion of such flags must be explicit however.

- If the result is a value greater than or equal to the detection limit, report the value.

- Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

- If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative result is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K - ...actual value, either the limitations of this method, is ...less than the value given.

- This flag applies to analysis performed by Fused Silica Capillary Columns.

J - Indicates an estimated value which is used when estimating a concentration for tentatively identified compounds; e.g., 1200J. The footnote should read: J - Estimated value.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described in a page attached to the data summary report.

ee - This flag applies to pesticides parameters where the identification has been performed using two column confirmations (as specified in Method 608) but the level is too low for verification of the compound by mass spectrometry.

CX - This flag is used to indicate those compounds which were concentrated by a factor of 10 times.

Richard Scott P.M.

000112

ORGANICS ANALYSIS DATA SHEET

ORIGINAL

Laboratory Name: SPECTRIX CORP. Case No: 1624

Sample I.D. No: 83-04-013 QC Report No: 8

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 1.9

ACID COMPOUNDS

PP #	CAS #		ug/kg
(21A)	88-06-2	2,4,6-trichlorophenol	100 U
(22A)	59-50-7	p-chloro-m-cresol	100 U
(24A)	95-57-8	2-chlorophenol	100 U
(31A)	120-83-2	2,4-dichlorophenol	100 U
(34A)	105-67-9	2,4-dimethylphenol	100 U
(57A)	88-75-5	2-nitrophenol	200 U
(58A)	100-02-7	4-nitrophenol	1000 U
(59A)	51-28-5	2,4-dinitrophenol	500 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	200 U
(64A)	87-86-5	pentachlorophenol	200 U
(65A)	108-95-2	phenol	100 U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		ug/kg
(73B)	50-32-8	benzo(a)pyrene	200 U
(74B)	205-99-2	benzo(b)fluoranthene	200 U
(75B)	207-08-9	benzo(k)fluoranthene	200 U
(76B)	218-01-9	chrysene	109 ~~100 U~~
(77B)	208-96-8	acenaphthylene	100 U
(78B)	120-12-7	anthracene	100 U
(79B)	191-24-2	benzo(ghi)perylene	200 U
(80B)	86-73-7	fluorene	100 U
(81B)	85-01-8	phenanthrene	100 U
(82B)	53-70-3	dibenzo(a,h)anthracene	200 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	200 U
(84B)	129-00-0	pyrene	K 100 ~~U~~

BASE/NEUTRAL COMPOUNDS

1B	83-32-9	acenaphthene	100 U
5B)	92-87-5	benzidine	400 U
8B)	120-82-1	1,2,4-trichlorobenzene	100 U
9B)	118-74-1	hexachlorobenzene	100 U
12B)	67-72-1	hexachloroethane	100 U
8B)	111-44-4	bis(2-chloroethyl)ether	100 U
20B)	91-58-7	2-chloronaphthalene	100 U
25B)	95-50-1	1,2-dichlorobenzene	100 U
26B)	541-73-1	1,3-dichlorobenzene	100 U
27B)	106-46-7	1,4-dichlorobenzene	100 U
28B)	91-94-1	3,3'-dichlorobenzidine	200 U
35B)	121-14-2	2,4-dinitrotoluene	200 U
36B)	606-20-2	2,6-dinitrotoluene	200 U
37B)	122-66-7	1,2-diphenylhydrazine	200 U
39	206-44-0	fluoranthene	K 100 ~~U~~
40	7005-72-3	4-chlorophenyl phenyl ether	100 U
41B)	101-55-3	4-bromophenyl phenyl ether	100 U
42B)	39638-32-9	bis (2-chloroisopropyl) ether	200 U
43B)	111-91-1	bis (2-chloroethoxy) methane	200 U
52B)	87-68-3	hexachlorobutadiene	100 U
53B)	77-47-4	hexachlorocyclopentadiene	100 U
54B)	78-59-1	isophorone	100 U
55B)	91-20-3	naphthalene	295 ~~100 U~~
56B)	98-95-3	nitrobenzene	100 U
62B)	86-30-6	N-nitrosodiphenylamine	100 U
63B)	621-64-7	N-nitrosodipropylamine	200 U
66B)	117-81-7	bis (2-ethylhexyl) phthalate	100 U
67B)	85-68-7	benzyl butyl phthalate	100 U
69)	84-74-2	di-n-butyl phthalate	K 100 ~~U~~
70B)	117-84-0	di-n-octyl phthalate	100 U
70B)	84-66-2	diethyl phthalate	K 100 U
71B)	131-11-3	dimethyl phthalate	100 U
72B)	56-55-3	benzo(a)anthracene	100 U

VOLATILES

(2V)	107-02-8	acrolein	50 U
(3V)	107-13-1	acrylonitrile	50 U
(4V)	71-43-2	benzene	2.5 U
(6V)	56-23-5	carbon tetrachloride	2.5 U
(7V)	108-90-7	chlorobenzene	2.5 U
(10V)	107-06-2	1,2-dichloroethane	2.5 U
(11V)	71-55-6	1,1,1-trichloroethane	2.5 U
(13V)	75-34-3	1,1-dichloroethane	2.5 U
(14V)	79-00-5	1,1,2-trichloroethane	2.5 U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	2.5 U
(16V)	75-00-3	chloroethane	2.5 U
(19V)	110-75-8	2-chloroethylvinyl ether	2.5 U
(23V)	67-66-3	chloroform	2.5 U
(29V)	75-35-4	1,1-dichloroethene	2.5 U
(30V)	156-60-5	trans-1,2-dichloroethene	2.5 U
(32V)	78-87-5	1,2-dichloropropane	2.5 U
(33V)	10061-02-6	trans-1,3-dichloropropene	2.5 U
	10061-01-05	cis-1,3-dichloropropene	5 U
(38V)	100-41-4	ethylbenzene	2.5 U
(44V)	75-09-2	methylene chloride	8.1 ~~2.5 U~~
(45V)	74-87-3	chloromethane	2.5 U
(46V)	74-83-9	bromomethane	2.5 U
(47V)	75-25-2	bromoform	2.5 U
(48V)	75-27-4	bromodichloromethane	2.5 U
(49V)	75-69-4	fluorotrichloromethane	2.5 U
(50V)	75-71-8	dichlorodifluoromethane	—
(51V)	124-48-1	chlorodibromomethane	2.5 U
(85V)	127-18-4	tetrachloroethene	2.5 U
(86V)	108-88-3	toluene	2.5 U
(87V)	79-01-6	trichloroethene	2.5 U
(88V)	75-01-4	vinyl chloride	2.5 U

Richard Scott P.M. 4/87

000125

LLW

S FORM I

ORIGINAL (Red)

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

Lab Sample I.D. No: 8304013

QC Report No: 7

Multiply Detection Limits by 1 ☑ or 10 ☐ (Check Box for Appropriate Factor)

5 ☐

ACID COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	12	U
(22A)	59-50-7	p-chloro-m-cresol	5.4	U
(24A)	95-57-8	2- chlorophenol	5.2	U
(31A)	120-83-2	2,4-dichlorophenol	8.8	U
(34A)	105-67-9	2,4-dimethylphenol	1.5	U
(57A)	88-75-5	2- nitrophenol	0.8	U
(58A)	100-02-7	4-nitrophenol	66	U
(59A)	51-28-5	2,4-dinitrophenol	54	U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	19	U
(64A)	87-86-5	pentachlorophenol	20	U
(4)	108-95-2	phenol	9	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(1B)	83-32-9	acenaphthene	1.9	U
(5B)	92-87-5	benzidine	-0-	U
(8B)	120-82-1	1,2,4-trichlorobenzene	4.7	U
(9B)	118-74-1	hexachlorobenzene	11	U
(12B)	67-72-1	hexachloroethane	1.3	U
(18B)	111-44-4	bis(2-chloroethyl)ether	5.1	U
(20B)	91-58-7	2-chloronaphthalene	1.5	U
(25B)	95-50-1	1,2-dichlorobenzene	7.9	U
(26B)	541-73-1	1,3-dichlorobenzene	8.5	U
(27B)	106-46-7	1,4-dichlorobenzene	6.1	U
(28B)	91-94-1	3,3'-dichlorobenzidine	18	U
(35B)	121-14-2	2,4-dinitrotoluene	11	U
B)	606-20-2	2,6-dinitrotoluene	4.7	U
(37B)	122-66-7	1,2-diphenylhydrazine	7.1	U
(39B)	206-44-0	fluoranthene	2.5	U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	6.6	U
(41B)	101-55-3	4-bromophenyl phenyl ether	8.0	U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	18	U
(43B)	111-91-1	bis (2-chloroethoxy) methane	1.4	U
(52B)	87-68-3	hexachlorobutadiene	18	U
(53B)	77-47-4	hexachlorocyclopentadiene	20	U
(54B)	78-59-1	isophorone	7.4	U
(55B)	91-20-3	naphthalene	2.8	U
(56B)	98-95-3	nitrobenzene	5.1	U
(62B)	86-30-6	N-nitrosodiphenylamine	-0-	U
(63B)	621-64-7	N-nitrosodipropylamine	13.3	U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	22	U
(67B)	85-68-7	benzyl butyl phthalate	24	U
(68B)	84-74-2	di-n-butyl phthalate	16	U
(69B)	117-84-0	di-n-octyl phthalate	22	U
(70B)	84-66-2	diethyl phthalate	8	U
(71B)	131-11-3	dimethyl phthalate	3.5	U
(72B)	56-55-3	benzo(a)anthracene	4.4	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(73B)	50-32-8	benzo(a)pyrene	1.0	U
(74B)	205-99-2	benzo(b)fluoranthene	7.2	U
(75B)	207-08-9	benzo(k)fluoranthene	7.2	U
(76B)	218-01-9	chrysene	5.1	U
(77B)	208-96-8	acenaphthylene	1.8	U
(78B)	120-12-7	anthracene	7.6	U
(79B)	191-24-2	benzo(ghi)perylene	12	U
(80B)	86-73-7	fluorene	4.2	U
(81B)	85-01-8	phenanthrene	7.5	U
(82B)	53-70-3	dibenzo(a,h)anthracene	7.8	U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	13	U
(84B)	129-00-0	pyrene	2.1	U

VOLATILES

(2V)	107-02-8	acrolein	250	U
(3V)	107-13-1	acrylonitrile	122	U
(4V)	71-43-2	benzene	2.7	U
(6V)	56-23-5	carbon tetrachloride	4.0	U
(7V)	108-90-7	chlorobenzene	4.8	U
(10V)	107-06-2	1,2-dichloroethane	2.0	U
(11V)	71-55-6	1,1,1-trichloroethane	3.4	U
(13V)	75-34-3	1,1-dichloroethane	3.6	U
(14V)	79-00-5	1,1,2-trichloroethane	3.9	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	4.4	U
(16V)	75-00-3	chloroethane	8.9	U
(19V)	110-75-8	2-chloroethylvinyl ether	18.6	U
(23V)	67-66-3	chloroform	3.6	U
(29V)	75-35-4	1,1-dichloroethene	3.4	U
(30V)	156-60-5	trans-1,2-dichloroethene	5.7	U
(32V)	78-87-5	1,2-dichloropropane	2.9	U
(33V)	10061-02-6	trans-1,3-dichloropropene	9.4	U
	10061-01-05	cis-1,3-dichloropropene	5.0	U
(38V)	100-41-4	ethylbenzene	4.9	U
(44V)	75-09-2	methylene chloride	0.7	U B
(45V)	74-87-3	chloromethane	35.3	U
(46V)	74-83-9	bromomethane	9.4	U
(47V)	75-25-2	bromoform	7.9	U
(48V)	75-27-4	bromodichloromethane	5.9	U
(51V)	124-48-1	chlorodibromomethane	7.2	U
(85V)	127-18-4	tetrachloroethene	10.0	U
(86V)	108-88-3	toluene	5.8	U
(87V)	79-01-6	trichloroethene	10.4	U
(88V)	75-01-4	vinyl chloride	32.2	U

Richard Scott PM

000175

DOCUMENT CONTROL # 1624-03 -8

CASE # 1624

ORGANICS ANALYSIS DATA SHEET - Page 3

S FORM I ( )

Sample Number C2862

boratory Name: SPECTRIX CORPORATION

Report No: 7

A. Surrogate Spike Results

Compound Name	Fraction	Concentration (ug/l)	Surrogates Only	
			Spike Added (ug/l)	Percent Recover
fluorophenol	SV	0	50	0
2-fluoroaniline	SV		50	
$d_6(d_5)$-phenol	SV	0	50	0
pentafluorophenol	SV		50	
d_5-nitrobenzene	SV	32.6	50	65.2
decafluorobiphenyl	SV		50	
2-fluorobiphenyl	SV	28.9	50	57.8
d_6-benzene	VOA	108	100	108
d_8-toluene	VOA	111	100	111
1,2,3,4-TCDD	Dioxin	0.033	0.060	55.0

Data Reporting Qualifiers

eporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encourage ition of such flags must be explicit however.

- If the result is a value greater than or equal to the detection limit, report the value.

- Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

- If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative result is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K - Actual value, within the limitations of this method, is less than the value given.

- This flag applies to analysis performed by Fused Silica Capillary Columns.

J - Indicates an estimated value which is used when estimatin a concentration for tentatively identified compounds; e.g. 1200J. The footnote should read: J - Estimated value.

Other - Other specific flags and footnotes may be required t properly define the results. If used, they must be full described in a page attached to the data summary report.

** - This flag applies to pesticides parameters where the identi fication has been performed using two column confirmatio (as specified in Method 608) but the level is too low fo verification of the compound by mass spectrometry.

CX - This flag is used to indicate those compounds which wer concentrated by a factor of 10 times.

Richard Scott P.M.

000177

P.O. Box 818, Alexandria, Virginia 22313 - 703/557-2490

LOW LEVEL SOLID

ORIGINAL (Red)

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SPECTRIX CORP. Case No: 1624

Lab Sample I.D. No: 83-04-013 QC Report No: 8

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 1.4

ACID COMPOUNDS

PP #	CAS #		ug/kg
(21A)	88-06-2	2,4,6- trichlorophenol	100 U
(22A)	59-50-7	p-chloro-m-cresol	100 U
(24A)	95-57-8	2- chlorophenol	100 U
(31A)	120-83-2	2,4-dichlorophenol	100 U
(34A)	105-67-9	2,4-dimethylphenol	100 U
(57A)	88-75-5	2- nitrophenol	200 U
(58A)	100-02-7	4-nitrophenol	1000 U
(59A)	51-28-5	2,4-dinitrophenol	500 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	200 U
(64A)	87-86-5	pentachlorophenol	200 U
(65A)	108-95-2	phenol	100 U

BASE/NEUTRAL COMPOUNDS

(1B)	83-32-9	acenaphthene	100 U
(5B)	92-87-5	benzidine	400 U
(8B)	120-82-1	1,2,4-trichlorobenzene	100 U
(9B)	118-74-1	hexachlorobenzene	100 U
(12B)	67-72-1	hexachloroethane	100 U
(18B)	111-44-4	bis(2-chloroethyl)ether	100 U
(20B)	91-58-7	2-chloronaphthalene	100 U
(25B)	95-50-1	1,2-dichlorobenzene	100 U
(26B)	541-73-1	1,3-dichlorobenzene	100 U
(27B)	106-46-7	1,4-dichlorobenzene	100 U
(28B)	91-94-1	3,3'-dichlorobenzidine	200 U
(35B)	121-14-2	2,4-dinitrotoluene	200 U
(36B)	606-20-2	2,6-dinitrotoluene	200 U
( )	122-66-7	1,2-diphenylhydrazine	200 U
(39B)	206-44-0	fluoranthene	100 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	100 U
(41B)	101-55-3	4-bromophenyl phenyl ether	100 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	200 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	200 U
(52B)	87-68-3	hexachlorobutadiene	100 U
(53B)	77-47-4	hexachlorocyclopentadiene	100 U
(54B)	78-59-1	isophorone	100 U
(55B)	91-20-3	naphthalene	100 U
(56B)	98-95-3	nitrobenzene	100 U
(62B)	86-30-6	N-nitrosodiphenylamine	100 U
(63B)	621-64-7	N-nitrosodipropylamine	200 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	100 U
(67B)	85-68-7	benzyl butyl phthalate	100 U
(68B)	84-74-2	di-n-butyl phthalate	100 U
(69B)	117-84-0	di-n-octyl phthalate	100 U
(70B)	84-66-2	diethyl phthalate	K 100 U
(71B)	131-11-3	dimethyl phthalate	100 U
(72B)	56-55-3	benzo(a)anthracene	100 U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		ug/kg
(73B)	50-32-8	benzo(a)pyrene	200 U
(74B)	205-99-2	benzo(b)fluoranthene	200 U
(75B)	207-08-9	benzo(k)fluoranthene	200 U
(76B)	218-01-9	chrysene	100 U
(77B)	208-96-8	acenaphthylene	100 U
(78B)	120-12-7	anthracene	100 U
(79B)	191-24-2	benzo(ghi)perylene	200 U
(80B)	86-73-7	fluorene	100 U
(81B)	85-01-8	phenanthrene	100 U
(82B)	53-70-3	dibenzo(a,h)anthracene	200 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	200 U
(84B)	129-00-0	pyrene	100 U

VOLATILES

(2V)	107-02-8	acrolein	50 U
(3V)	107-13-1	acrylonitrile	50 U
(4V)	71-43-2	benzene	2.5 U
(6V)	56-23-5	carbon tetrachloride	2.5 U
(7V)	108-90-7	chlorobenzene	2.5 U
(10V)	107-06-2	1,2-dichloroethane	2.5 U
(11V)	71-55-6	1,1,1-trichloroethane	2.5 U
(13V)	75-34-3	1,1-dichloroethane	2.5 U
(14V)	79-00-5	1,1,2-trichloroethane	2.5 U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	2.5 U
(16V)	75-00-3	chloroethane	2.5 U
(19V)	110-75-8	2-chloroethylvinyl ether	2.5 U
(23V)	67-66-3	chloroform	2.5 U
(29V)	75-35-4	1,1-dichloroethene	2.5 U
(30V)	156-60-5	trans-1,2-dichloroethene	2.5 U
(32V)	78-87-5	1,2-dichloropropane	2.5 U
(33V)	10061-02-6	trans-1,3-dichloropropene	2.5 U
	10061-01-05	cis-1,3-dichloropropene	5 U
(38V)	100-41-4	ethylbenzene	2.5 U
(44V)	75-09-2	methylene chloride 17.3	~~2.5 U~~
(45V)	74-87-3	chloromethane	2.5 U
(46V)	74-83-9	bromomethane	2.5 U
(47V)	75-25-2	bromoform	2.5 U
(48V)	75-27-4	bromodichloromethane	2.5 U
(49V)	75-69-4	fluorotrichloromethane	2.5 U
(50V)	75-71-8	dichlorodifluoromethane	—
(51V)	124-48-1	chlorodibromomethane	2.5 U
(85V)	127-18-4	tetrachloroethene	2.5 U
(86V)	108-88-3	toluene	2.5 U
(87V)	79-01-6	trichloroethene	2.5 U
(88V)	75-01-4	vinyl chloride	2.5 U

Richard Scott P.M. 4/87

000190

ORIGINAL (Red)

Sample Number C2863

LOW LEVEL SOLID

ORGANICS ANALYSIS DATA SHEET - Page 2

Laboratory Name: SPECTRIX CORP.

Case No: 1624

Lab Sample I.D. No: 83-04-013

QC Report No: 8

MULTIPLY ALL VALUES AND DETECTION LIMITS BY 1.4

PESTICIDES

PP #	CAS #		ug/kg
(89P)	309-00-2	aldrin	* * 0.21 ~~0.02 U~~
(90P)	60-57-1	dieldrin	* * 1.14 0.02 U
(91P)	57-74-9	chlordane	0.2 U
(92P)	50-29-3	4,4'-DDT	0.04 U
(93P)	72-55-9	4,4'-DDE	0.02 U
(94P)	72-54-8	4,4'-DDD	0.04 U
(95P)	115-29-7	α-endosulfan	0.02 U
(96P)	115-29-7	β-endosulfan	0.02 U
(97P)	1031-07-8	endosulfan sulfate	0.04 U
)	72-20-8	endrin	0.02 U
(99P)	7421-93-4	endrin aldehyde	0.04 U
(100P)	76-44-8	heptachlor	0.02 U
(101P)	1024-57-3	heptachlor epoxide	0.02 U
(102P)	319-84-6	α-BHC	* * 0.34 ~~0.02 U~~

PESTICIDES

PP #	CAS #		ug/kg
(103P)	319-85-7	β-BHC	* * 1.51 ~~0.02 U~~
(104P)	319-86-8	δ-BHC	0.02 U
(105P)	58-89-9	γ-BHC (lindane)	* * 0.20 ~~0.02 U~~
(106P)	53469-21-9	PCB-1242	0.2 U
(107P)	11097-69-1	PCB-1254	0.4 U
(108P)	11104-28-2	PCB-1221	0.4 U
(109P)	11141-16-5	PCB-1232	0.4 U
(110P)	12672-29-6	PCB-1248	0.4 U
(111P)	11096-82-5	PCB-1260	0.8 U
(112P)	12674-11-2	PCB-1016	0.2 U
(113P)	8001-35-2	toxaphene	0.2 U

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.1 U

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #		ug/kg
65-85-0	benzoic acid	1000 U
95-48-7	2-methylphenol	100 U
108-39-4	4-methylphenol	100 U
95-95-4	2,4,5-trichlorophenol	1000 U

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	100 U
100-51-6	benzyl alcohol	200 U
106-47-8	4-chloroaniline	500 U
132-64-9	dibenzofuran	K 100 U
91-57-6	2-methylnaphthalene	K 200
88-74-4	2-nitroaniline	1000 U
99-09-2	3-nitroaniline	1000 U
100-01-6	4-nitroaniline	1000 U

VOLATILES

CAS #		ug/kg
67-64-1	acetone	2.5 U
78-93-3	2-butanone	2.5 U
75-15-0	carbondisulfide	0.5 U
519-78-6	2-hexanone	2.5 U
108-10-1	4-methyl-2-pentanone	2.5 U
100-42-5	styrene	2.5 U
108-05-4	vinyl acetate	2.5 U
95-47-6	o-xylene	2.5 U

Richard Scott P.M. 4/2

ORIGINAL (Red)

DOCUMENT CONTROL # 1624-03 -8

CASE # 1624

Sample Number C2863

ORGANICS ANALYSIS DATA SHEET - Page 3

S FORM I ( )

ory Name: SPECTRIX CORPORATION

ort No: FX X 8

A. Surrogate Spike Results

Compound Name	Fraction	Concentration (ug/kg)	Surrogates Only: Spike Added (ug/kg)	Surrogates Only: Percent Recovery
luorophenol	BNAP			
luoroaniline	BNAP	337	1000	33.7
dr -phenol	BNAP			
it uoroghenol	BNAP	0	1000	0
-nitrobenzene	BNAP			
af luorobiphenyl	BNAP	1390	1000	139
luorobiphenyl	BNAP			
-benzene	VOA	112	100	112
oluene	VOA	99.8	100	99.8
3,4-TCDD	TCDD	0.52	1.2	43.3

Data Reporting Qualifiers

or results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. such flags must be explicit however.

If the result is a value greater than or equal to the detection limit, report the value.

Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative result is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K - Actual value, within the limitations of this method, is less than the value given.

J - Indicates an estimated value which is used when estimating a concentration for tentatively identified compounds; e.g., 1200J. The footnote should read: J - Estimated value.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described in a page attached to the data summary report.

ee - This flag applies to pesticides parameters where the identification has been performed using two column confirmation (as specified in Method 608) but the level is too low for verification of the compound by mass spectrometry.

CX - This flag is used to indicate those compounds which were concentrated by a factor of 10 times.

This flag applies to analysis performed by Fused Silica Capillary Column.

Richard Scott P.M.

000192

Laboratory Name: SPECTRIX CORPORATION

Case No: 1634

Lab Sample I.D. No: 830 4013

QC Report No: 7

ORIGINAL (PAGE)

Multiply Detection Limits by 1 ☑ or 10 ☐ (Check Box for Appropriate Factor)

5 ☐

ACID COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	12	U
(22A)	59-50-7	p-chloro-m-cresol	5.4	U
(24A)	95-57-8	2- chlorophenol	5.2	U
(31A)	120-83-2	2,4-dichlorophenol	8.8	U
(34A)	105-67-9	2,4-dimethylphenol	1.5	U
(57A)	88-75-5	2- nitrophenol	0.8	U
(58A)	100-02-7	4-nitrophenol	66	U
(59A)	51-28-5	2,4-dinitrophenol	54	U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	19	U
(64A)	87-86-5	pentachlorophenol	20	U
(65A)	108-95-2	phenol	9	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(1B)	83-32-9	acenaphthene	1.9	U
(5	92-87-5	benzidine	-0-	U
(8B)	120-82-1	1,2,4-trichlorobenzene	4.7	U
(9B)	118-74-1	hexachlorobenzene	11	U
(12B)	67-72-1	hexachloroethane	1.3	U
(18B)	111-44-4	bis(2-chloroethyl)ether	5.1	U
(20B)	91-58-7	2-chloronaphthalene	1.5	U
(25B)	95-50-1	1,2-dichlorobenzene	7.9	U
(26B)	541-73-1	1,3-dichlorobenzene	8.5	U
(27B)	106-46-7	1,4-dichlorobenzene	6.1	U
(28B)	91-94-1	3,3'-dichlorobenzidine	18	U
(35B)	121-14-2	2,4-dinitrotoluene	11	U
(36B)	606-20-2	2,6-dinitrotoluene	4.7	U
(37B)	122-66-7	1,2-diphenylhydrazine	7.1	U
(39B)	206-44-0	fluoranthene	2.5	U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	6.6	U
(	101-55-3	4-bromophenyl phenyl ether	8.0	U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	18	U
(43B)	111-91-1	bis (2-chloroethoxy) methane	1.4	U
(52B)	87-68-3	hexachlorobutadiene	18	U
(53B)	77-47-4	hexachlorocyclopentadiene	20	U
(54B)	78-59-1	isophorone	7.4	U
(55B)	91-20-3	naphthalene	2.8	U
(56B)	98-95-3	nitrobenzene	5.1	U
(62B)	86-30-6	N-nitrosodiphenylamine	-0-	U
(63B)	621-64-7	N-nitrosodipropylamine	13.3	U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	22	U
(67B)	85-68-7	benzyl butyl phthalate	24	U
(68B)	84-74-2	di-n-butyl phthalate	16	U
(69B)	117-84-0	di-n-octyl phthalate	22	U
(B)	84-66-2	diethyl phthalate	8	U
(71B)	131-11-3	dimethyl phthalate	3.5	U
	56-55-3	benzo a anthracene	4.4	U

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(73B)	50-32-8	benzo(a)pyrene	1.0	
(74B)	205-99-2	benzo(b)fluoranthene	7.2	
(75B)	207-08-9	benzo(k)fluoranthene	7.2	
(76B)	218-01-9	chrysene	5.1	
(77B)	208-96-8	acenaphthylene	1.8	
(78B)	120-12-7	anthracene	7.6	
(79B)	191-24-2	benzo(ghi)perylene	12	
(80B)	86-73-7	fluorene	4.2	
(81B)	85-01-8	phenanthrene	7.5	
(82B)	53-70-3	dibenzo(a,h)anthracene	7.8	
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	13	
(84B)	129-00-0	pyrene	2.1	

VOLATILES

(2V)	107-02-8	acrolein	250	U
(3V)	107-13-1	acrylonitrile	122	U
(4V)	71-43-2	benzene	2.7	U
(6V)	56-23-5	carbon tetrachloride	4.0	U
(7V)	108-90-7	chlorobenzene	4.8	U
(10V)	107-06-2	1,2-dichloroethane	2.0	U
(11V)	71-55-6	1,1,1-trichloroethane	3.4	U
(13V)	75-34-3	1,1-dichloroethane	3.6	U
(14V)	79-00-5	1,1,2-trichloroethane	3.9	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	4.4	U
(16V)	75-00-3	chloroethane	8.9	U
(19V)	110-75-8	2-chloroethylvinyl ether	18.6	U
(23V)	67-66-3	chloroform	3.6	U
(29V)	75-35-4	1,1-dichloroethene	3.4	U
(30V)	156-60-5	trans-1,2-dichloroethene	5.7	U
(32V)	78-87-5	1,2-dichloropropane	2.9	U
(33V)	10061-02-6	trans-1,3-dichloropropene	9.4	U
	10061-01-05	cis-1,3-dichloropropene	5.0	U
(38V)	100-41-4	ethylbenzene	4.9	U
(44V)	75-09-2	methylene chloride	0.7	U B
(45V)	74-87-3	chloromethane	35.3	U
(46V)	74-83-9	bromomethane	9.4	U
(47V)	75-25-2	bromoform	7.9	U
(48V)	75-27-4	bromodichloromethane	5.9	U
(51V)	124-48-1	chlorodibromomethane	7.2	U
(85V)	127-18-4	tetrachloroethene	10.0	U
(86V)	108-88-3	toluene	5.8	U
(87V)	79-01-6	trichloroethene	10.4	U
(88V)	75-01-4	vinyl chloride	32.2	U

Richard Scott P.M.

LLW

DOCUMENT CONTROL # 1624-C3-0

ORGANICS ANALYSIS DATA SHEET - Page 2

ORIGINAL (Red)

Sample Number C2864

S FORM I ( )

Laboratory Name: SPECTRIX CORPORATION

Case No: 1624

Lab Sample I.D. No: 8304013

QC Report No: 7

Multiply Detection Limits by 1 [✓] or 10 [ ] (Check Box for Appropriate Factor)

5 [ ]

PESTICIDES

PP #	CAS #		(DL)	ug/l or ug/kg (circle one)
(89P)	309-00-2	aldrin	0.001	U
(90P)	60-57-1	dieldrin	0.001	U
(91P)	57-74-9	chlordane	0.03	U
(92P)	50-29-3	4,4'-DDT	0.010	U
(93P)	72-55-9	4,4'-DDE	0.002	U
(94P)	72-54-8	4,4'-DDD	0.005	U
(95P)	115-29-7	α-endosulfan	0.004	U
(96P)	115-29-7	β-endosulfan	0.004	U
(97P)	1031-07-8	endosulfan sulfate	0.003	U
P)	72-20-8	endrin	0.001	U
(99P)	7421-93-4	endrin aldehyde	0.007	U
(100P)	76-44-8	heptachlor	0.003	U
(101P)	1024-57-3	heptachlor epoxide	0.002	U
(102P)	319-84-6	α-BHC	0.002	U

PESTICIDES

PP #	CAS #		(DL)	ug/l or ug/kg (circle or
(103P)	319-85-7	β-BHC	0.003	U
(104P)	319-86-8	δ-BHC	0.001	U
(105P)	58-89-9	γ-BHC (lindane)	0.001	U
(106P)	53469-21-9	PCB-1242	0.03	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221	-①	U
(109P)	11141-16-5	PCB-1232	0.03	U
(110P)	12672-29-6	PCB-1248	0.02	U
(111P)	11096-82-5	PCB-1260	0.10	U
(112P)	12674-11-2	PCB-1016	0.01	U
(113P)	8001-35-2	toxaphene	0.01	U

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.005	U

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #			ug/l or ug/kg (circle one)
65-85-0	benzoic acid	-①	U
95-48-7	2-methylphenol	7.3	U
108-39-4	4-methylphenol	12.8	U
95-95-4	2,4,5-trichlorophenol	22	U

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	25	U
100-51-6	benzyl alcohol	13	U
106-47-8	4-chloroaniline	8.8	U
132-64-9	dibenzofuran	-①	U
91-57-6	2-methylnaphthalene	2.3	U
88-74-4	2-nitroaniline	4.1	U
99-09-2	3-nitroaniline	35	U
100-01-6	4-nitroaniline	-①	U

VOLATILES

CAS #			ug/l or ug/kg (circle on
67-64-1	acetone	22.5	U
78-93-3	2-butanone	11.5	U
75-15-0	carbondisulfide	2.3	U
519-78-6	2-hexanone	12.1	U
108-10-1	4-methyl-2-pentanone	12.8	U
100-42-5	styrene	7.4	U
108-05-4	vinyl acetate	12.3	U
95-47-6	o-xylene	11.1	U

①Instrumental detection limits not determined because good quality standards were not available.

Richard Scott T.M.