114619

NUS CORPORATION
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

C-34-10-3-352

October 25, 1983

ORIGINAL
(red)

Project No. 0749.14

Mr. Ed Shoener
U.S. Environmental Protection Agency
6th & Walnut Streets
Philadelphia, PA 19106

Subject: Transmittal of Analytical Results,
Lackawana Refuse Site

Dear Ed:

Enclosed are tables summarizing analytical data which we have received from recent sampling at the Lackawanna Refuse Site. Included are metals analyses for water samples and metals analyses for soil and sediment samples. As additional data are received, they will be tabulated and forwarded for your review.

If you have any questions concerning these data please do not hesitate to call me.

Sincerely,

Richard M. Ninesteel

Richard M. Ninesteel, P.E.
Senior Engineer

RMN/dmr
Enclosure

cc: D. Brenneman
K. Turnbull

AR100284

0749.13 & 0749.14

SUMMARY
METALS ANALYSES - WATER (ppb)

	Sluice Pipe MR0956 9/83	Base of Spoil Pile MR0957 9/83	Stanik Well (A) MR0958 9/83	Stanik Well (B) MR0959 9/83	Smicherko Well MR0961 9/83	Swanek Well MR0962 9/83	Old Forge Outfall (A) MR0963 9/83	Old Forge Outfall (B) MR0964 9/83
Aluminum	1,000	1,600	1,800	2,000	400	< 200	< 200	< 200
Antimony	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Arsenic	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Barium	200	500	200	200	< 100	< 100	< 100	< 100
Beryllium	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Boron	4,600	1,500	< 100	< 100	< 100	< 100	< 100	< 100
Cadmium	< 1	< 1	2	3	< 1	4	< 1	< 1
Chromium	30	20	< 10	< 10	< 10	< 10	< 10	< 10
Cobalt	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Copper	< 50	< 50	< 50	< 50	< 50	< 60	< 50	< 50
Iron	31,800	24,800	< 50	100	500	< 50	31,600	31,900
Lead	170	5	< 5	< 5	5	25	< 5	< 5
Manganese	435	1,980	1,810	1,900	195	2,300	4,640	4,740
Mercury	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Nickel	120	40	< 40	< 40	< 40	< 40	80	80
Selenium	4	4	< 2	< 2	< 2	< 2	< 2	< 2
Silver	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Thallium	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Vanadium	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200
Zinc	440	240	490	490	210	1,150	70	70

ORIGINAL (red)

0749.14 SUMMARY OF METALS ANALYSES - SOIL AND SEDIMENT (ppm) 9/83 1/4

ORIGINAL (red)

APR 10 2002

	LA-SO-01 Seep-100 ft from Sluice Pipe	LA-SO-02 Seep-above Sluice Pipe	LA-SO-03 Seep-below Pit #2	LA-SO-04 Seep-between Pit #2 and Pit #5	LA-SO-05 Sediment - Villa Corporation	LA-SO-06 Soil - Access Road #1	LA-SO-07 Soil - Access Road #2	LA-SO-08 Soil - Access Road #3	LA-SO-09 Soil - Access Road #4
Aluminum	2,900	3,900	3,520	2,490	2,800	3,210	3,230	2,880	3,[illegible]
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	3.5	4.0	4.0	3.0	3.5	5.0	6.0	4.5	5.0
Barium	<50	<50	35	10	55	55	50	50	50
Beryllium	<2.5	<2.5	<0.25	<0.25	<0.25	0.5	0.5	0.5	0.5
Boron	100	<50	10	5.0	15	<5	<5	<5	<5
Cadmium	1.2	0.35	0.1	0.25	0.2	0.1	0.1	0.1	0.1
Chromium	10	20	5.5	7.5	7.0	5.5	5.0	4.5	4.0
Cobalt	<25	<25	5.0	2.5	7.5	5.0	5.0	2.5	2.5
Copper	<25	<25	5.0	5.0	5.0	30	32.5	30	25
Iron	141,000	43,200	13,400	7,800	23,400	11,600	11,800	10,600	8,950
Lead	18	25	7.5	6.0	18	40	35	25	25
Manganese	3,070	847	459	262	1,110	181	126	105	122
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Nickel	<20	<20	8.0	6.0	8.0	8.0	8.0	8.0	8.0
Selenium	0.3	0.2	0.1	0.1	0.3	2.0	2.2	2.0	2.4
Silver	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tin	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	<100	<100	<10	<10	<10	<10	<10	<10	<10
Zinc	750	200	40.5	113	64	48.5	35.5	41.5	38

0749.14 SUMMARY OF METALS ANALYSES - SOIL AND SEDIMENT (ppm) 9/83 2/4

ORIGINAL
(red)

AR100288

	LA-SO-10 Soil- Access Road #5	LA-SO-11 Soil- Access Road #6	LA-SO-12 Soil- Access Road #7	LA-SO-13 Soil- Access Rd. #8	LA-SO-14 Soil- Access Rd. #9	LA-SO-15 Soil- Access Rd #10	LA-SO-16 Soil- Access Rd. #11	LA-SO-17 Soil- Access Rd #12	LA-SO-18 Soil- Access Rd. #13
Aluminum	3,030	3,140	4,220	3,440	4,680	3,740	1,910	3,800	5,200
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<
Arsenic	6.0	7.0	5.0	5.0	6.0	4.5	4.0	14	4.5
Barium	55	45	50	40	45	45	35	150	95
Beryllium	0.5	0.5	<0.5	0.5	0.5	0.5	<0.25	<2.5	0.5
Boron	<5	<5	<10	<10	<5	<5	<5	<50	<5
Cadmium	0.05	0.1	0.15	0.05	0.1	0.05	0.1	1.2	0.2
Chromium	4.5	4.0	6.0	5.0	5.5	4.0	2.5	55	5.0
Cobalt	2.5	2.5	5.0	5.0	5.0	2.5	<2.5	<25	2.5
Copper	32.5	27.5	20	15	17.5	20	7.5	25	10
Iron	111,700	9,750	12,000	10,500	10,400	8,050	>5,000	100,000	6,100
Lead	30	25	23	70	30	15	20	30	25
Manganese	152	133	348	211	263	174	135	13,100	250
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Nickel	8.0	8.0	12	8.0	8.0	6.0	4.0	<20	6.0
Selenium	2.3	1.8	1.3	1.6	1.6	1.1	1.1	1.7	1.9
Silver	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<5	<0.5
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tin	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	<10	<10	<20	<20	<10	<10	<10	<100	<10
Zinc	34	36.5	45	26	30	20.5	17.5	435	21.5

0749.14 SUMMARY OF METALS ANALYSES - SOIL AND SEDIMENT (ppm) 9/83

3/4

ORIGINAL

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ARIOOO

	LA-SO-19 Soil- Access Rd. #14	LA-SO-20 Seep- 100ft. from Sluice Pipe	LA-SO-22 Sediment- Drainage to Ditch	LA-SO-23 Sediment- Stream Above Drainage Ditch	LA-SO-24 Sediment- Stream Below Drainage Ditch	LA-SO-25 Soil- Borehole Pit #1	LA-SO-26 Soil- Borehole Pit #2	LA-SO-27 Sediment- Pit #5 Seep	LA-SO-28 Sediment- Pit #1
Aluminum	2,030	2,400	3,700	2,660	2,060	2,230	3,340	5,400	3,270
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	3.5	3.5	14	3.0	3.0	3.0	4.0	4.5	3.5
Barium	75	50	150	15	10	20	105	25	15
Beryllium	<0.25	<2.5	<2.5	0.25	0.25	0.25	<2.5	0.25	<0.25
Boron	<5	100	<50	<5	<5	<5	<5	<5	<5
Cadmium	<0.05	1.0	1.2	<0.05	<0.05	0.05	1.2	0.1	<0.05
Chromium	3.0	10	55	4.0	3.5	7.5	96	7.5	4.5
Cobalt	<2.5	<25	<25	5.0	2.5	2.5	10	5.0	5.0
Copper	7.5	<25	<25	5.0	5.0	15	1,650	17.5	7.5
Iron	3,980	125,000	101,000	7,600	6,540	6,580	9,500	15,400	8,820
Lead	13	17	25	3.5	3.0	9.0	40	6.0	3.5
Manganese	97.5	2,330	13,000	299	326	201	314	274	264
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	4.0	<20	<20	8.0	4.0	6.0	324	12	8.0
Selenium	0.8	0.3	1.6	0.1	0.1	0.7	0.6	0.2	0.2
Silver	<0.5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tin	<1	<1	<1	<1	<1	<1	53	<1	<1
Vanadium	<10	<100	<100	<10	<10	<10	20	<10	<10
Zinc	10.5	615	410	16	13	18.5	640	40.5	17.5

0749: SUMMARY OF METALS ANALYSES- SOIL AI SEDIMENT (ppm) 9/83 4/4

ORIGINAL (red)

AR100289

	LA-SO-29 Sediment - Base of Spoil Pile	LA-SO-30 Sediment - Stream before St. Johns Creek	LA-SO-31 Sediment - St. Johns Creek above Stream	LA-SO-32 Sediment - St. Johns Creek below Stream
Aluminun	4,090	2,160	3,200	1,920
Antimony	<1	<1	<1	<1
Arsenic	10	3.0	4.5	3.5
Barium	115	15	30	20
Beryllium	0.5	<0.25	0.5	<0.25
Boron	40	<5	<5	<5
Cadmium	0.7	<0.05	0.15	<0.05
Chromium	58.5	3.0	4.5	3.0
Cobalt	10	2.5	5.0	2.5
Copper	20	5.0	15	5.0
Iron	>50,000	6,200	11,800	5,070
Lead	15	3.0	40	6.0
Manganese	7,070	300	296	145
Mercury	<0.1	<0.1	<0.1	<0.1
Nickel	12	6.0	8.0	4.0
Selenium	1.1	<0.1	1.1	0.3
Silver	<0.5	<0.5	<0.5	<0.5
Thallium	<0.5	<0.5	<0.5	<0.5
Tin	<1	<1	<1	<1
Vanadium	19	<10	<10	<10
Zinc	207	12	43	11.5

NUS CORPORATION

Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

C-34-12-3-256

ORIGINAL
(red)

December 9, 1983

Project No. 0749.14

Mr. Ed Shoener
U.S. Environmental Protection Agency
6th and Walnut Streets
Philaldelphia, Pennsylvania 19106

Dear Ed:

Enclosed please find a summary of organic and EP toxicity (metals) analyses for soil samples from the Lackawanna Refuse Site. Also included are organic analyses for the paint waste sample.

If you have any questions, please call me.

Very truly yours,

Richard M. Ninesteel

Richard M. Ninesteel, P.E.
Senior Engineer

RMN:md
Enclosure

cc: Abe Ferdas (without enclosure)

AR100290

ORIGINAL
(red)

EPA method of correcting sample concentrations using laboratory blank concentrations.

If a species of interest is detected in the lab blanks, the reported sample concentration is affected in one of three ways. If the blank concentration is less than the contract detection limit (CDL), no correction is required. If the blank concentration is greater than the CDL but less than or equal to one half of the measured sample concentration, the reported sample concentration is the difference of the measured sample and blank concentrations. This is noted on the data reporting sheet by a "C" adjacent to the reported result. If the blank concentration is greater than the CDL and greater than one half of the measured sample concentration, the result is not considered to be reliable. Sample results are then reported as "NDB", not detected due to blank.

LACKAWANNA REFUSE - ACID/BASE/NEUTRAL ORGANIC COMPOUNDS IN SOILS (ppb) - SEPTEMBER 1983

	LA-SO-01 Seep-100 from Sluice Pipe	LA-SO-02 Seep above Sluice Pipe	LA-SO-03 Seep below Pit #2	LA-SO-04 Seep between Pit #2 and Pit #5	LA-SO-05 Sediment - Villa Corp.	LA-SO-06 Soil - Access Road #1	LA-SO-07 Soil - Access Road #2
ARI002.02							
acenaphth *	--	--	--	--	--	--	--
aniline	--	--	--	--	--	< 100	--
anthracene *	--	--	--	--	--	300	400
benzo(a)anthracene *	--	--	--	--	--	--	--
benzyl alcohol	--	--	--	--	< 100	--	--
butyl benzyl phthalate *	--	--	--	--	--	--	--
chrysene *	--	--	--	--	--	--	--
dibenzofuran	--	--	--	--	--	--	< 100
di-n-butyl phthalate *	< 100	--	--	--	< 100	200	< 100
diethyl phthalate *	--	--	--	--	--	< 100	--
dimethyl phthalate *	--	--	< 100	< 100	--	--	--
di-n-octyl phthalate *	--	< 100	200	--	--	--	--
fluoranthene *	--	--	--	--	--	300	300
2-methylnaphthalene	--	--	--	--	--	< 100	200
2-methylphenol	< 100	--	--	--	--	--	--
4-methylphenol	--	--	--	--	--	--	--
naphthalene *	--	< 100	--	< 100	--	200	200
nitrobenzene *	< 100	--	--	--	< 100	--	--
phenanthrene *	--	--	--	--	--	200	400
phenol *	--	--	--	--	--	--	--
pyrene *	--	--	--	--	--	100	200
1,2,4-trichlorobenzene *	--	--	--	--	--	--	--
1,2-diphenylhydrazine *	--	< 100	--	--	--	--	--

* priority pollutant

ORIGINAL (red)

ARI0029 93

	LA-SO-08 Soil-Access Road #3	LA-SO-09 Soil-Access Road #4	LA-SO-10 Soil-Access Road #5	LA-SO-11 Soil-Access Road #6(a)	LA-SO-11 Soil-Access Road #6(b)	LA-SO-12 Soil-Access Road #7	LA-SO-13 Soil-Access Road #8
acenaphthene	--	--	--	--	--	--	--
aniline	--	--	--	--	--	--	--
anthracene*	200	300	--	200	< 100	800	< 100
benzo(a)anthracene*	--	--	--	--	--	200	--
benzyl alcohol	< 100	--	--	--	--	--	--
butyl benzyl phthalate*	--	--	--	--	--	--	--
chrysene*	--	--	--	--	--	200	--
dibenzofuran	--	--	--	--	--	--	--
di-n-butyl phthalate*	1,700	200	--	< 100	--	300	< 100
diethyl phthalate*	200	< 100	--	--	--	--	--
dimethyl phthalate*	--	--	--	--	--	--	--
di-n-octyl phthalate*	--	--	--	--	--	--	--
fluoranthene*	200	200	--	200	--	700	< 100
2-methylnaphthalene	< 100	< 100	--	--	< 100	100	< 100
2-methylphenol	--	--	--	--	--	300	--
4-methylphenol	--	--	--	--	--	300	--
naphthalene*	300	300	--	< 100	--	300	< 100
nitrobenzene*	--	--	--	--	--	--	--
phenanthrene*	< 100	300	--	100	< 100	700	< 100
phenol*	--	--	--	--	--	--	--
pyrene*	200	< 100	--	--	--	200	< 100
1,2,4-trichlorobenzene*	--	--	--	--	--	--	--
1,2-diphenylhydrazine*	--	--	--	--	--	--	--

ORIGINAL (red)

AR100291

	LA-SO-14 Soil-Access Road #9	LA-SO-15 Soil-Access Road #10	LA-SO-16 Soil-Access Road #11	LA-SO-17 Soil-Access Road #12	LA-SO-18 Soil-Access Road #13	LA-SO-19 Soil-Access Road #14	LA-SO-20 Seep-100' from Sluice Pipe
acenaphthene*	--	--	--	--	--	--	--
aniline	--	--	--	--	--	--	--
anthracene*	< 100	< 100	< 100	200	400	--	--
benzo(a) anthracene*	--	--	--	--	--	--	--
benzyl alcohol	--	--	--	--	--	--	400
butyl benzyl phthalate*	--	--	--	--	--	--	--
chrysene*	--	--	--	--	--	--	--
dibenzofuran	--	--	--	--	--	--	--
di-n-butyl phthalate*	< 100	< 100	< 100	200	< 100	--	< 100
diethyl phthalate*	--	--	--	< 100	200	--	1,200
dimethyl phthalate*	--	--	--	--	--	--	--
di-n-octyl phthalate*	--	--	--	--	--	--	--
fluoranthene*	< 100	< 100	< 100	200	300	--	--
2-methyl naphthalene	< 100	--	--	200	< 100	--	--
2-methyl phenol	--	--	--	400	--	--	500
4-methyl phenol	--	--	--	400	--	--	500
naphthalene*	< 100	--	--	200	< 100	--	--
nitrobenzene*	--	--	--	400	--	--	--
phenanthrene*	< 100	--	< 100	100	300	--	--
phenol*	--	--	--	--	--	--	--
pyrene*	--	--	< 100	< 100	400	--	--
1,2,4-trichlorobenzene*	--	--	--	--	--	--	--
1,2-diphenylhydrazine*	--	--	--	--	--	--	--

ORIGINAL (red)

ARI00295

	LA-So-22 Sediment- Drainage Ditch	LA-So-23 Sediment-Stream Above Drainage Ditch	LA-So-24 Sediment- Stream Below Drainage Ditch	LA-So-25 Soil- Borehole Pit #1	LA-So-26 Soil- Borehole Pit #2	LA-So-27 Sediment- Pit #5 Seep	LA-So-28 Sediment- Pit #1
acenaphthene*	--	--	--	--	--	--	--
aniline	--	--	--	--	--	--	--
anthracene*	200	--	--	--	500	--	--
benzo(a)anthracene*	--	--	--	--	--	--	--
benzyl alcohol	--	--	--	--	1,900	--	--
butyl benzyl phthalate*	--	--	--	< 100	--	--	--
chrysene*	--	--	--	--	--	--	--
dibenzofuran	--	--	--	--	--	--	--
di-n-butyl phthalate*	200	--	--	700	--	200	500
diethyl phthalate*	--	--	--	--	--	< 100	--
dimethyl phthalate*	--	--	--	--	--	--	--
di-n-octyl phthalate*	--	--	--	--	--	--	--
fluoranthene*	200	--	--	--	--	--	--
2-methylnaphthalene	< 100	--	--	--	11,300	--	--
2-methylphenol	1,800	--	--	--	5,300	--	--
4-methylphenol	1,800	--	--	--	5,400	--	--
naphthalene*	400	--	--	< 100	7,000	--	--
nitrobenzene*	--	--	--	--	--	--	--
phenanthrene*	200	--	--	--	500	--	--
phenol*	700	--	--	--	< 700	--	--
pyrene*	--	--	--	--	--	--	--
1,2,4-trichlorobenzene*	--	--	--	--	300	--	--
1,2-diphenylhydrazine*	--	--	--	--	--	--	--

ORIGINAL (red)

AR100296

	LA-SO-29 Sediment - Base of Spoil Pile	LA-SO-30 Sediment - Stream before St. Johns Creek	LA-SO-31 Sediment - St. Johns Creek above Stream	LA-SO-32 Sediment - St. Johns Cr. below Stream (a)	LA-SO-32 Sediment - St Johns Cr below Stream (b)	LA-SO-21 FIELD BLANK	LAB BLANK
acenaphthene*	--	< 100	--	--	--	--	--
aniline	--	--	--	--	--	--	--
anthracene*	--	1,500	800	--	--	--	--
benzo(a) anthracene*	--	500	--	--	--	--	--
benzyl alcohol	--	--	--	--	--	--	--
butyl benzyl phthalate*	--	--	--	--	--	--	--
chrysene*	--	700	--	--	--	--	--
dibenzofuran	--	< 100	< 100	--	--	--	--
di-n-butyl phthalate*	--	< 100	--	10,600	--	--	--
diethyl phthalate*	--	--	--	< 100	--	--	--
dimethyl phthalate*	--	--	--	--	--	--	--
di-n-octyl phthalate*	--	--	--	--	--	--	--
fluoranthene*	--	3,400	1,200	--	--	--	--
2-methyl naphthalene	--	100	< 100	--	--	--	--
2-methyl phenol	500	--	--	--	--	--	--
4-methyl phenol	500	--	--	--	--	--	--
~~naptha~~ naphthalene*	< 100	200	< 100	--	< 100	--	--
nitrobenzene*	--	--	--	--	--	--	< 100
phenanthrene*	--	1,300	700	--	--	--	--
phenol*	--	--	--	--	--	--	--
pyrene*	--	800	300	--	--	--	--
1,2,4-trichlorobenzene*	--	--	--	--	--	--	--
1,2-diphenylhydrazine*	--	--	--	--	--	--	--

ORIGINAL (red)

RANGE OF CONCENTRATIONS IN SOILS ACID/BASE/NEUTRAL COMPOUNDS (ppb) SEPTEMBER 1983

AR102271

ORIGINAL (red)

	Concentration Range All Samples	Concentration Range Acker Road
acenaphthene	ND - < 100	ND
aniline	ND - < 100	ND - < 100
anthracene *	ND - 1,500	ND - 800
benzo(a)anthracene *	ND - 500	ND - 200
benzyl alcohol	ND - 4,900	ND - < 100
butyl benzyl phthalate *	ND - < 100	ND
chrysene *	ND - 700	ND - 200
dibenzofuran	ND - < 100	ND - < 100
di-n-butyl phthalate *	ND - 10,600	ND - 1,700
diethyl phthalate *	ND - 1,200	ND - 200
dimethyl phthalate *	ND - < 100	ND
di-n-octyl phthalate *	ND - 200	ND
fluoranthene *	ND - 700	ND - 700
2-methylnaphthalene	ND - 11,300	ND - 200
2-methyl phenol	ND - 5,300	ND - 400
4-methylphenol	ND - 5,400	ND - 400
naphthalene *	ND - 7,000	ND - 300
nitrobenzene *	ND - 400	ND - 400
phenanthrene *	ND - 1,300	ND - 700
phenol *	ND - 700	ND
pyrene *	ND - 800	ND - 400
1,2,4-trichlorobenzene *	ND - 300	ND
1,2-diphenylhydrazine *	ND - < 100	ND

AR300298

LACKAWANNA REFUSE - VOLATILES, PESTICIDES - ORGANIC COMPOUNDS IN SOILS (ppb) - SEPTEMBER 1983

	LA-SO-01 Seep-100' from Sluice Pipe	LA-SO-02 Seep above Sluice Pipe	LA-SO-03 Seep below Pit #2	LA-SO-04 Seep between Pit #2 and Pit #5	LA-SO-05 Sediment-Villa Corp.	LA-SO-06 Soil-Access Road #1	LA-SO-07 Soil-Access Road #2
acetone	NDB	NDB	NDB	NDB	NDB	NDB	NDB
acrylonitrile *	--	--	--	--	--	--	--
benzene *	NDB	NDB	NDB	NDB	NDB	NDB	NDB
2-butanone	--	--	--	--	--	--	--
chlorobenzene *	NDB	NDB	NDB	NDB	NDB	--	--
chloroform *	--	--	--	--	--	--	--
4,4'-DDD *	--	--	--	--	--	--	--
4,4'-DDE *	--	--	--	--	--	--	--
4,4'-DDT *	--	--	160.0	60.0	--	--	--
1,1-dichloroethane *	--	--	--	--	--	--	--
ethyl benzene *	20.3	5.6	7.1	4.1	--	13.0	--
2-hexanone	--	--	--	--	--	--	--
methyl chloride *	--	--	--	--	--	--	--
methylene chloride *	75 C	NDB	NDB	NDB	NDB	182 C	150 C
tetrachloroethylene *	--	--	--	--	--	--	--
1,1,2,2-tetrachloroethane *	6.6	< 3.0	< 3.0	--	--	--	--
toluene *	< 4.0	< 3.0	3.0	< 3	--	23.6	11.6
trichlorofluoromethane *	--	--	--	--	--	--	< 8.0
vinyl acetate	--	--	--	--	--	--	--
o-xylene	NDB	NDB	NDB	NDB	13.7 C	50 C	34C

* priority pollutant

ORIGINAL (red)

AR100499

	LA-So-08 Soil Access Road #3	LA-So-09 Soil Access Rd. #4	LA-So-10 Soil Access Rd #5	LA-So-11 Soil Access Rd #6(a)	LA-So-11 Soil Access Rd. #6(b)	LA-So-12 Soil Access Rd. #7	LA-So-13 Soil Access Rd. #8
acetone	93.7 C	56.3 C	61.7 C	1,335 C	2280 C	91 C	117 C
acrylonitrile*	--	--	--	--	74.1	--	--
benzene*	NDB	NDB	NDB	--	NDB	NDB	3.5 C
2-butanone	--	--	--	--	--	--	--
chlorobenzene*	--	--	--	NDB	--	--	NDB
chloroform*	--	--	--	--	--	--	--
4,4'-DDD*	--	--	--	--	--	--	--
4,4'-DDE*	--	--	--	--	--	--	--
4,4'-DDT*	40	--	--	--	--	--	--
1,1-dichloroethane*	--	--	--	--	--	--	--
ethylbenzene*	5.0	--	--	4.9	< 4.0	--	--
2-hexanone	--	--	--	--	--	--	--
methyl chloride*	--	--	< 6.0	--	--	--	--
methylene chloride*	240 C	200 C	433 C	338 C	344 C	131 C	290 C
tetrachloroethylene*	--	--	--	--	--	--	--
1,1,2,2-tetrachloroethane*	--	--	--	--	--	--	--
toluene*	--	8.1	5.7	3.3	< 4.0	6.3	11.1
trichlorofluoromethane*	< 8.0	< 8.0	22.5	--	< 8.0	--	< 8.0
vinyl acetate	--	--	--	--	--	--	--
o-xylene	26 C	25 C	19 C	NDB	NDB	NDB	NDB

ORIGINAL (red)

AR100300

	LA-SO-14 Soil Access Rd. #9	LA-SO-15 Soil Access Rd. #10	LA-SO-16 Soil Access Rd. #11	LA-SO-17 Soil Access Rd. #12	LA-SO-18 Soil Access Rd. #13	LA-SO-19 Soil Access Rd. #14	LA-SO-20 Seep- 100' from Sluice Pipe
acetone	300 C	NDB	386 C	104C	NDB	95 C	NDB
acrylonitrile *	--	--	--	--	--	--	--
benzene *	NDB	NDB	NDB	NDB	--	--	NDB
2-butanone	--	--	--	--	--	--	--
chlorobenzene *	NDB	NDB	NDB	NDB	NDB	--	--
chloroform *	< 3.0	--	--	--	--	--	--
4,4'-DDD *	--	--	--	--	--	--	--
4,4'-DDE *	--	--	--	--	--	--	--
4,4'-DDT *	--	40.0	36.0	40.0	--	40.0	50.0
1,1-dichloroethane *	--	--	--	--	--	--	--
ethylbenzene *	7.8	--	7.3	6.4	--	--	--
2-hexanone	--	--	--	--	--	--	--
methyl chloride *	--	--	--	--	--	--	--
methylene chloride *	500 C	205 C	91 C	256 C	73 C	176 C	27 C
tetrachloroethylene *	7.0	--	--	< 7.0	--	--	--
1,1,2,2-tetrachloroethane *	--	--	--	--	--	--	--
toluene *	15.4	3.9	11.7	8.9	< 3.0	4.9	4.8
trichlorofluoromethane *	< 8.0	< 8.0	--	< 8.0	--	--	--
vinyl acetate	--	--	--	--	--	--	--
o-xylene	41 C	NDB	33C	31C	NDB	NDB	NDB

ORIGINAL (red)

ARI 0030

	LA-SO-22 Sediment - Drainage Ditch	LA-SO-23 Sediment - Stream above Drainage Ditch	LA-SO-24 Sediment - Stream below Drainage Ditch	LA-SO-25 Soil - Borehole Pit #1	LA-SO-26 Soil - Borehole Pit #2	LA-SO-27 Sediment Pit #5 Seep	LA-SO-28 Sediment Pit #1
acetone	NDB	138 C	NDB	60 C	NDB	NDB	71 C
acrylonitrile*	--	--	--	--	--	--	--
benzene*	NDB	NDB	NDB	NDB	--	NDB	NDB
2-butanone	< 10.0	--	--	--	--	--	--
chlorobenzene*	--	--	--	--	NDB	--	--
chloroform*	--	--	--	--	--	--	--
4,4'-DDD*	4,800	--	--	--	--	--	--
4,4'-DDE*	5,800	10.0	--	--	--	--	--
4,4'-DDT*	100.0	40.0	--	30.0	--	--	--
1,1-dichloroethane*	--	--	--	--	< 6.0	--	--
ethylbenzene*	--	--	--	--	< 4.0	--	--
2-hexanone	--	--	--	--	50.7	--	--
methyl chloride*	--	--	--	--	--	--	--
methylene chloride*	178 C	33 C	NDB	106 C	71 C	25 C	67 C
tetrachloroethylene*	--	--	--	--	< 7.0	--	--
1,1,2,2-tetrachloroethane*	--	--	--	--	< 3.0	--	--
toluene*	6.3	8.9	< 4.0	< 4.0	446.0	8.2	5.4
trichlorofluoromethane*	--	--	--	--	< 8.0	--	--
vinyl acetate	--	--	--	--	--	--	--
o-xylene	NDB	NDB	NDB	NDB	NDB	--	NDB

ORIGINAL (red)

	LA-SO-29 Sediment Base of Spoil Pile	LA-SO-30 Sediment Stream before St Johns Creek	LA-SO-31 Sediment-St. Johns Creek above Stream	LA-SO-32 Sediment-St. Johns Creek below Stream	LA-SO-21 FIELD BLANK	LAB BLANK
acetone	54 C	NDB	NDB	NDB	17,533.5	56.7
acrylonitrile*	--	--	--	--	--	--
benzene*	NDB	--	--	--	< 3.0	3.0
2-butanone	--	--	--	--	--	--
chlorobenzene*	--	--	--	--	--	11.0
chloroform*	--	--	--	--	4.7	--
4,4'-DDD*	--	--	--	--	--	--
4,4'-DDE*	--	--	--	--	--	--
4,4'-DDT*	--	--	--	--	--	--
1,1-dichloroethane*	--	--	--	--	--	--
ethyl benzene*	--	--	--	--	--	< 4.0
2-hexanone	--	--	--	--	--	--
methyl chloride*	--	--	--	--	--	--
methylene chloride*	NDB	NDB	93 C	NDB	159.9	24.3
tetrachloroethylene*	--	--	--	--	--	--
1,1,2,2-tetrachloroethane*	--	--	--	--	--	< 3.0
toluene*	< 4.0	5.3	< 4.0	--	< 3.0	--
trichlorofluoromethane*	--	--	--	--	--	--
vinyl acetate	--	11.0	--	--	--	--
o-xylene	--	--	--	--	--	12.3

NDB - not detected due to blank (lab)
C - corrected for lab blank

ORIGINAL (red)

RANGE OF CONCENTRATIONS IN SOILS - VOLATILES / PESTICIDES (ppb) SEPTEMBER 1983

	Concentration Range All Samples	Concentration Range Access Road	Detected in Field Blank
acetone	NDB - 2,280 C	NDB - 2,280	YES
acrylonitrile *	ND - 74.1	ND - 74.1	
benzene *	NDB - 3.5	ND - 3.5	YES
2-butanone	ND - < 10	ND	
chlorobenzene *	NDB	NDB	YES
chloroform *	ND - < 3	ND - < 3	YES
4,4'-DDD *	ND - 4,800	ND	
4,4'-DDE *	ND - 5,800	ND	
4,4'-DDT *	ND - 160	ND - 40	
1,1-dichloroethane *	ND - < 6	ND	
ethyl benzene *	ND - 20.3	ND - 13	YES
2-hexanone	ND - 50.7	ND	
methyl chloride *	ND - < 6	ND - < 6	
methylene chloride *	NDB - 500 C	NDB - 500C	YES
tetrachloroethylene *	ND - 7	ND - 7	
1,1,2,2,-tetrachloroethane *	ND - 6.6	ND	YES
toluene *	ND - 446	ND - 23.6	YES
trichlorofluoromethane *	ND - 22.5	ND - 22.5	
vinyl acetate	ND - 11	ND	
p-xylene	NDB - 50 C	NDB - 50 C	YES

AR900303

ORIGINAL (red)

ORIGINAL

LACKAWANNA - TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS IN SOILS (ppb) SEPTEMBER 1983

Location	Compound	Estimated Concentration
Seep - 100' from sluice pipe	octasulfur	60,000
	silicone	50
	hydrocarbon	20
	hydrocarbon	70
	silicone	40
Seep above Sluice Pipe	silicone	90
	dichlorobenzene	80
	silicone	70
Seep below Pit #2	silicone	90
	hydrocarbon	20
	dichlorobenzene	80
	silicone	80
Seep between Pit #2 & Pit #5	silicone	90
	hydrocarbon	20
	dichlorobenzene	90
	silicone	70
Sediment - Villa Corp.	silicone	60
	dichlorobenzene	100
	silicone	1100
Soil - Access Road #1	hydrocarbon	200
	silicone	500
	silicone	100

ORIGINAL

(red)

Location	Compound	Estimated Concentration
Soil- Access Road #2	hydrocarbon	300
	hydrocarbon	500
	trimethyl naphthalene	100
	hydrocarbon	800
	hydrocarbon	900
	hydrocarbon	700
	hydrocarbon	700
	methyl anthracene	100
	silicone	80
	hydrocarbon	80
Soil- Access Road #3	silicone	300
	hydrocarbon	80
Soil- Access Road #4	trimethyl benzene	800
	tetramethyl benzene	500
	hydrocarbon	400
	hydrocarbon	300
	hydrocarbon	400
	trimethyl naphthalene	200
	hydrocarbon	400
	tetramethyl naphthalene	100
	hydrocarbon	500
	hydrocarbon	400
	hydrocarbon	600
	methyl anthracene	300
	hydrocarbon	400
	silicone	100
	silicone	50
	hydrocarbon	50
Soil- Access Road #5	silicone	60
	hydrocarbon	70
	hydrocarbon	30

ORIGINAL (red)

Location	Compound	Estimated Concentration
Soil- Access Road #6 (a)	silicone	60
	hydrocarbon	60
	~~dichlorobenzene~~ hydrocarbon	60
	octasulfur	3,000
Soil- Access Road #6 (b)	silicone	40
	hydrocarbon	10
	dichlorobenzene	5
	hydrocarbon	30
	silicone	30
Soil- Access Road #7	silicone	20
	hydrocarbon	5
	hydrocarbon	20
Soil- Access Road #8	trimethyl benzene	400
	silicone	300
	hydrocarbon	50
	hydrocarbon	200
Soil- Access Road #9	silicone	100
	hydrocarbon	50
	hydrocarbon	200
	hydrocarbon	80
Soil- Access Road #10	silicone	50
	hydrocarbon	20
	dichlorobenzene	10
	dichlorobenzene	10
	hydrocarbon	30
	silicon	30

ORIGINAL (red)

Location	Compound	Estimated Concentration
Soil- Access Road #11	silicone	60
	hydrocarbon	20
	hydrocarbon	100
	hydrocarbon	20
	hydrocarbon	30
	hydrocarbon	10
	hydrocarbon	300
	hydrocarbon	100
Soil- Access Road #12	butyric acid	3,000
	1-chloro-2-bromopropane	1,000
	hydrocarbon	1,000
	pentanoic acid	2,000
	hydrocarbon	1,000
	hydrocarbon	1,000
	hydrocarbon	1,000
	silicone	100
	hydrocarbon	70
	hydrocarbon	200
	hydrocarbon	80
Soil- Access Road #13	hydrocarbon	600
	silicone	70
	hydrocarbon	20
	dichlorobenzene	80
	silicone	40
	hydrocarbon	40
Soil- Access Road #14	silicone	60
	hydrocarbon	100
	hydrocarbon	70

ORIGINAL (red)

Location	Compound	Estimated Concentration
Seep - 100' from sluice pipe	1-chloro-2-bromopropane	200
	octasulfur	30,000
	silicone	60
	hydrocarbon	30
	hydrocarbon	80
Sediment - Drainage Ditch	toluene	20,000
	xylene	2,000
	2-heptanone	10,000
	xylene	2,000
	silicone	50
	hydrocarbon	60
Sediment - Stream above Drainage Ditch	silicone	50
	hydrocarbon	20
	hydrocarbon	70
Sediment - Stream below Drainage Ditch	silicone	40
	hydrocarbon	20
	hydrocarbon	60
Soil - Borehole Pit #1	tetrachloroethylene	600
	silicone	40
	hydrocarbon	20
	hydrocarbon	80

ORIGINAL (red)

Location	Compound	Estimated Concentration
Soil - Borehole Pit #2	toluene	10,000
	tetrachloroethylene	1,000
	xylene	2,000
	vylene	1,000
	hydrocarbon oil (at % level)	
	C_7 - alkane	50
	C_7 - alkene	60
	C_7 - alkane	100
	C_7 - alkane	60
	C_7 - alkane	300
	C_7 - alkane	200
	C_8 - alkane	40
	C_8 - alkene	60
	silicone	60
	dichlorobenzene	50
	hydrocarbon	40
	silicone	40
Sediment - Pit #5 Seep	NONE	
Sediment - Pit #1	NONE	
Sediment - Base of Spoil Pile	NONE	
Sediment - Stream above St. Johns Creek	octasulfur	5,000
Sediment - St. Johns Creek before Stream	octasulfur	5,000
	silicone	100
	silicone	40
	hydrocarbon	40
Sediment - St Johns Creek below Stream	Silicone	100
Field Blank	silicone	50
	dichlorobenzene	20

ORIGINAL (red)

LACKAWANNA REFUSE 0749.14

EP TOXICITY RESULTS (mg/l) - SOIL SAMAES SEPTEMBER 1983

LA-50-01 through LA-50-32

Parameter	EP Leachate All Samples	RCRA Limit
arsenic	< 0.5	5.0
barium	< 10.0	100.0
cadmium	< 0.1	1.0
chromium	< 0.5	5.0
lead	< 0.5	5.0
mercury	< 0.02	0.2
selenium	< 0.25	1.0
silver	< 0.5	5.0

LACKAWANNA REFUSE

PAINT WASTE ORGANICS (ppm)

LA-WS-01 OCTOBER, 1983

ORIGINAL

(red)

Compound	Concentration
2-butanone	< 20.0
di-n-butyl phthalate	< 5.1
ethyl benzene	9.1
methylene chloride	< 2.3
o-xylene	33.0

Tentatively Identified Compounds	Estimated Concentration
xylenes	10
ethylbenzene	50
xylenes	200
xylenes	200
ethylmethyl benzene	40
trimethyl benzene	70
ethylmethyl benzene	40
trimethyl benzene	80
benzenedicarboxylic acid	50
hydrocarbon	70
hydrocarbon	40
hydrocarbon	100
hydrocarbon	200

LACKAWANNA REFUSE - WATER SAMPLES (9/83)

TENTATIVELY IDENTIFIED COMPOUNDS (ppb)

ORIGINAL (red)

Sample	Compound	Estimated Concentration
Sluice Pipe (R2466)	2-methyl-2-propanol	15
	2,2-dimethyl-1,3-propanediol	35
	decahydro-2-methyl-napthalene	61
	1-[2-(2-methoxy-1-methylethoxy)-1-methylethoxy]-2-propanol	28
Base of Spoil Pile (R2467)	2,2-dimethyl-1,3-propanediol	22
	2,2,4-trimethyl-1,3-pentane	34
	1-[2-(2-methoxy-1-methylethoxy)-1-methylethoxy]-2-propanol	12
Stanik Well (R2468, R2469)	None	
Swanek Well (R2470)	None	
Smicherko Well (R2471)	None	
Old Forge Outfall (R2473, R2474)	None	
Blank (R2472)	None	
Blank (R2475)	1,1,2-trichloro-1,2,2-trifluoroethane	24

AR100312

CENTURY
LABORATORIES, INC.
P.O. Box 246 1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: 609; 848-3939 NJ 800-222-0589

ORIGINAL
(red)

April 13, 1984

CLIENT:	ROY F. WESTON, INC. 5090 Central Highway Pennsauken, New Jersey ATTN: Mr. Jay Montwani
PROJECT:	Analytical Laboratory Testing of Samples from: "Northeast Land Development Corp"
TEST REQUIRED:	VOLATILE ORGANIC PRIORITY POLLUTANTS, ACID ECTRACTABLES AND BASE NEUTRAL EXTRACTABLE PRIORITY POLLUTANTS: ALSO SELECTED WET CHEMICAL PARAMETERS AND METALS.
METHOD OF ANALYSIS:	U.S.E.P.A. Recommended Methods 624 and 625 with Gas Chromatography screening 40CFR Part 136, No. 233 December 3, 1979, along with other approved methods listed in the same document.
DATE RECEIVED:	April 10, 1984
SAMPLES COLLECTED BY:	Client's Representative
ANALYSIS PERIOD:	April 10, 1984 thru April 13, 1984
ANALYSIS NO:	A4117 thru A4121

ANALYTICAL LABORATORY TESTING

PRIORITY POLLUTANTS

AR100313

ORIGINAL
(red)

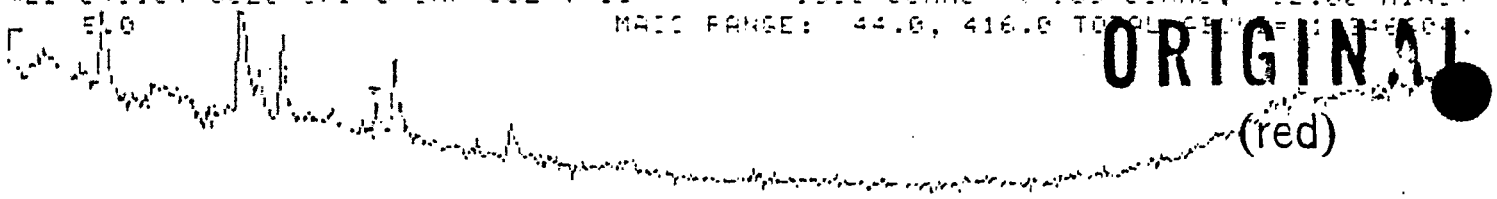
INDENTIFICATION AND LOCATION OF SAMPLES

SAMPLES RECEIVED APRIL 10, 1984

ANALYSIS NO	SAMPLE IDENTIFICATION
A4117	#2210131
A4118	#2210132
A4119	#2210133
A4120	#2210134
A4121	#221035 (Blank)

All information regarding these samples (location, identification, date time, preservation etc.) where the sample collection has been preformed by clients' representative, is as represented to us by the client.

A4117(WESTON? 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20317, CRN 136
WLD 041184 0820 SPB-5 CAP COL T=10 1508 SCANS (903 SCANS, 32.00 MINS)
MASS RANGE: 44.0, 416.0 TOTAL ABUND= 11346604.

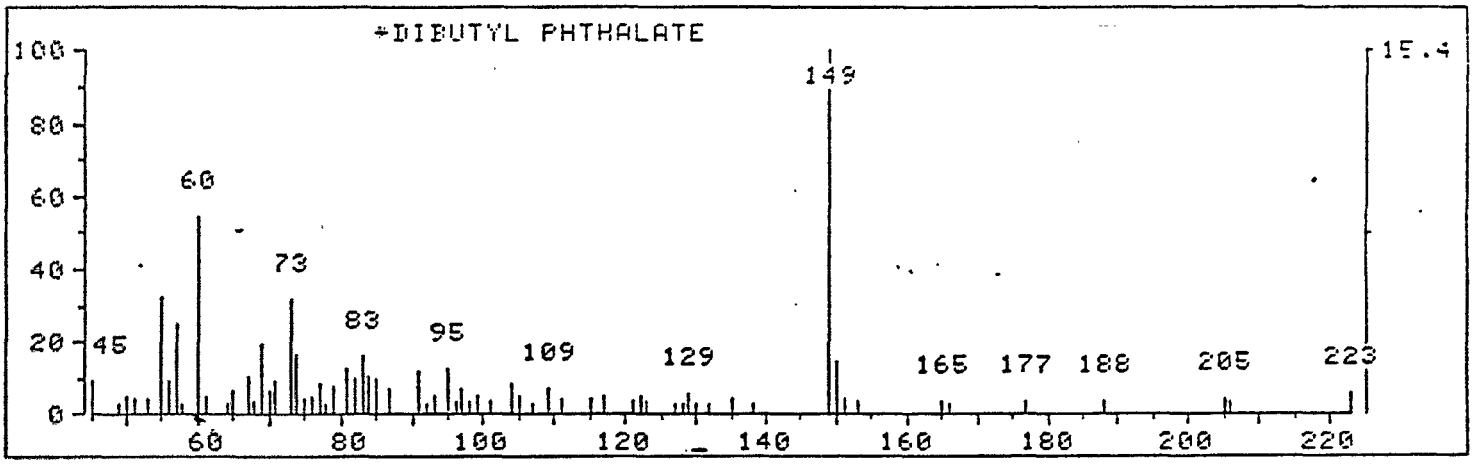


ORIGINAL

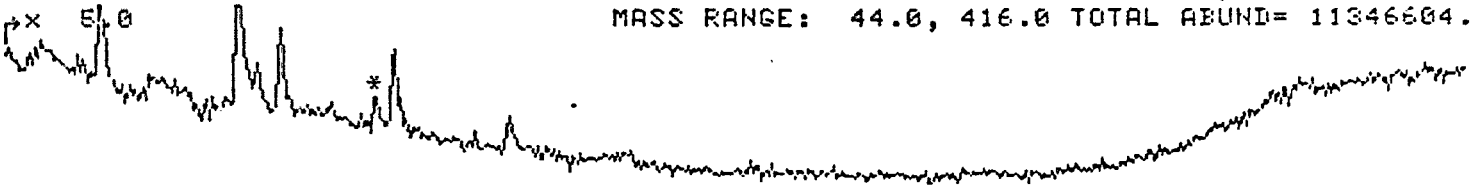
(red)

17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
MINS

* 597 RET. TIME: 24.13 TOT ABUND= 2270. BASE PK/ABUND: 149.0/ 349.

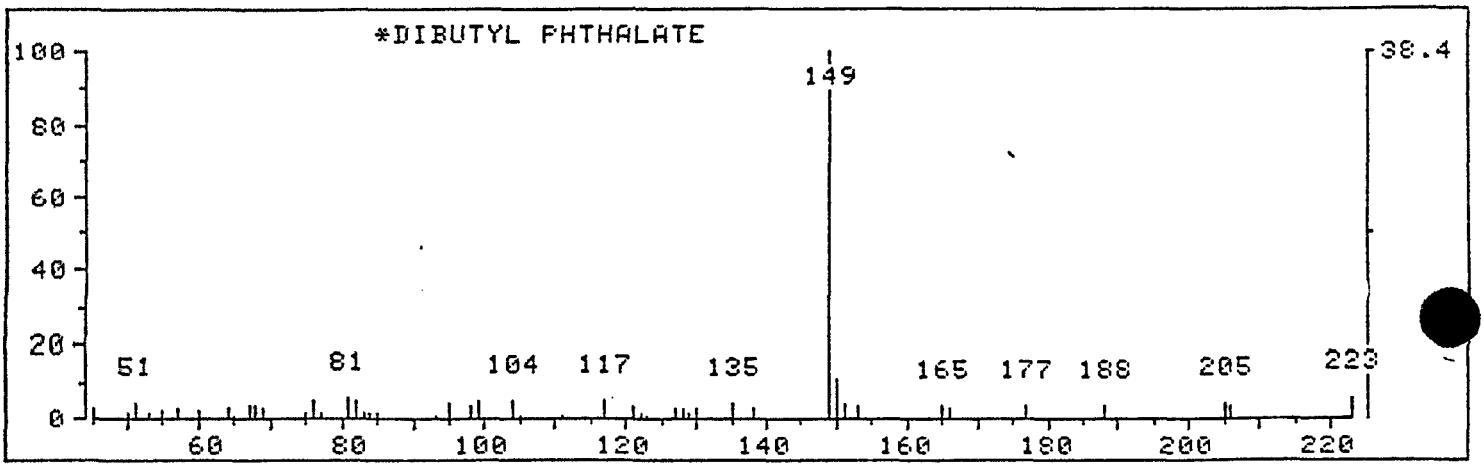


A4117(WESTON? 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20317, CRN 136
WLD 041184 0820 SPB-5 CAP COL T=10 1508 SCANS (903 SCANS, 32.00 MINS)
MASS RANGE: 44.0, 416.0 TOTAL ABUND= 11346604.



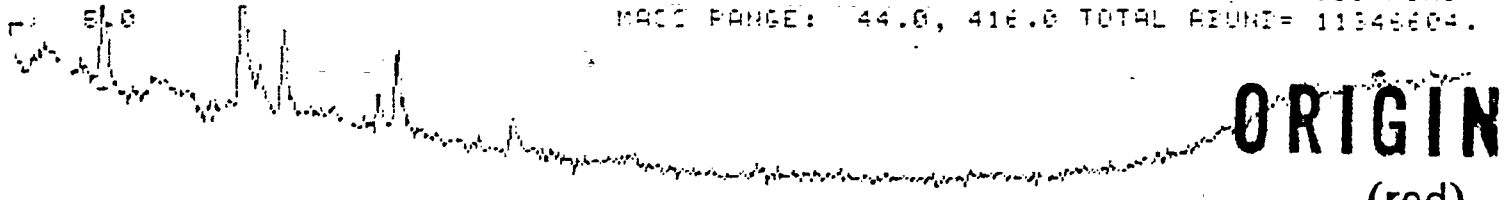
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
MINS

AVERAGED SPECTRUM * BASE PK/ABUND: 149.0/ 32000. + 597 -592



AR100315

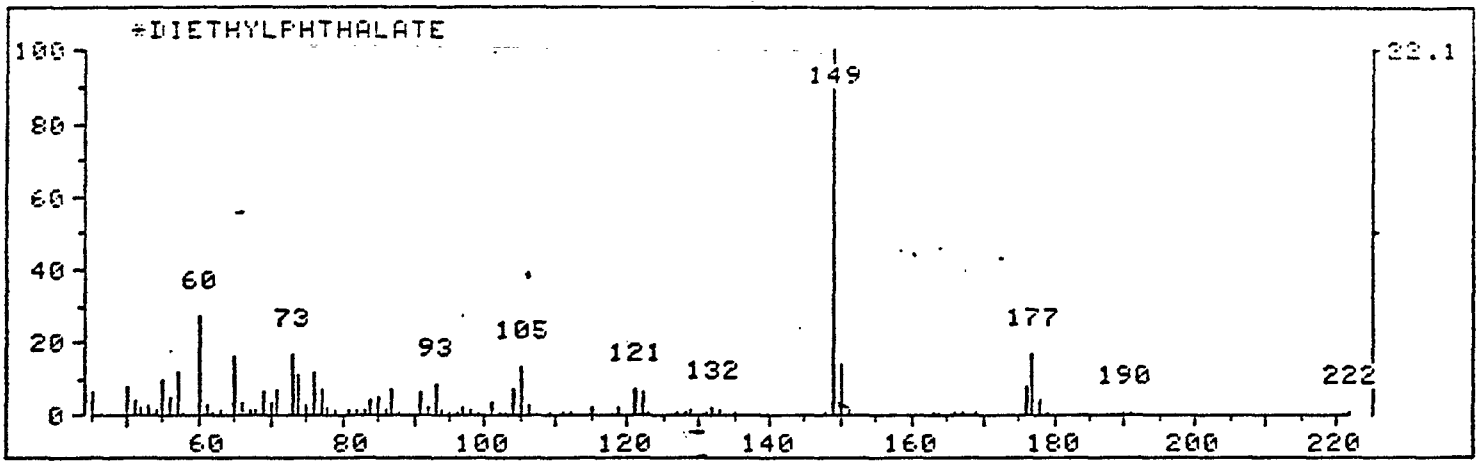
A4117(WESTON? 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20317, CRN 136
WLD 041184 0820 SPB-5 CAP COL T=10 1508 SCANS (903 SCANS, 32.00 MINS)
MASS RANGE: 44.0, 416.0 TOTAL ABUND= 11346604.



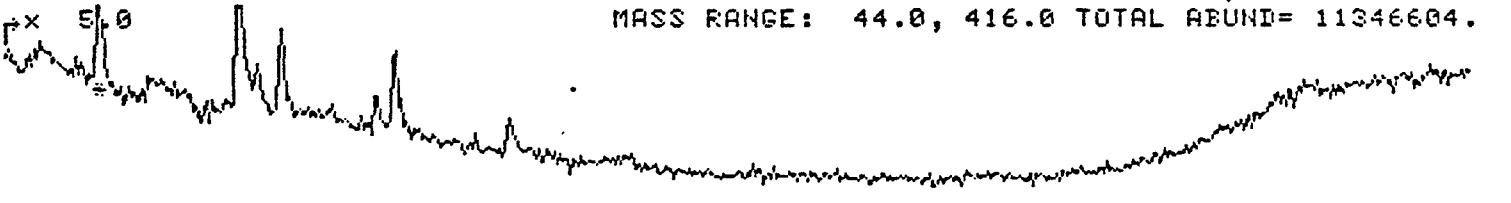
ORIGIN
(red)

17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
MINS

428 RET. TIME: 18.07 TOT ABUND= 5326. BASE PK/ABUND: 149.0/ 1178.

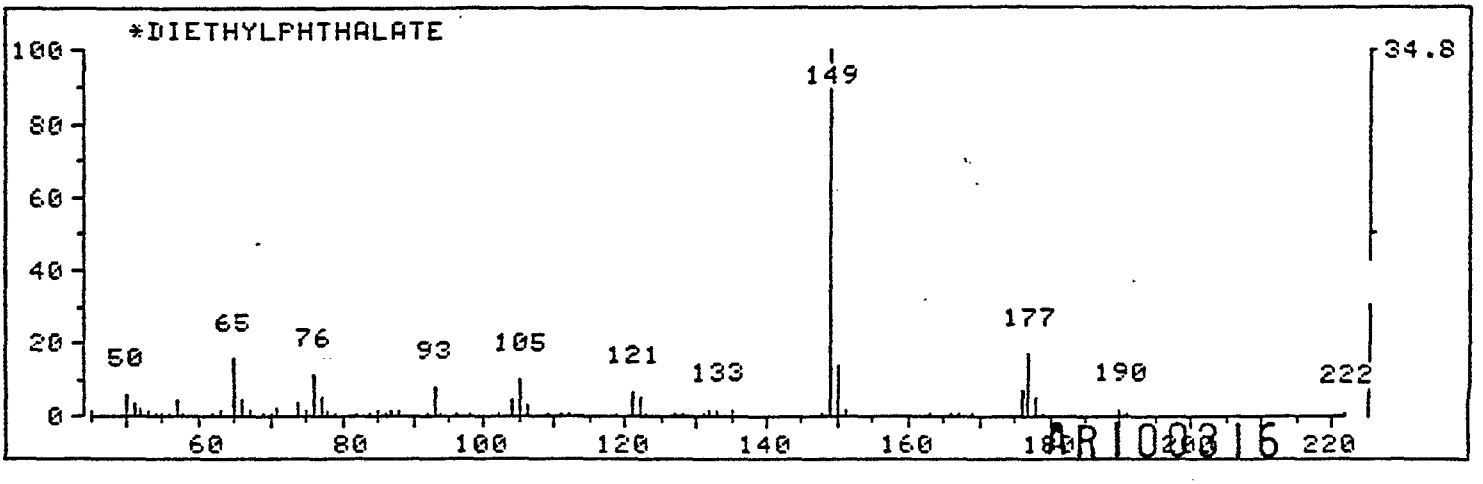


A4117(WESTON? 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20317, CRN 136
WLD 041184 0820 SPB-5 CAP COL T=10 1508 SCANS (903 SCANS, 32.00 MINS)
MASS RANGE: 44.0, 416.0 TOTAL ABUND= 11346604.



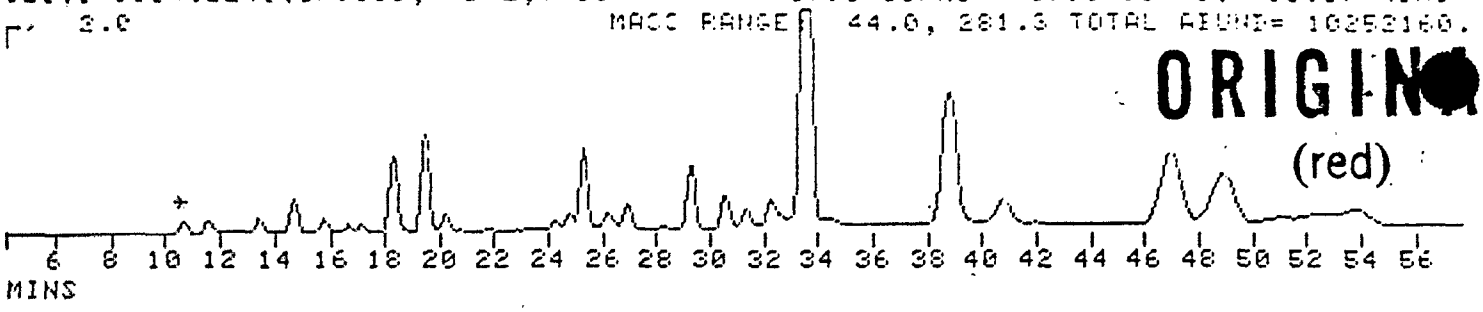
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
MINS

AVERAGED SPECTRUM * BASE PK/ABUND: 149.0/ 32000. + 428 -421

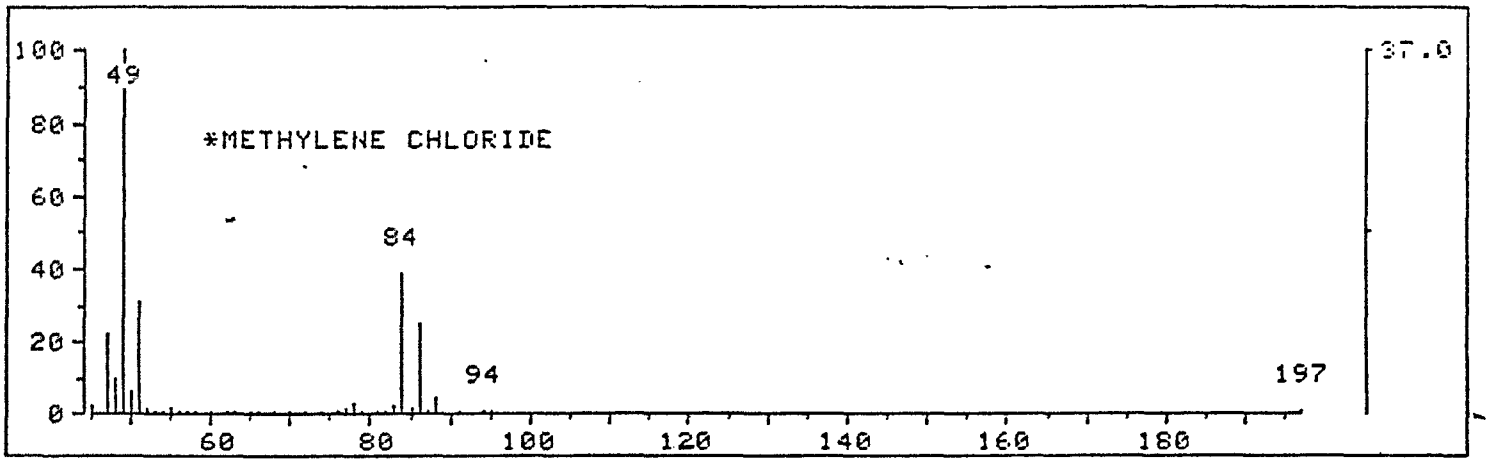


A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600 FRN 10317, CRN 10
CLC,041184,2240,SP1000,A/D=2,T=10 1790 SCANS (1790 SCANS, 53.57 MINS)
2.0 MASS RANGE: 44.0, 281.3 TOTAL ABUND= 10252160.

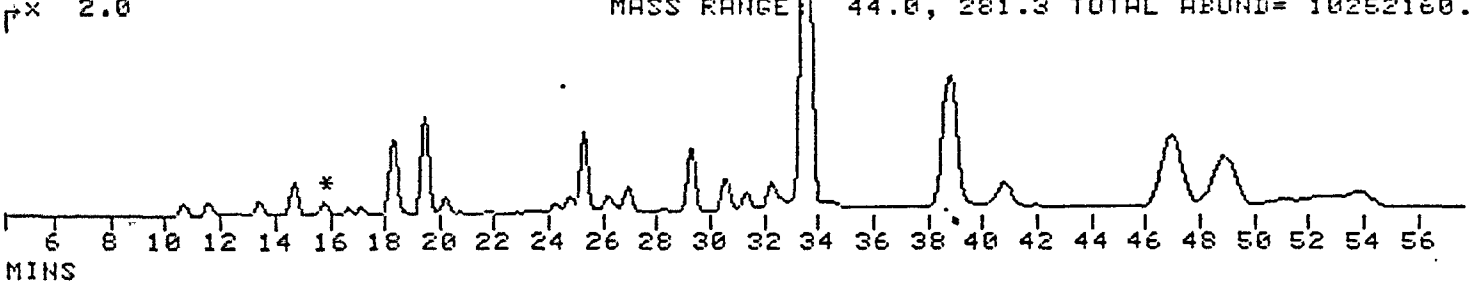
ORIGINAL
(red)



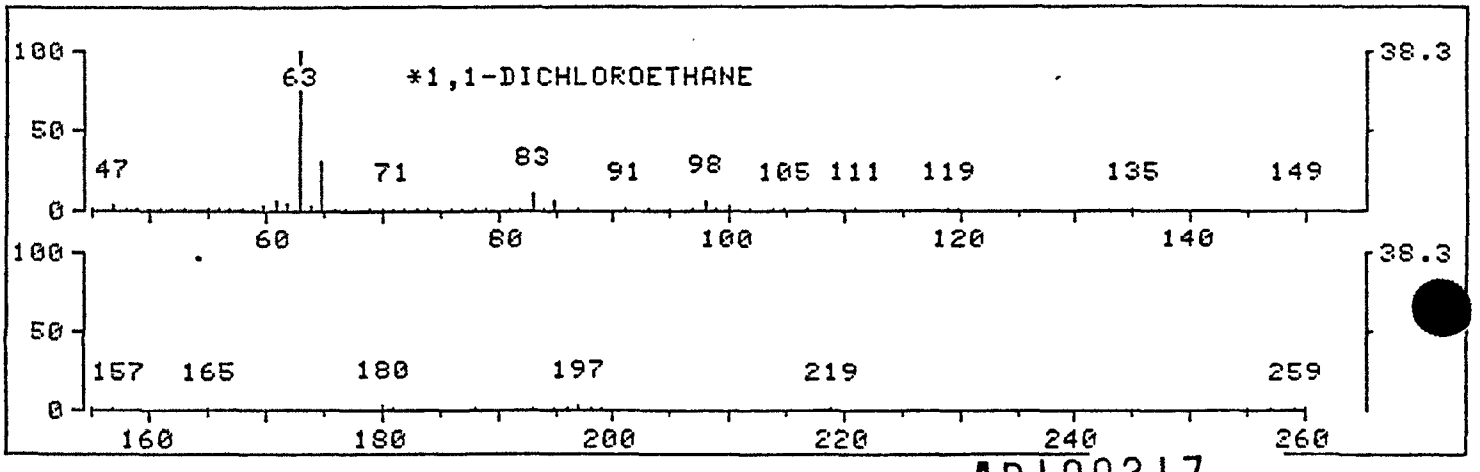
* 223 RET. TIME: 10.67 TOT ABUND= 4129. BASE PK/ABUND: 49.1/ 1528.



A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600 FRN 10317, CRN 10
CLC,041184,2240,SP1000,A/D=2,T=10 1790 SCANS (1790 SCANS, 53.57 MINS)
2.0 MASS RANGE: 44.0, 281.3 TOTAL ABUND= 10252160.



* 393 RET. TIME: 15.73 TOT ABUND= 5045. BASE PK/ABUND: 63.1/ 1934.

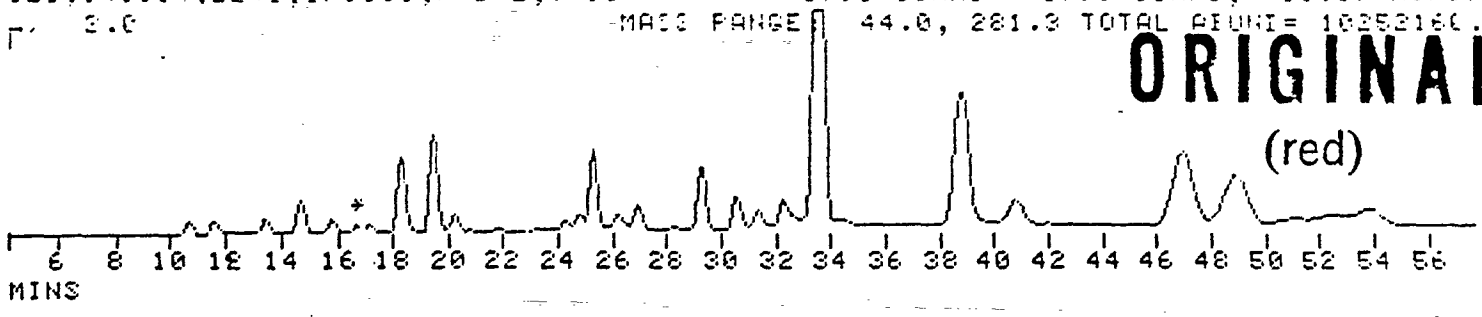


AR100317

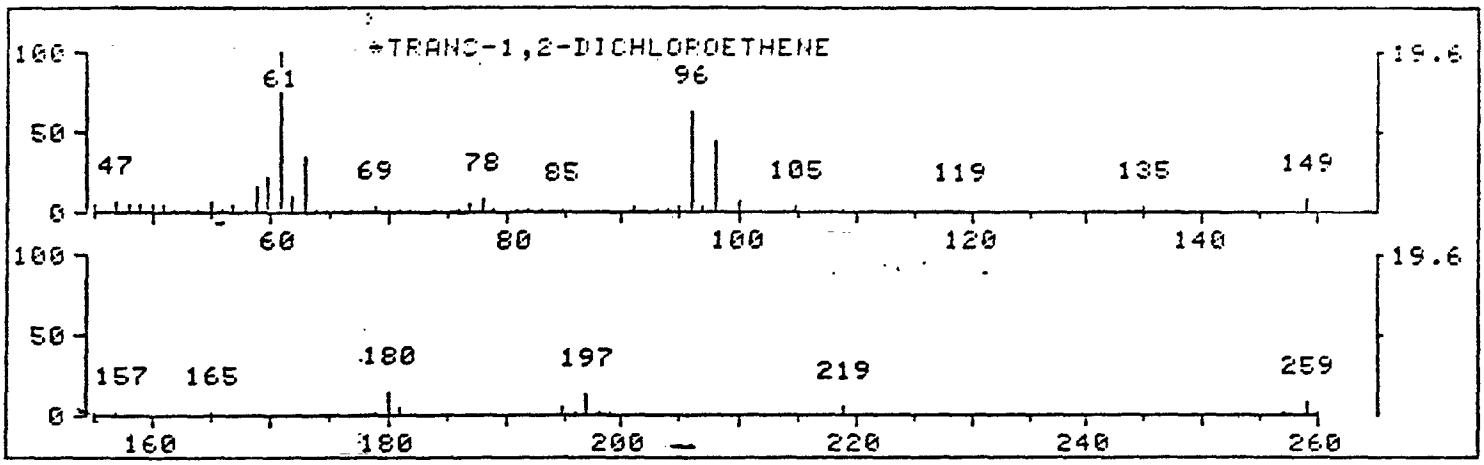
A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600 FRN 10317, CRN 10
CLC,041184,2240,SP1000,A/D=2,T=10 1790 SCANS (1790 SCANS, 53.57 MINS)
2.0 MASS RANGE= 44.0, 281.3 TOTAL ABUND= 10252160.

ORIGINAL

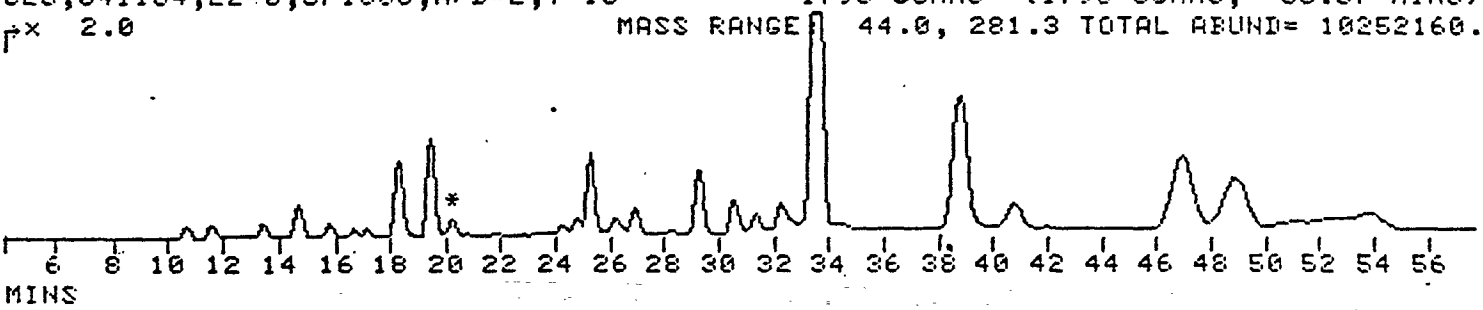
(red)



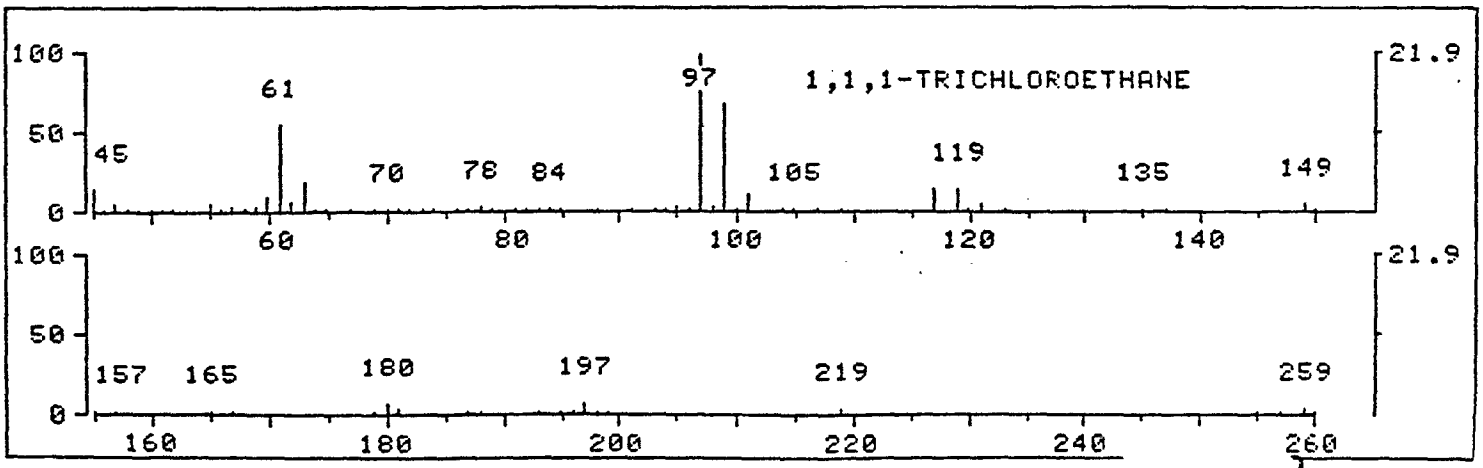
* 423 RET. TIME: 16.63 TOT ABUND= 3325. BASE PK/ABUND: 61.1/ 651.



A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600 FRN 10317, CRN 10
CLC,041184,2240,SP1000,A/D=2,T=10 1790 SCANS (1790 SCANS, 53.57 MINS)
2.0 MASS RANGE= 44.0, 281.3 TOTAL ABUND= 10252160.



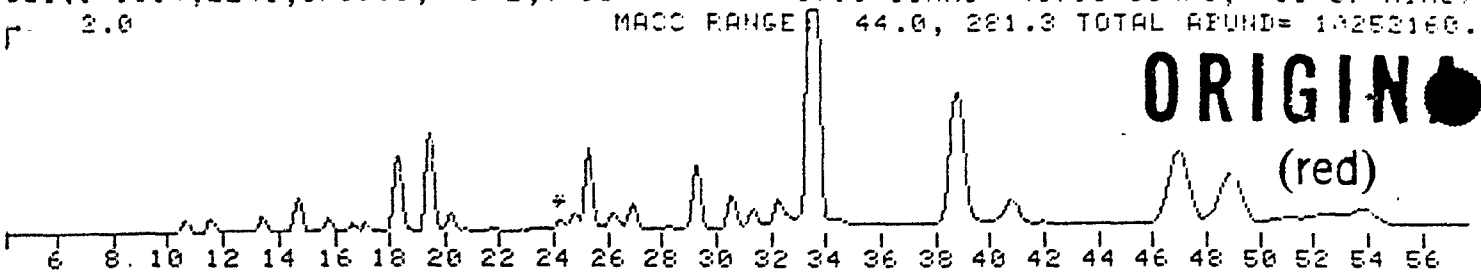
* 542 RET. TIME: 20.23 TOT ABUND= 6317. BASE PK/ABUND: 97.1/ 1386.



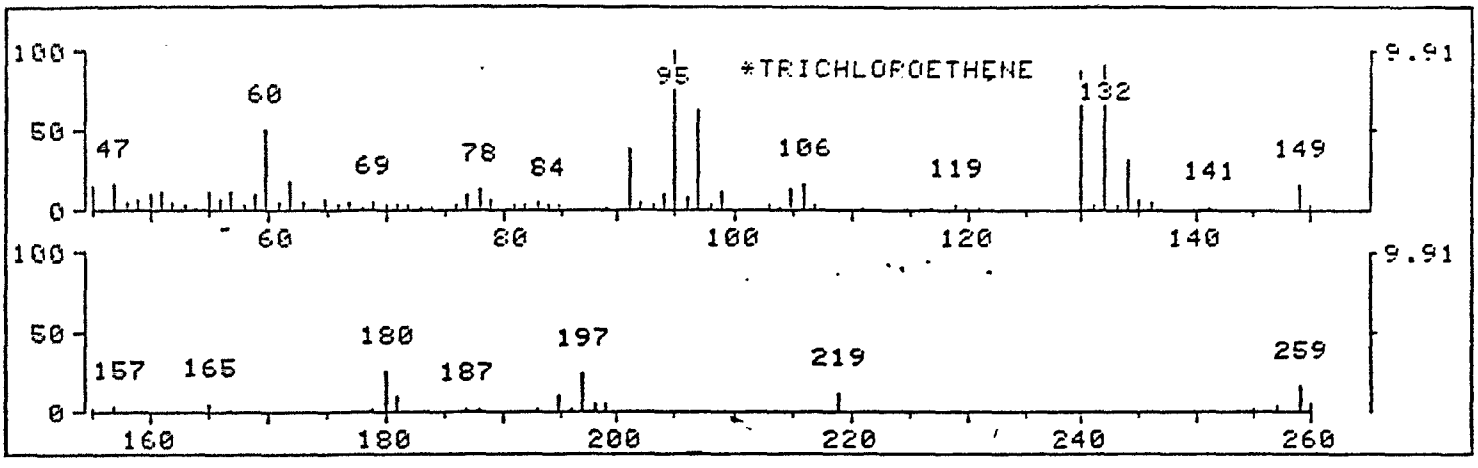
AR100318

A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600 FRN 10317, GRN 10
CLC,041184,2240,CP1000,A/D=2,T=10 1790 SCANS (1790 SCANS, 53.57 MINS)
2.0 MASS RANGE 44.0, 281.3 TOTAL ABUND= 10252160.

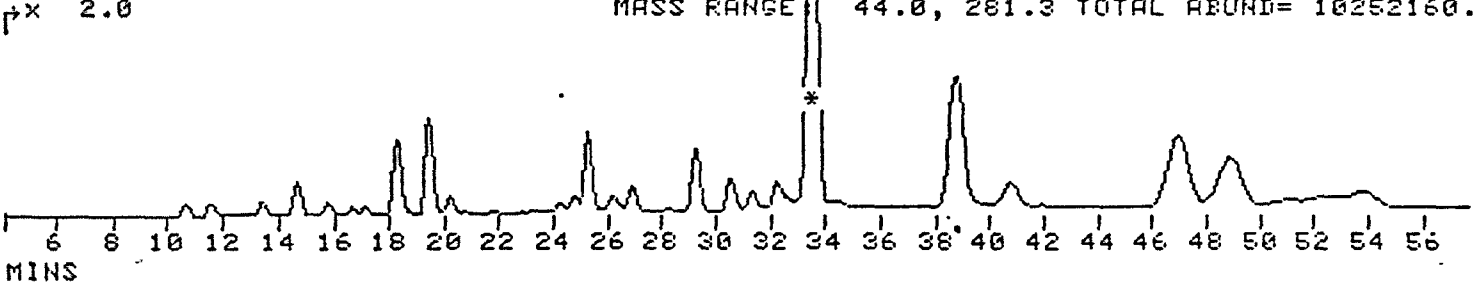
ORIGINAL (red)



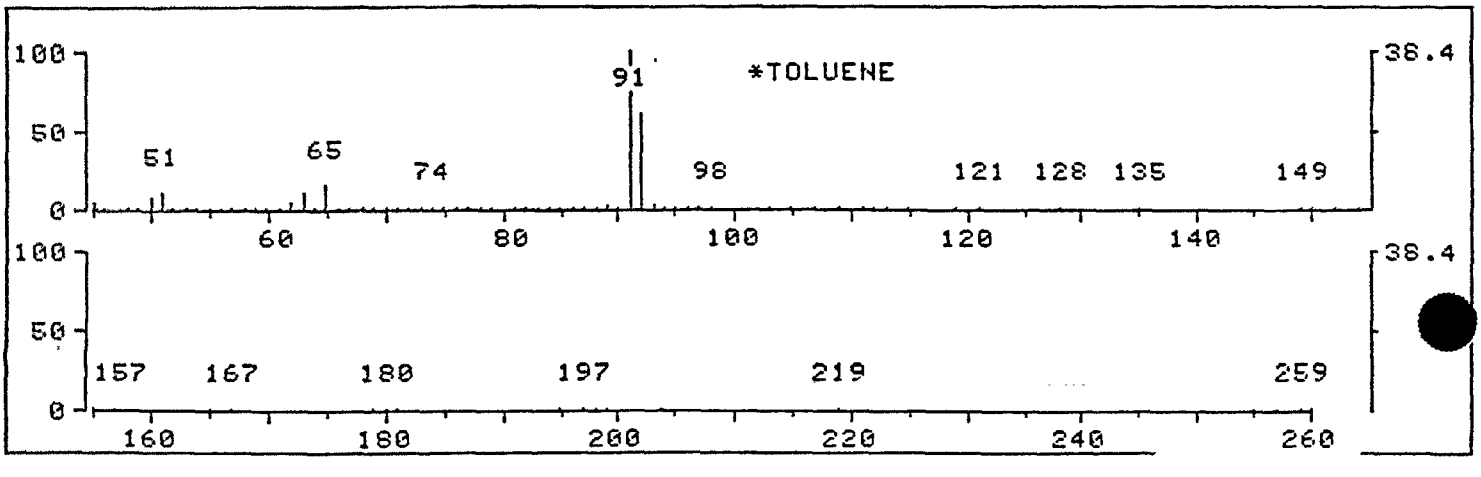
* 677 RET. TIME: 24.30 TOT ABUND= 4419. BASE PK/ABUND: 95.0/ 438.



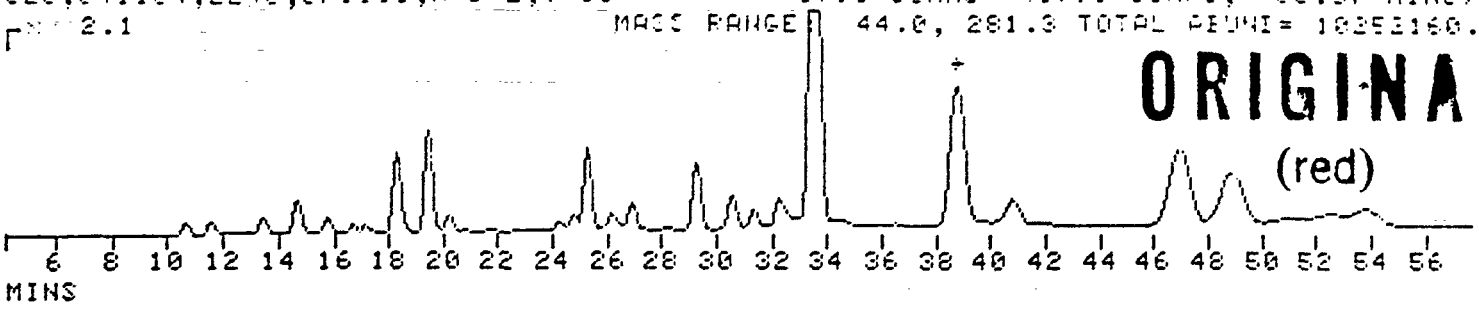
A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600 FRN 10317, GRN 10
CLC,041184,2240,SP1000,A/D=2,T=10 1790 SCANS (1790 SCANS, 53.57 MINS)
2.0 MASS RANGE 44.0, 281.3 TOTAL ABUND= 10252160.



* 984 RET. TIME: 33.52 TOT ABUND= 135035. BASE PK/ABUND: 91.2/ 51830.

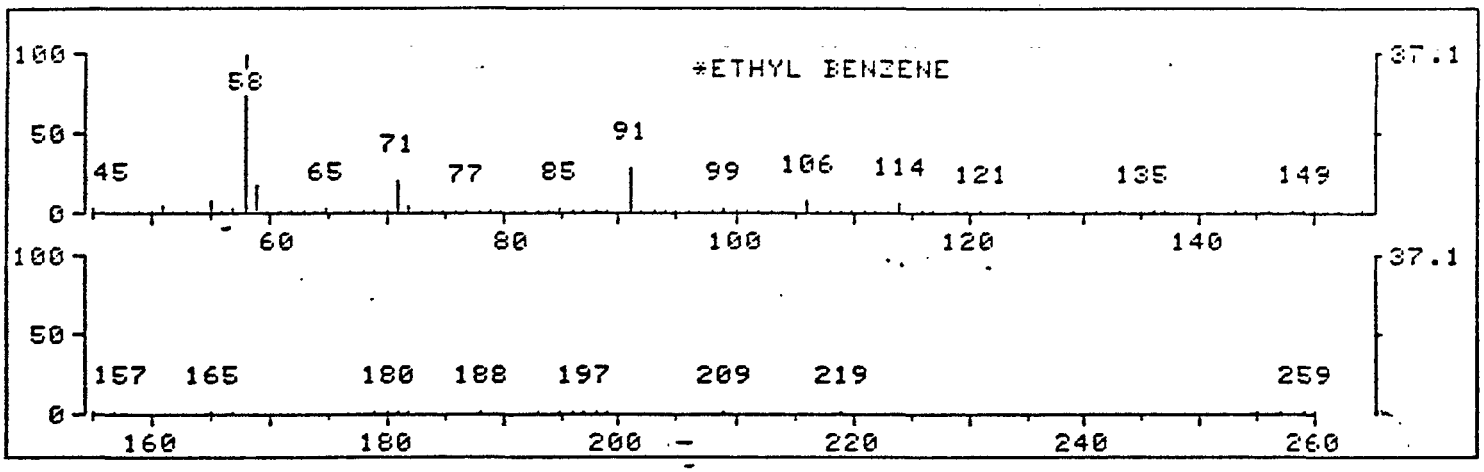


A4117,WESTON(2210131)+I.S.(25ML+5UL)E=2600
CLC,041184,2240,CF1000,A/D=2,T=10
ERN 10317. GRN 10
1790 SCANS (1790 SCANS, 56.5T MINS)
MASS RANGE 44.0, 281.3 TOTAL ABUNI= 10353160.



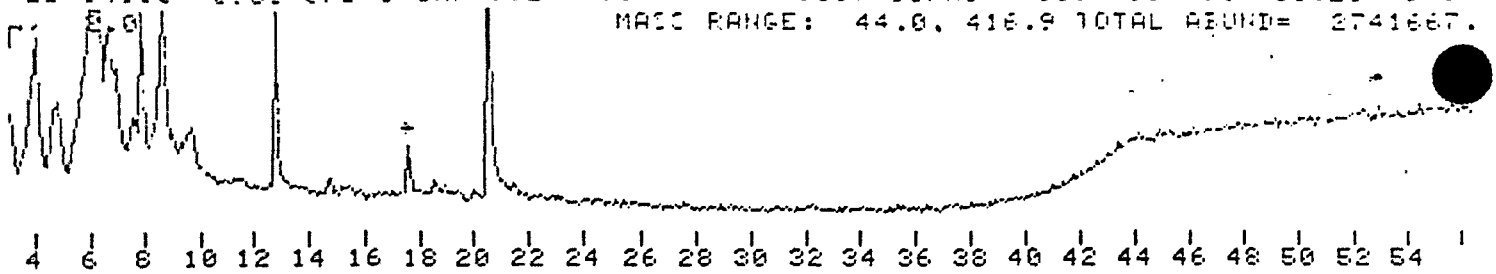
ORIGINAL
(red)

#1158 RET. TIME: 38.72 TOT ABUND= 41810. BASE PK/ABUND: 58.2/ 15520.



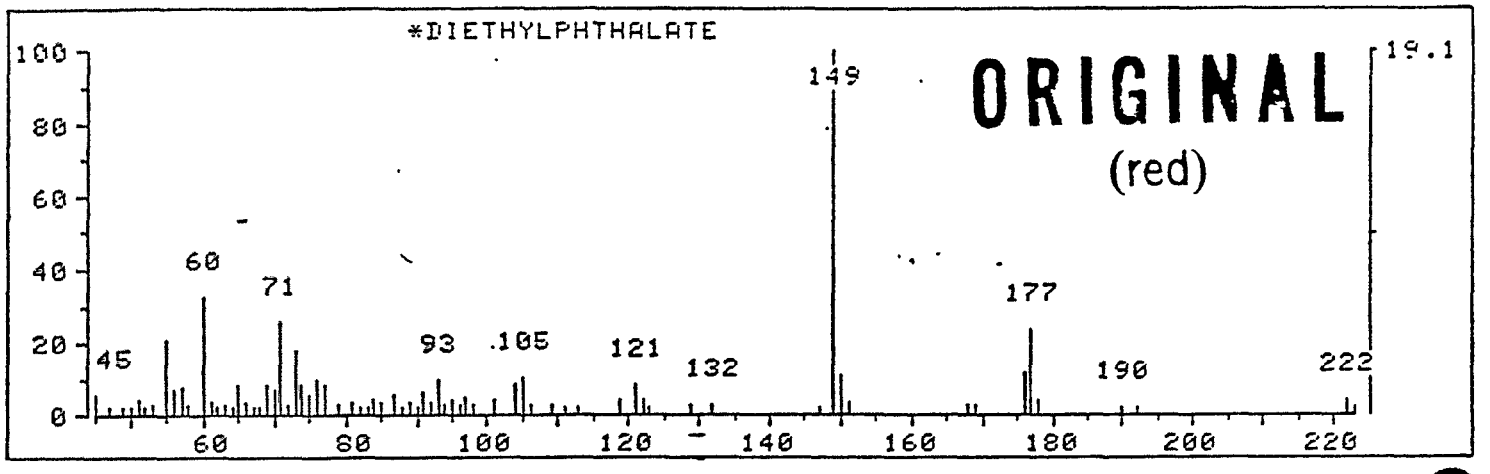
AR100320

A4118(WESTON 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20318, CRN 136
WLD 041184 0933 SPB-5 CAP COL T=10 1507 SCANS (1507 SCANS, 53.23 MINS)
MASS RANGE: 44.0, 416.9 TOTAL ABUND= 2741667.

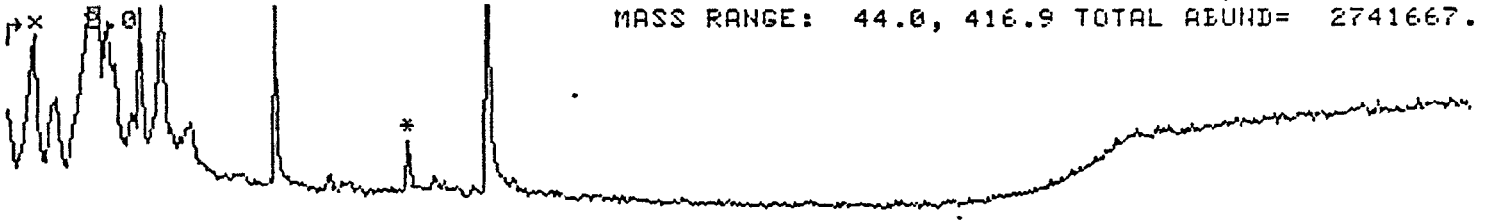


4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54
MINS

* 410 RET. TIME: 17.53 TOT ABUND= 2475. BASE PK/ABUND: 149.0/ 473.

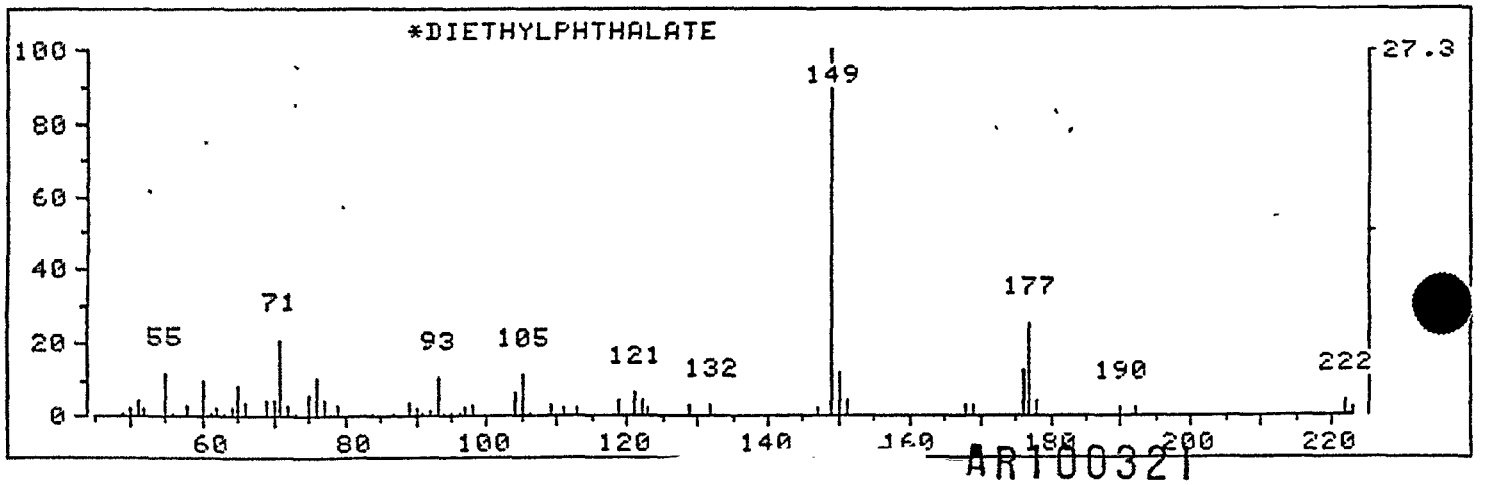


A4118(WESTON 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20318, CRN 136
WLD 041184 0933 SPB-5 CAP COL T=10 1507 SCANS (1507 SCANS, 53.23 MINS)
MASS RANGE: 44.0, 416.9 TOTAL ABUND= 2741667.

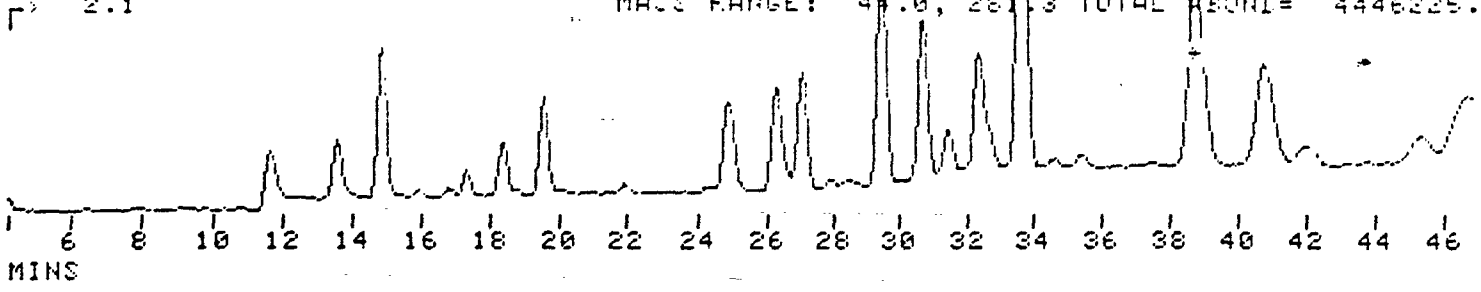


4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54
MINS

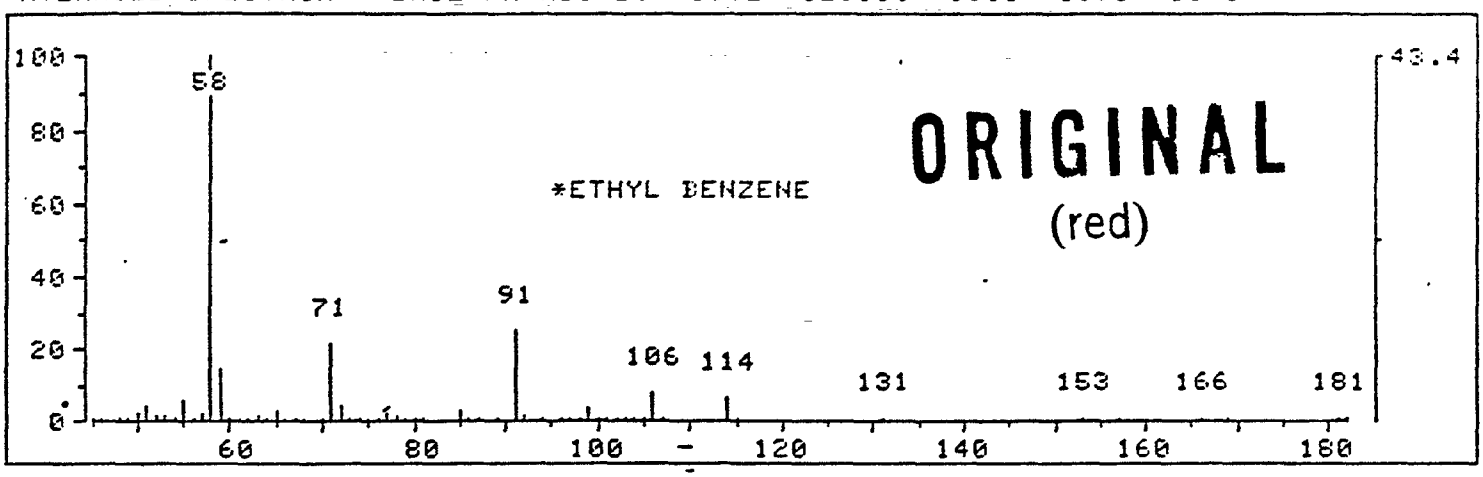
AVERAGED SPECTRUM * BASE PK/ABUND: 149.0/ 32000. + 410 -399



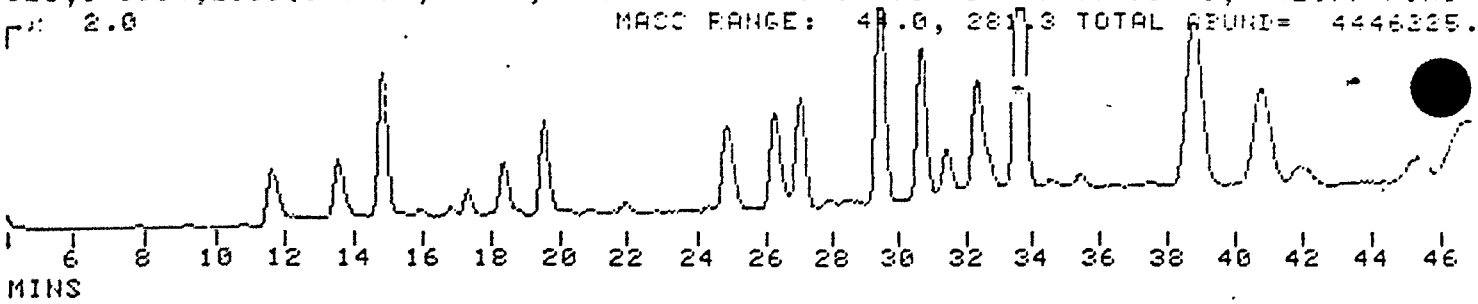
A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10016. CRN 11
CLC,041184,2130,CP1000,A ID=2,T=10 1425 SCANC (1425 SCANC, 42.77 MINS)
2.1 MASS RANGE: 40.0, 261.3 TOTAL ABUNI= 4446835.



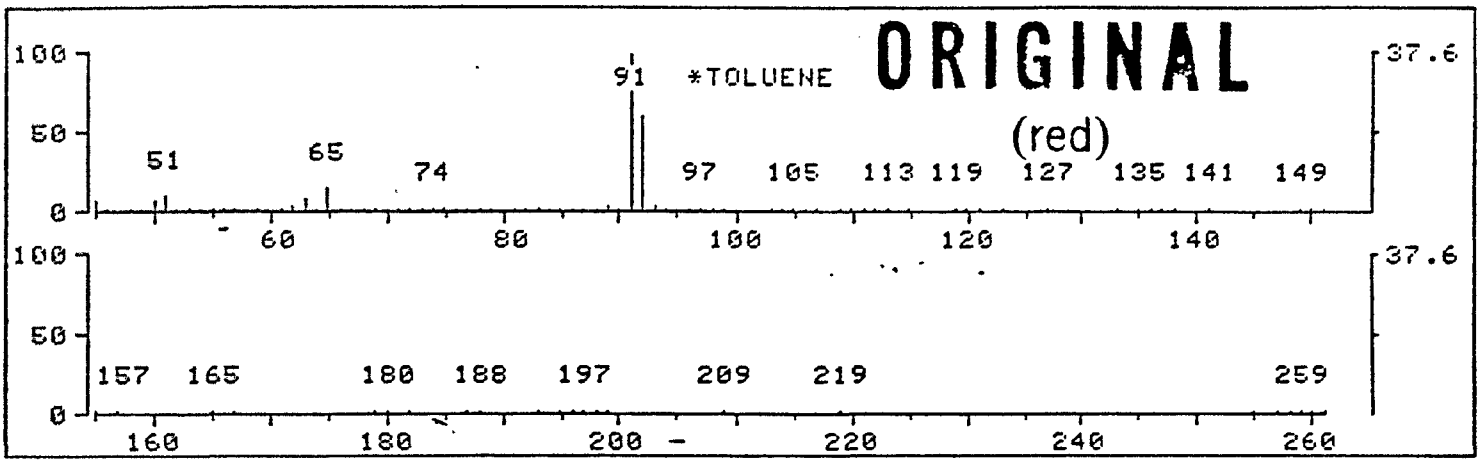
AVERAGED SPECTRUM * BASE PK/ABUND: 58.2/ 32000. +1155 -1191 -1145



A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
2.0 MASS RANGE: 4[illegible].0, 28[illegible].3 TOTAL ABUND= 4446225.

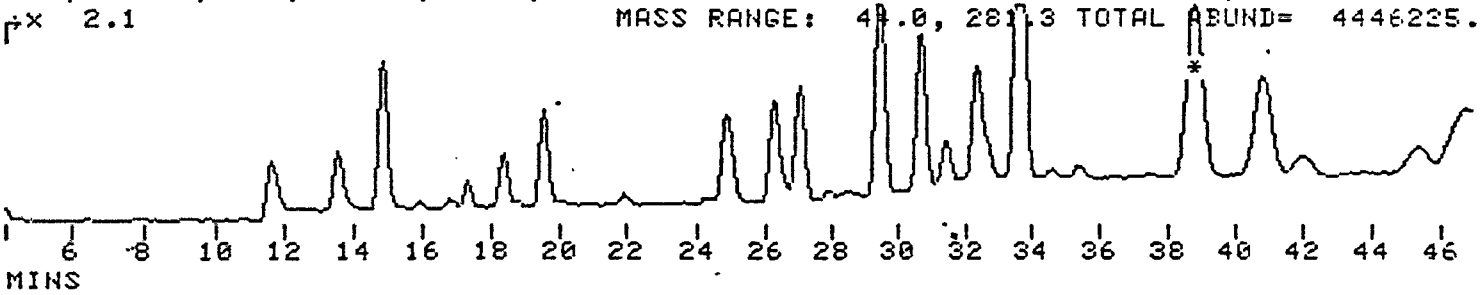


* 983 RET. TIME: 33.58 TOT ABUND= 28158. BASE PK/ABUND: 91.2/ 10594.

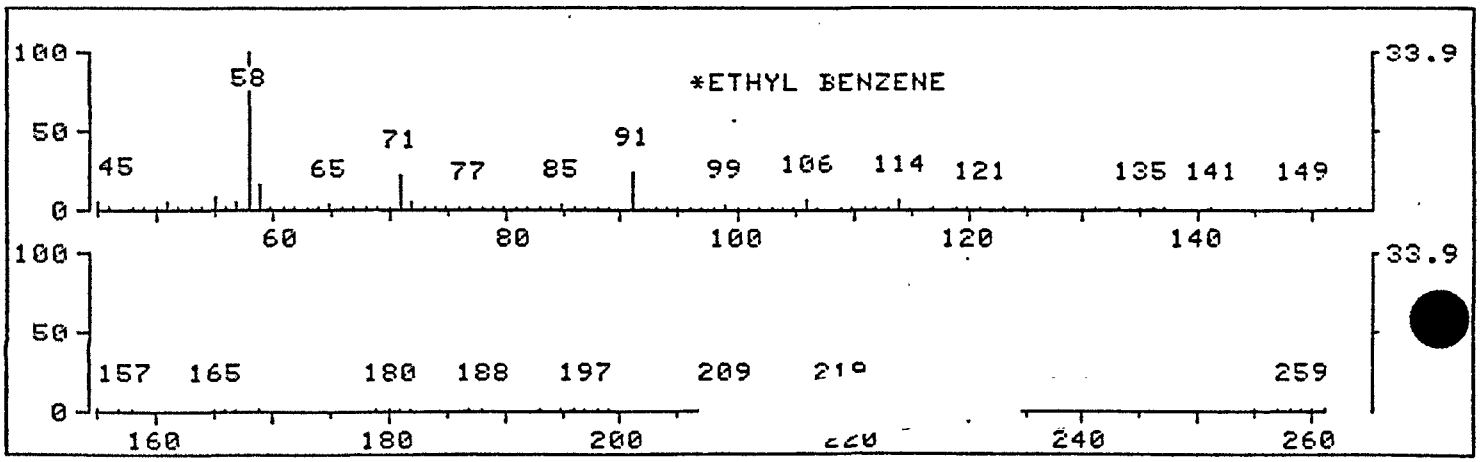


ORIGINAL
(red)

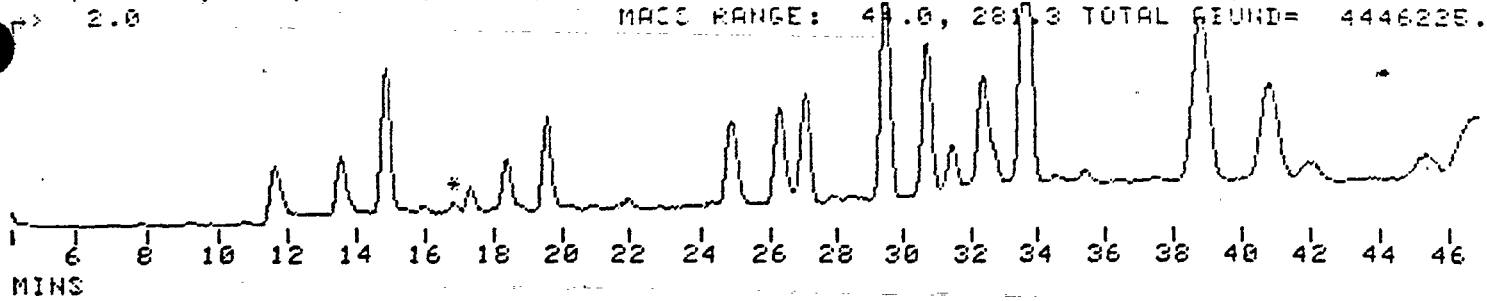
A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
2.1 MASS RANGE: 4[illegible].0, 28[illegible].3 TOTAL ABUND= 4446225.



*1155 RET. TIME: 38.78 TOT ABUND= 14309. BASE PK/ABUND: 58.2/ 4857.



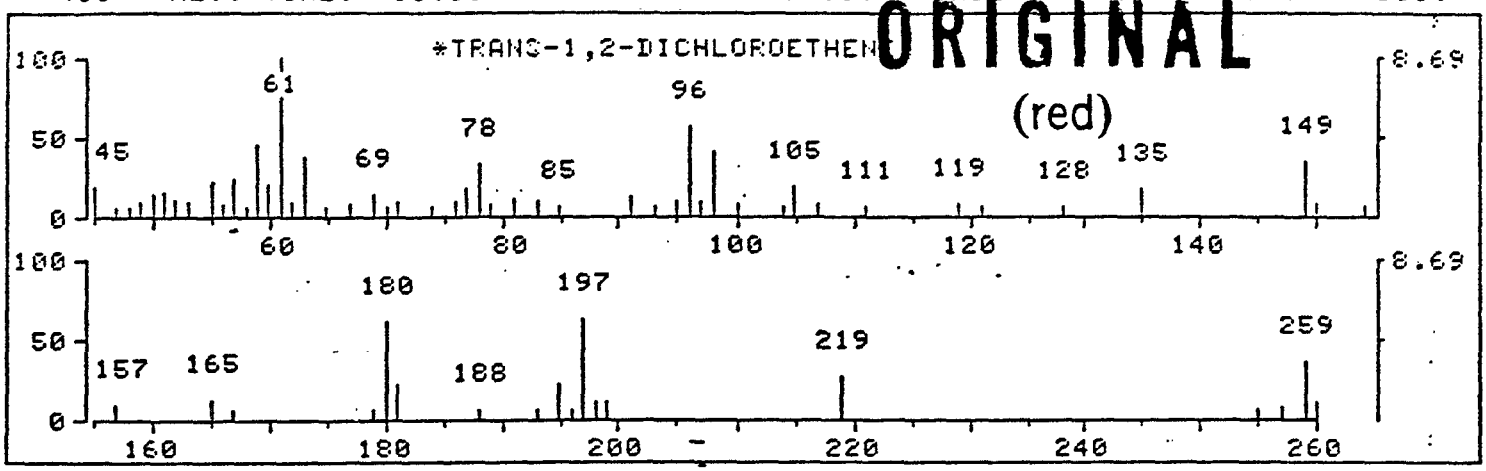
A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
→ 2.0 MASS RANGE: 45.0, 281.3 TOTAL ABUND= 4446225.



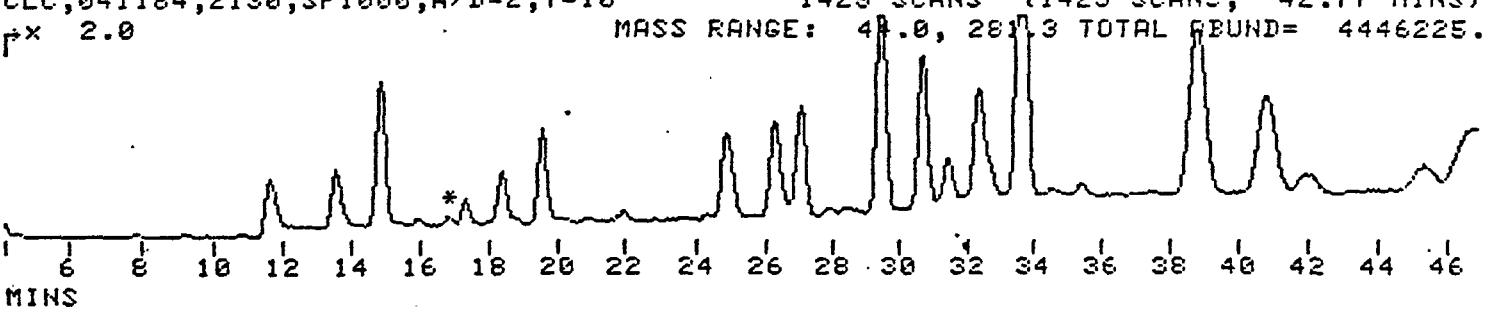
* 431 RET. TIME: 16.80 TOT ABUND= 1818. BASE PK/ABUND: 61.2/ 158.

ORIGINAL

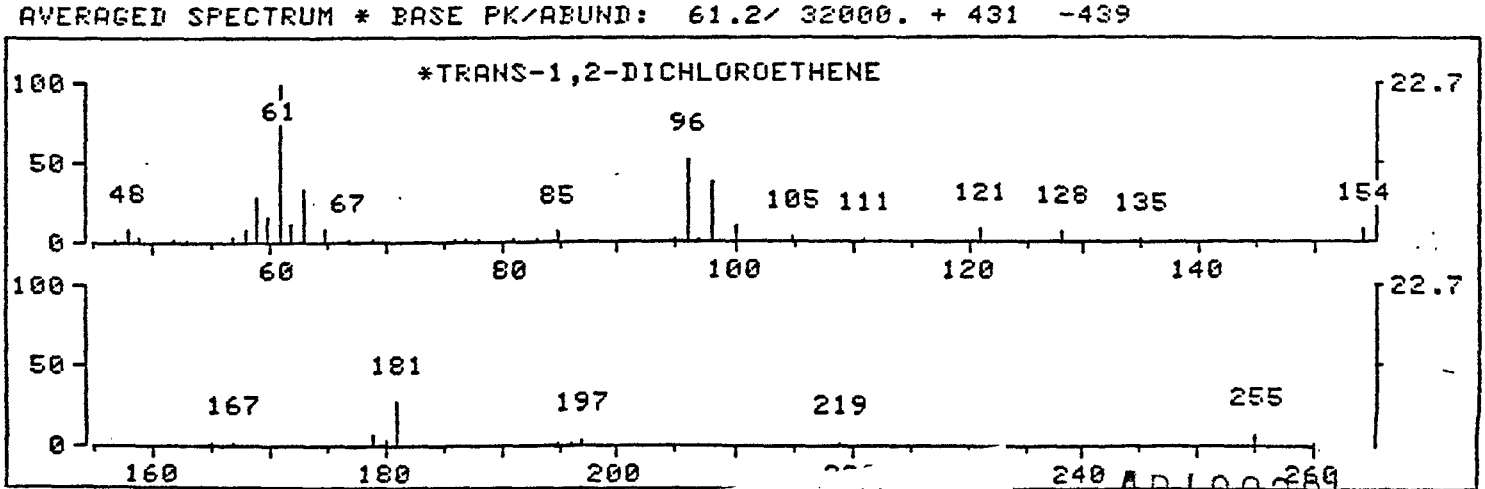
(red)



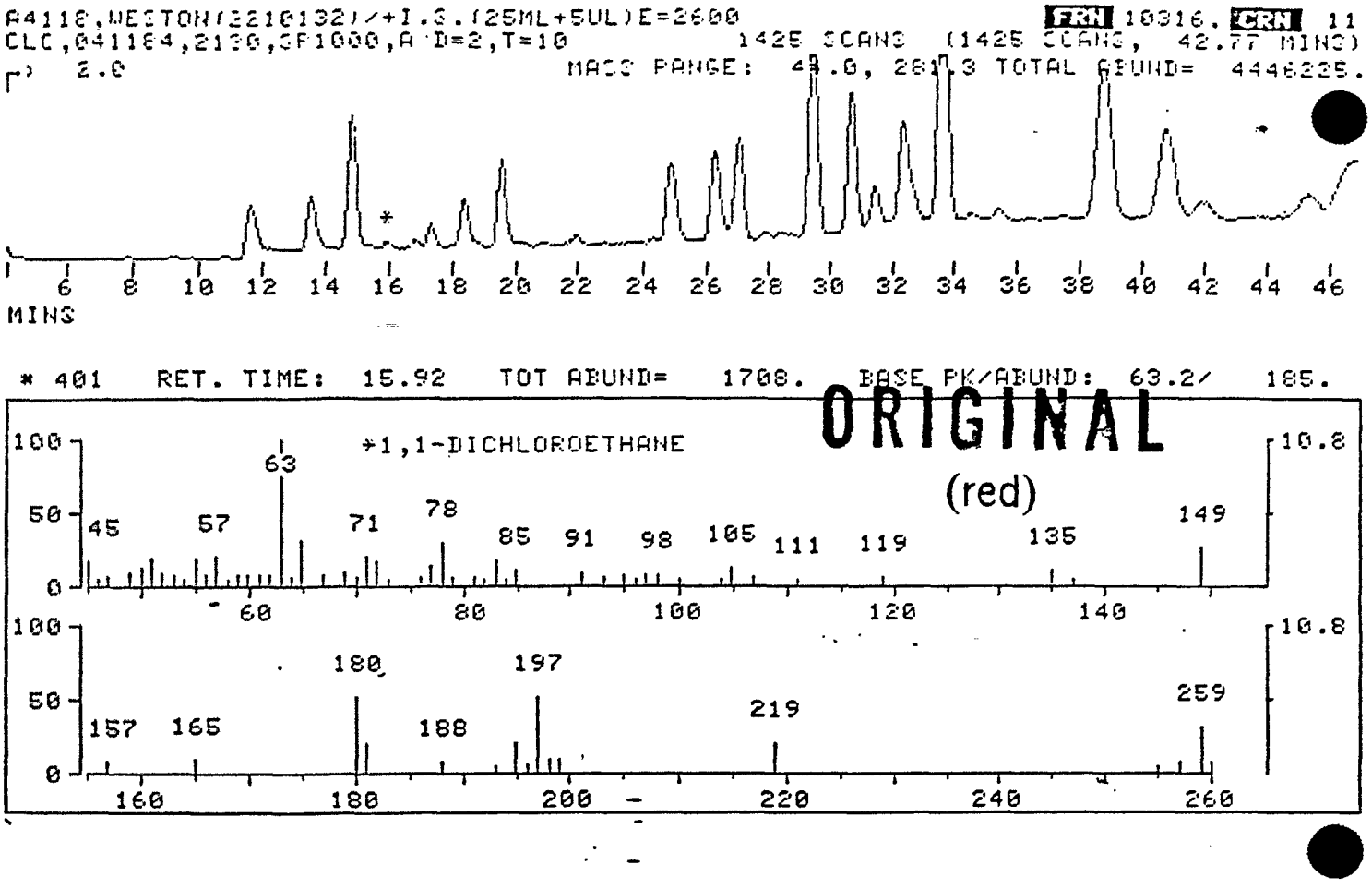
A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
→ 2.0 MASS RANGE: 45.0, 281.3 TOTAL ABUND= 4446225.

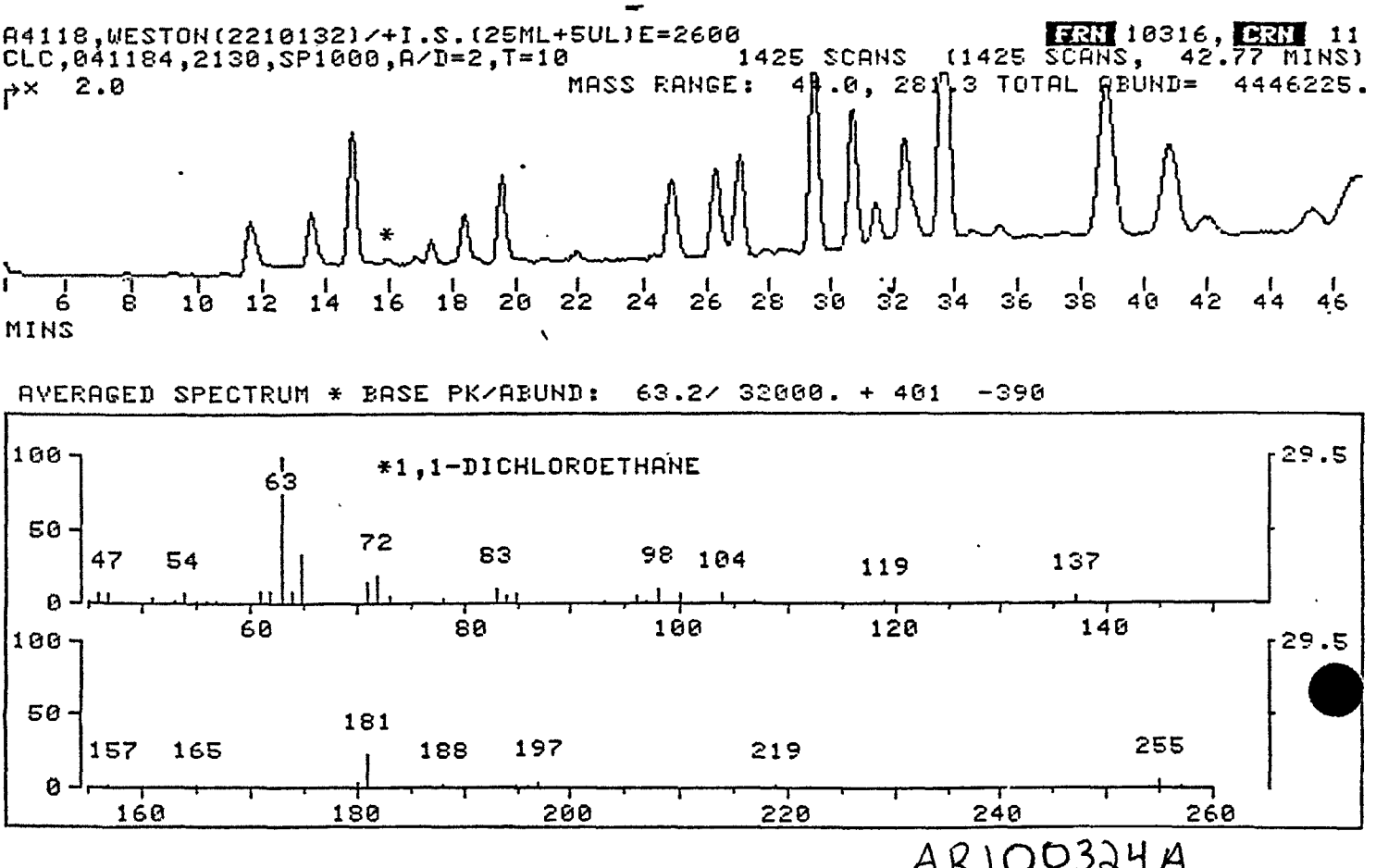


AVERAGED SPECTRUM * BASE PK/ABUND: 61.2/ 32000. + 431 -439



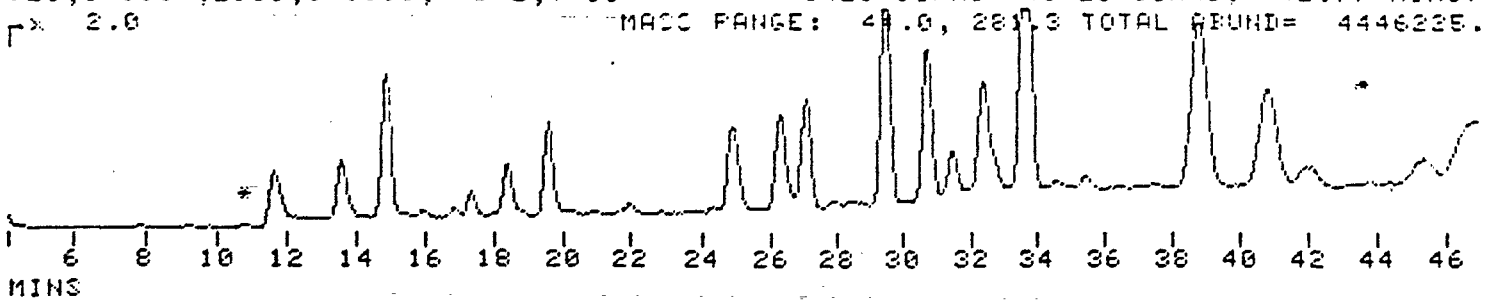
AR100324


A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600
FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10
1425 SCANS (1425 SCANS, 42.77 MINS)
2.0
MASS RANGE: 48.0, 281.3 TOTAL ABUND= 4446225.
MINS
* 401 RET. TIME: 15.92 TOT ABUND= 1708. BASE PK/ABUND: 63.2/ 185.
*1,1-DICHLOROETHANE
ORIGINAL
(red)

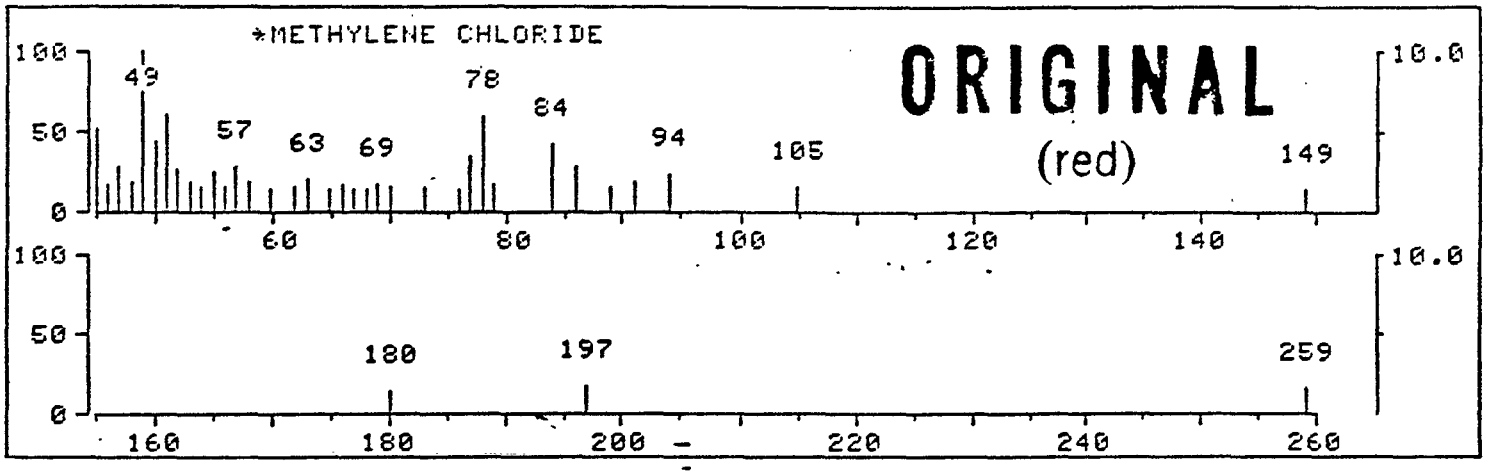

A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600
FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10
1425 SCANS (1425 SCANS, 42.77 MINS)
2.0
MASS RANGE: 48.0, 281.3 TOTAL ABUND= 4446225.
MINS
AVERAGED SPECTRUM * BASE PK/ABUND: 63.2/ 32000. + 401 -390
*1,1-DICHLOROETHANE

AR100324A

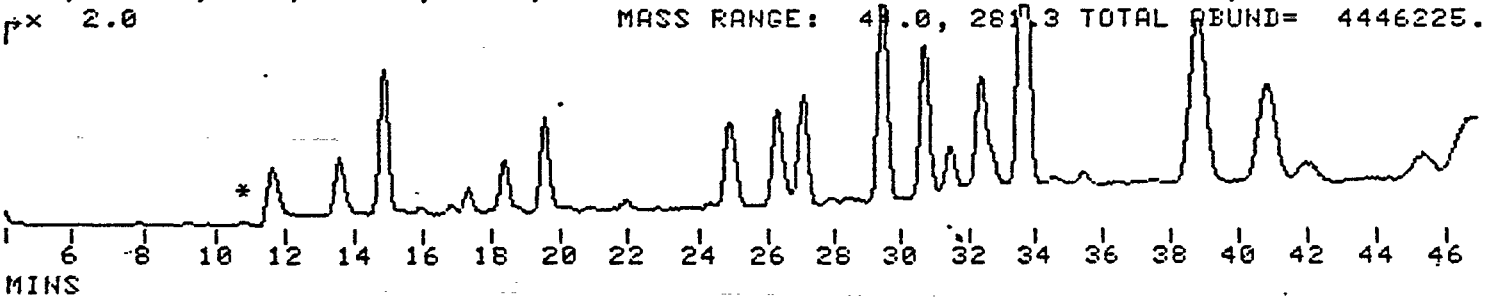
A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
2.0 MASS RANGE: 4[illegible].0, 281.3 TOTAL ABUND= 4446225.



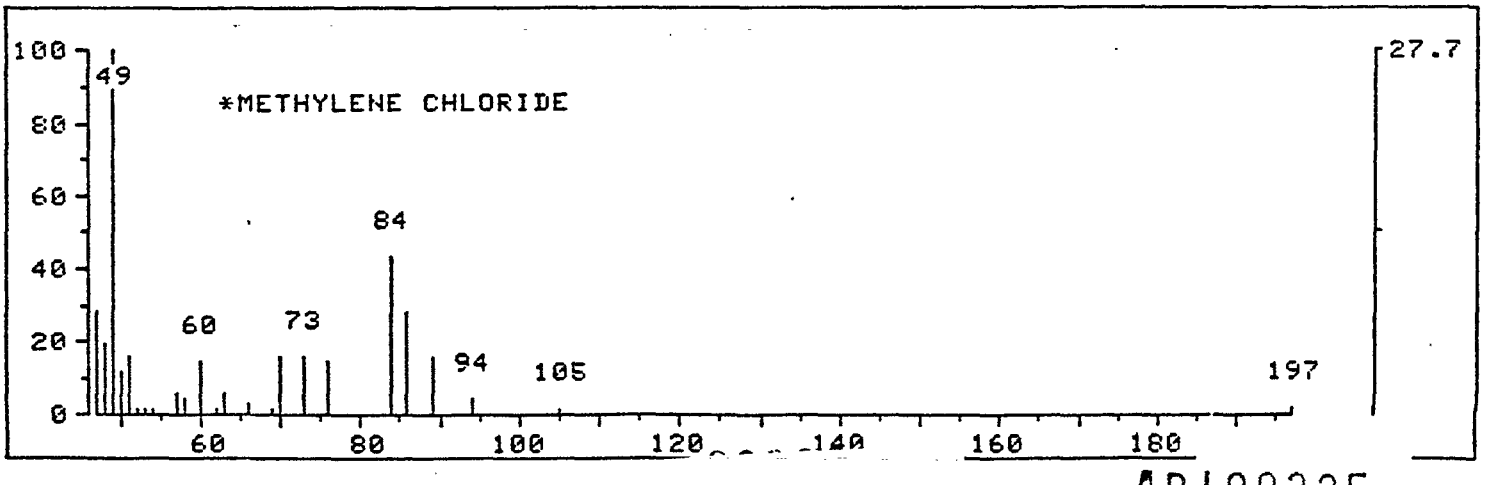
229 RET. TIME: 10.80 TOT ABUND= 660. BASE PK/ABUND: 49.1/ 67.



A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
2.0 MASS RANGE: 4[illegible].0, 281.3 TOTAL ABUND= 4446225.



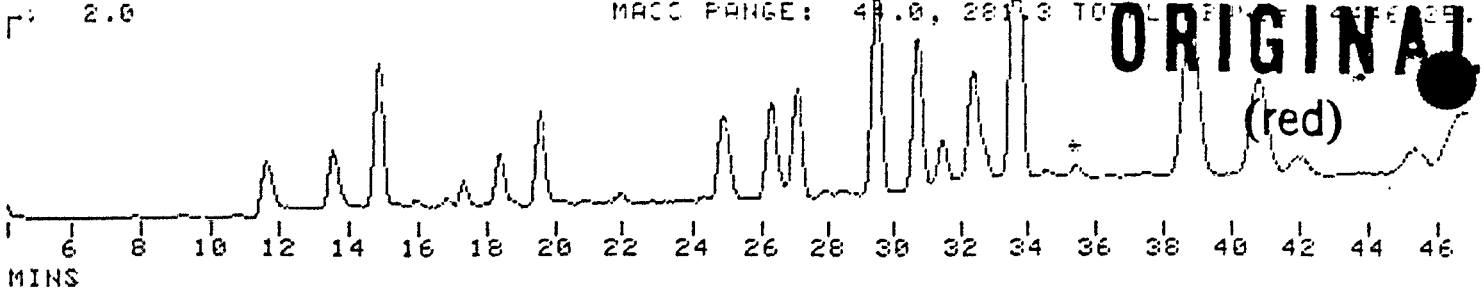
AVERAGED SPECTRUM * BASE PK/ABUND: 49.1/ 32000. + 229 -205



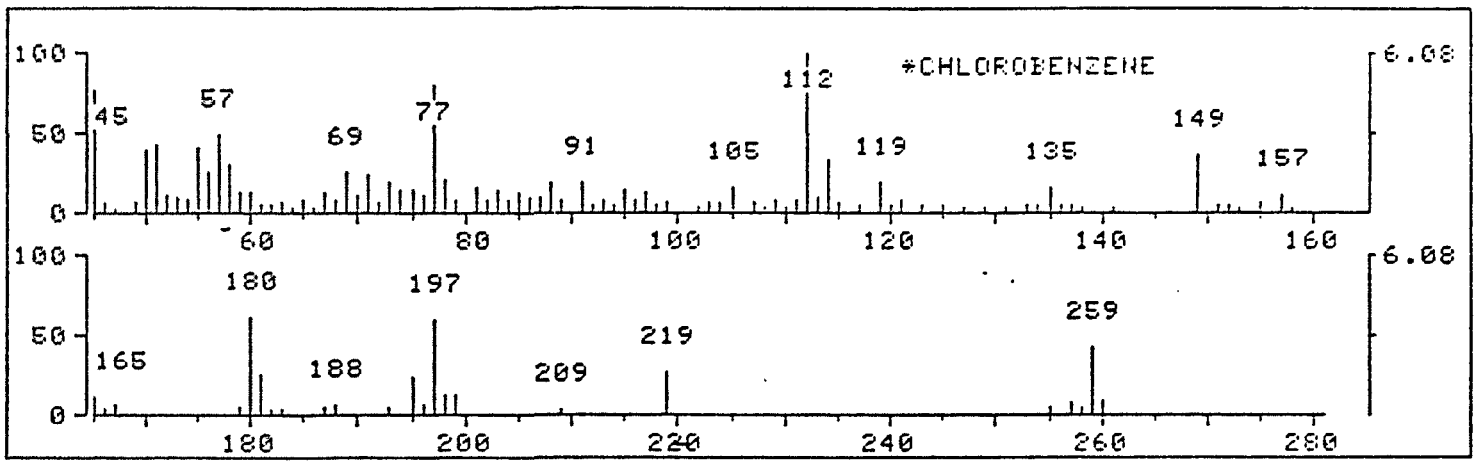
ARI00325

A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
2.0 MASS RANGE: 45.0, 281.3 TOTAL ABUND= 4446225.

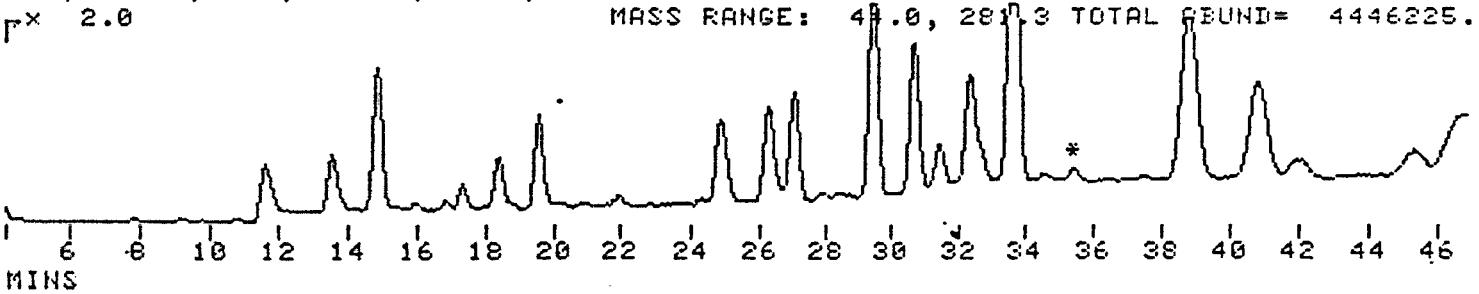
ORIGINAL (red)



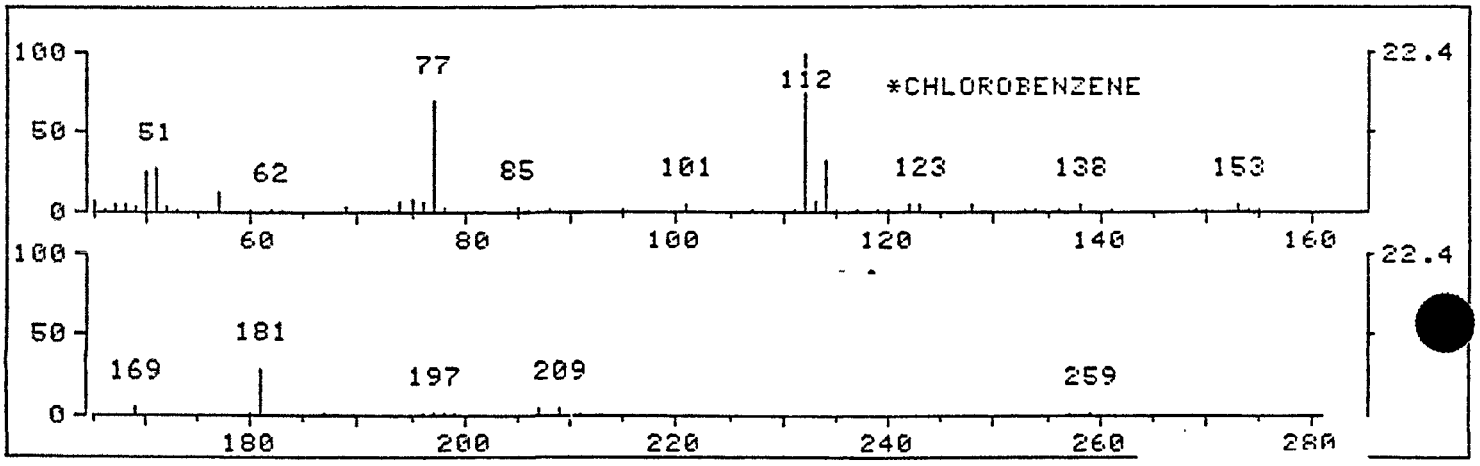
*1042 RET. TIME: 35.37 TOT ABUND= 3997. BASE PK/ABUND: 112.1/ 243.



A4118,WESTON(2210132)/+I.S.(25ML+5UL)E=2600 FRN 10316, CRN 11
CLC,041184,2130,SP1000,A/D=2,T=10 1425 SCANS (1425 SCANS, 42.77 MINS)
2.0 MASS RANGE: 45.0, 281.3 TOTAL ABUND= 4446225.



AVERAGED SPECTRUM * BASE PK/ABUND: 112.1/ 32000. +1045 -1032



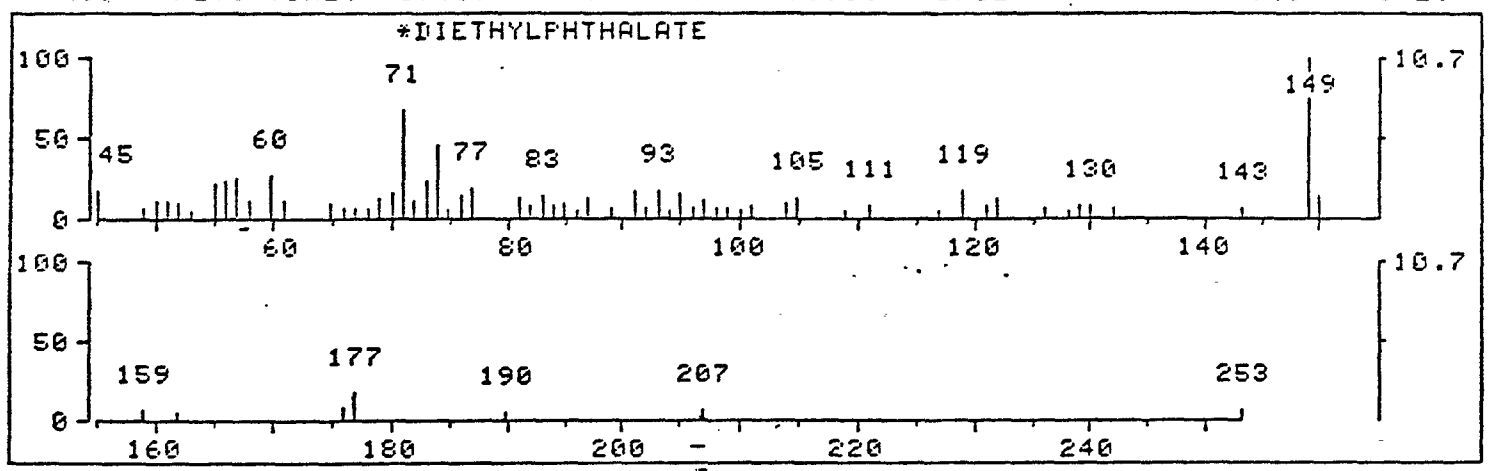
A4119(WESTON 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20320, CRN 137
WLD 041184 1153 SPB-5 CAP COL T=10 1515 SCANS (1515 SCANS, 53.93 MINS)
MASS RANGE: 44.0, 419.8 TOTAL ABUND= 2705388.

ORIGINAL

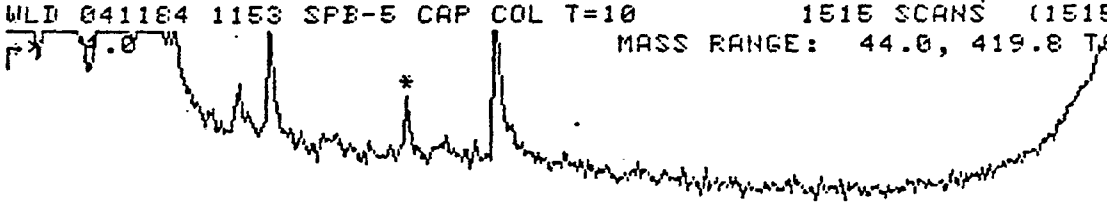
(red)

4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56
MINS

* 409 RET. TIME: 17.60 TOT ABUND= 1601. BASE PK/ABUND: 149.0/ 172.

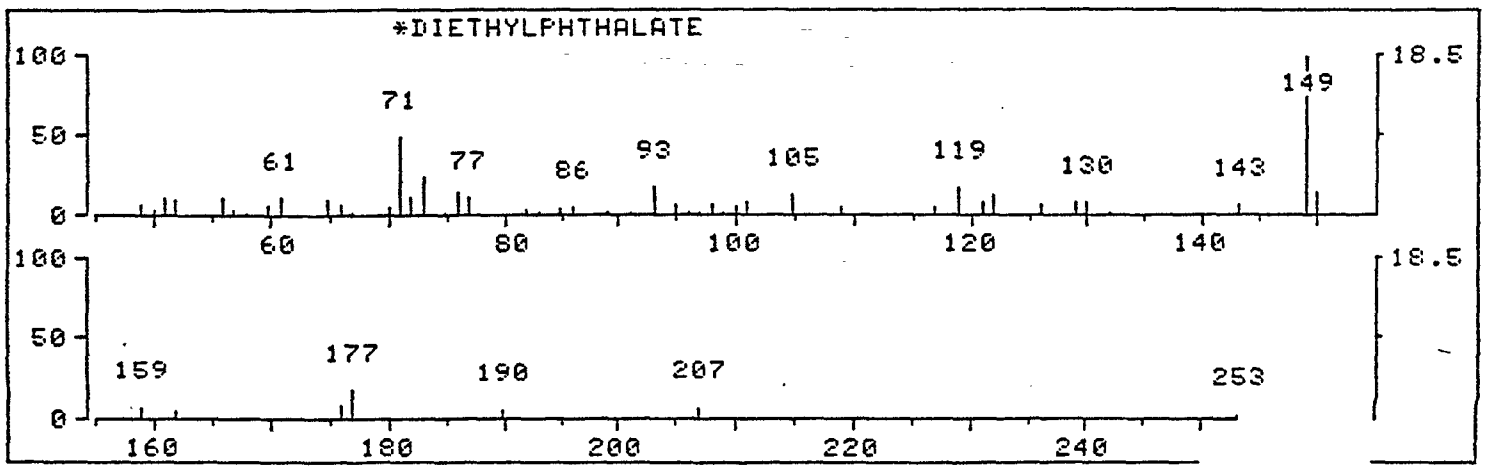


A4119(WESTON 1000ML/1ML 4.0UL INJ+4.0UL I.S.)(E=2200,A/D=2) FRN 20320, CRN 137
WLD 041184 1153 SPB-5 CAP COL T=10 1515 SCANS (1515 SCANS, 53.93 MINS)
MASS RANGE: 44.0, 419.8 TOTAL ABUND= 2705388.



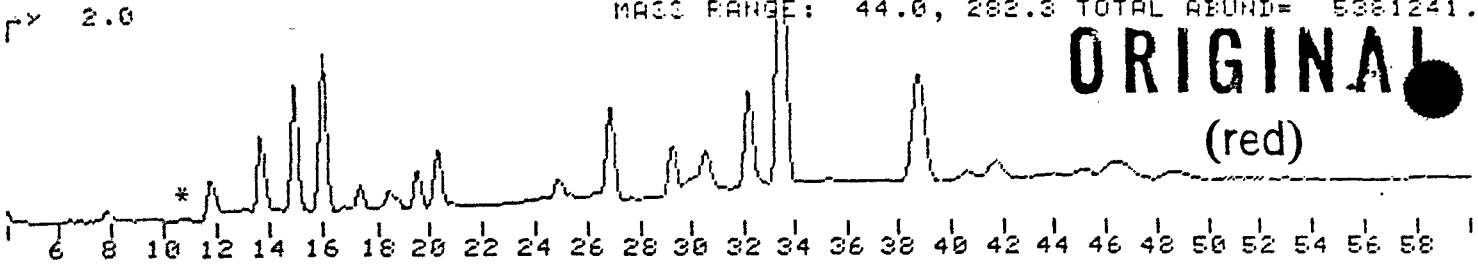
4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56
MINS

AVERAGED SPECTRUM * BASE PK/ABUND: 149.0/ 32000. + 409 -399

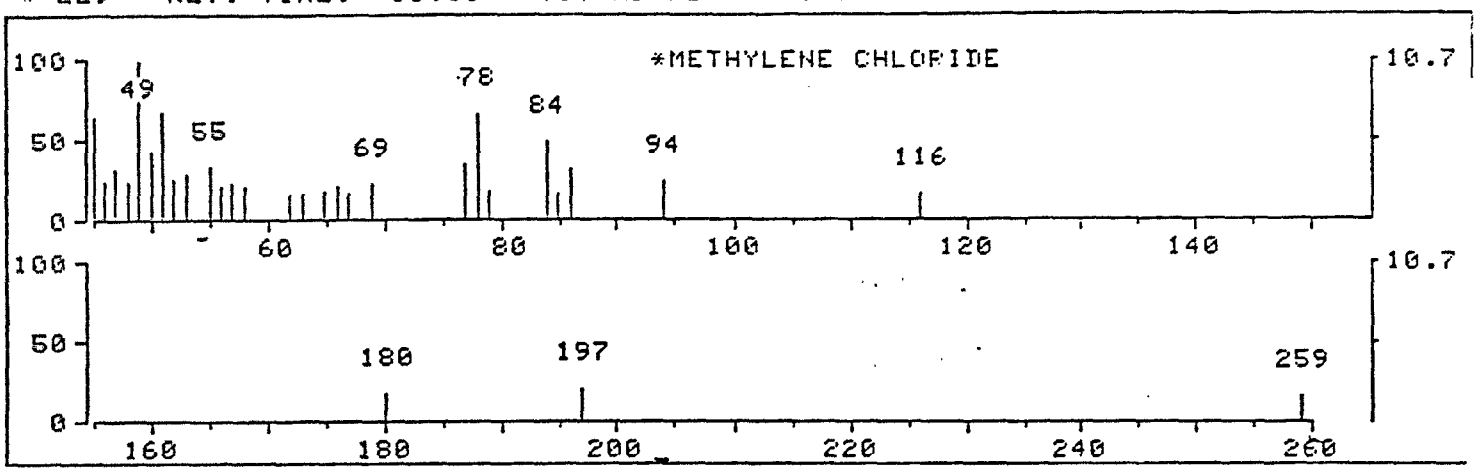


A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, CRN 11
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.
2.0

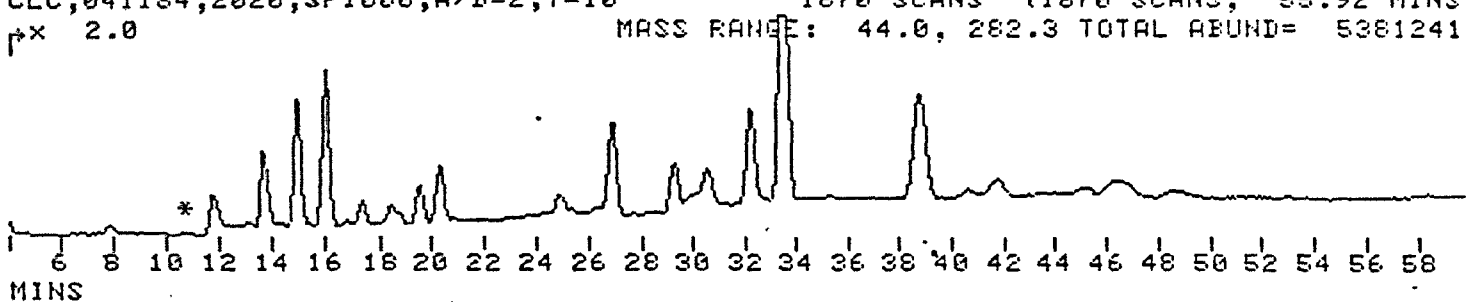
ORIGINAL (red)



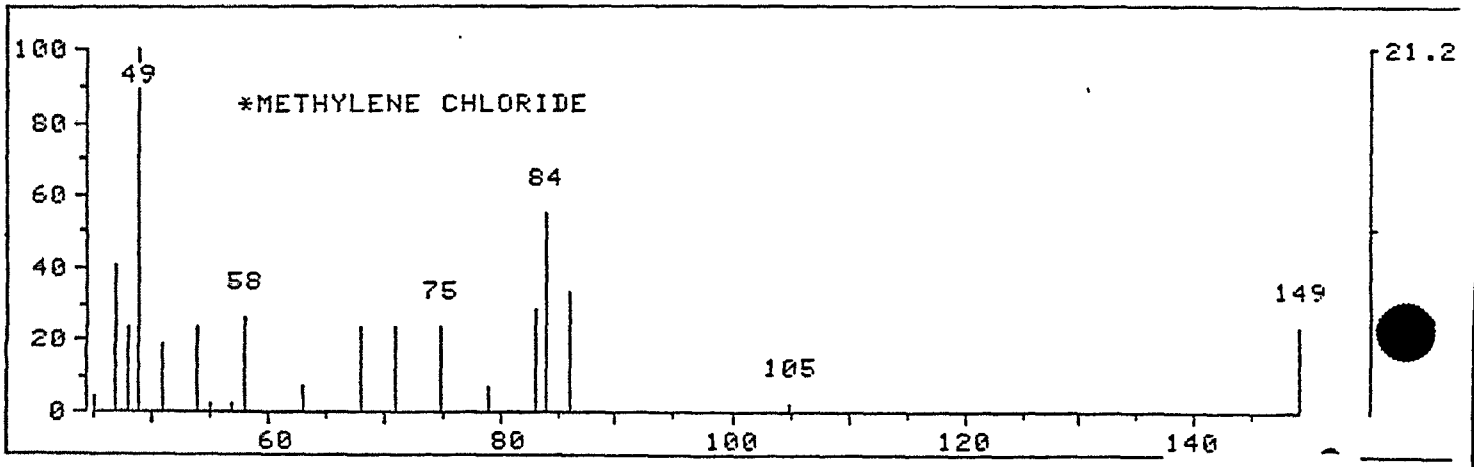
* 229 RET. TIME: 10.80 TOT ABUND= 549. BASE PK/ABUND: 49.1/ 59.



A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, CRN 11
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241
2.0

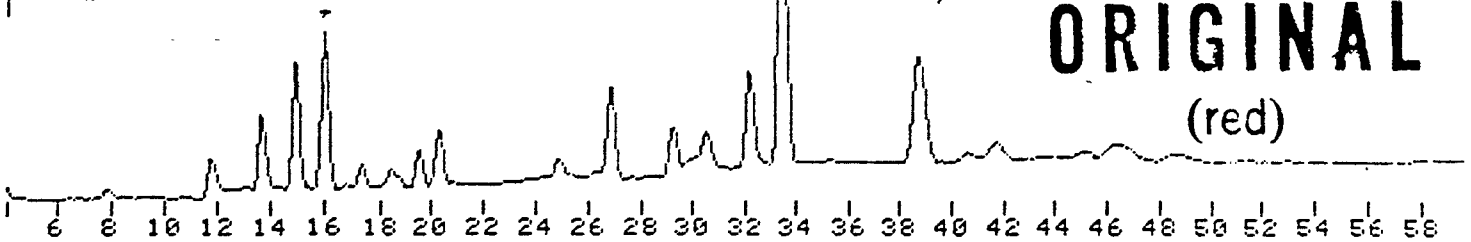


AVERAGED SPECTRUM * BASE PK/ABUND: 49.1/ 32000. + 226 -202

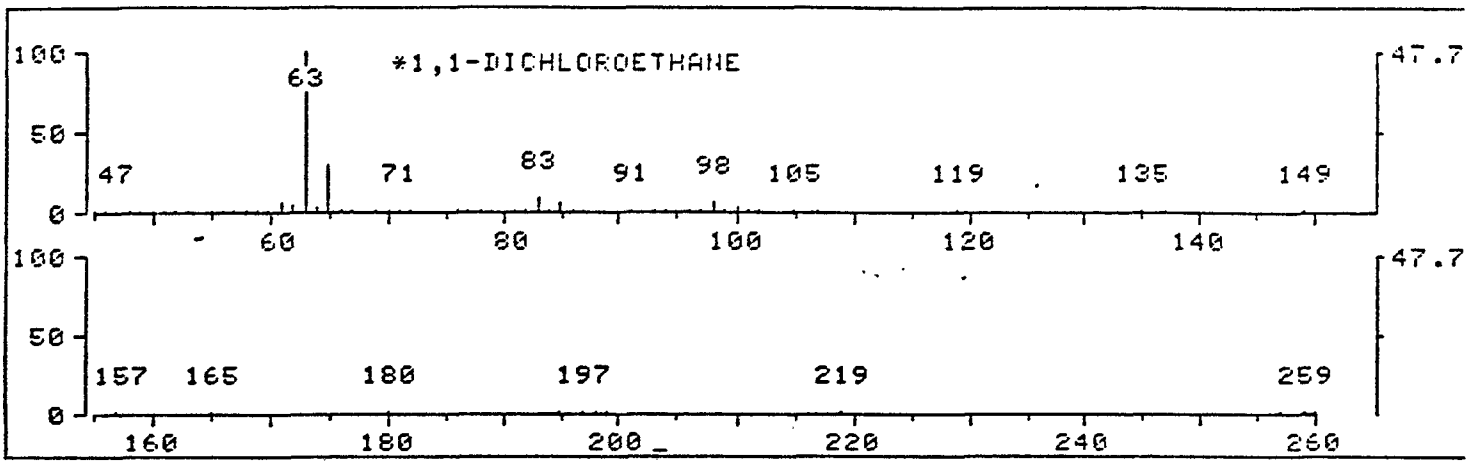


A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, SCRN 1
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS
X 2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241

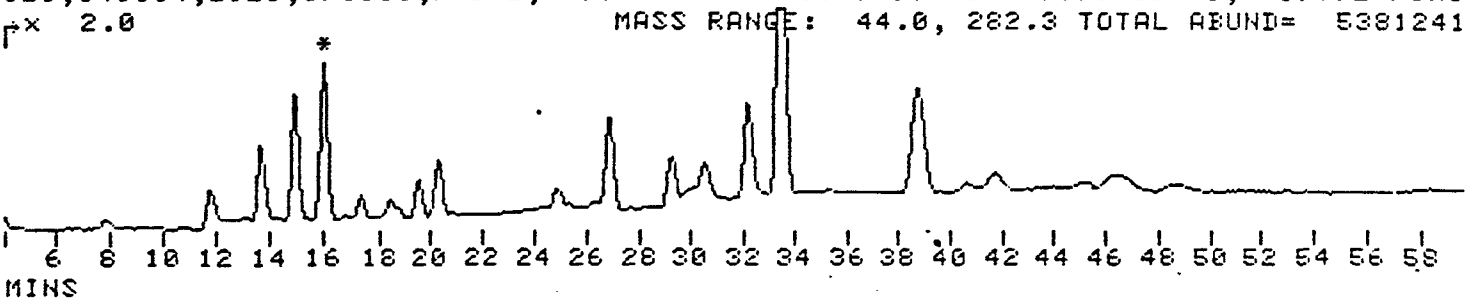
ORIGINAL
(red)



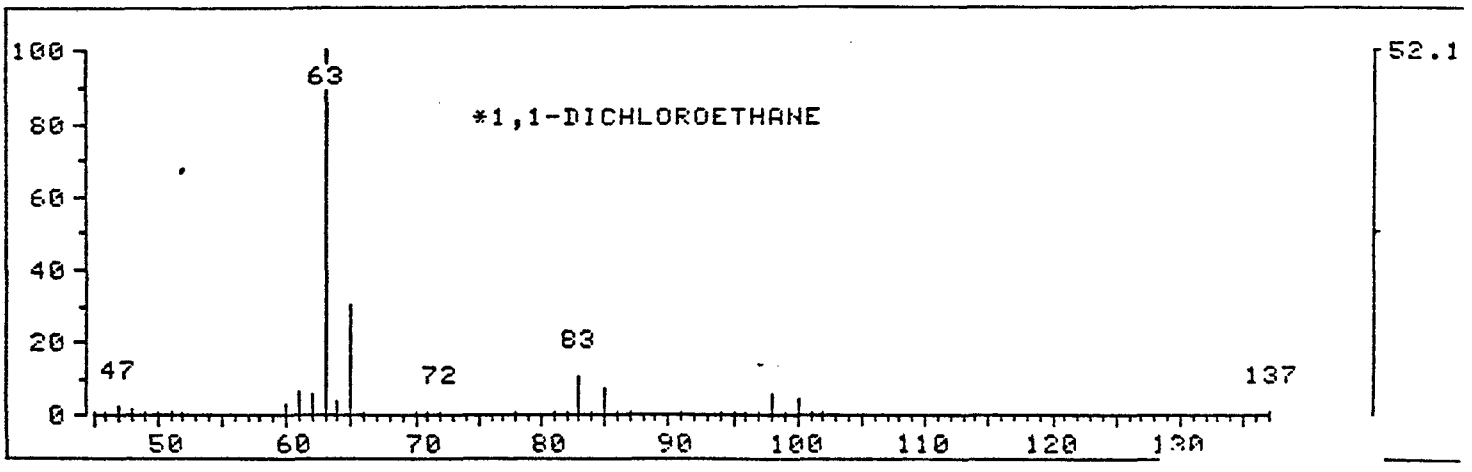
404 RET. TIME: 15.95 TOT ABUND= 12131. BASE PK/ABUND: 63.2/ 5792.



A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, SCRN 1
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS
X 2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241

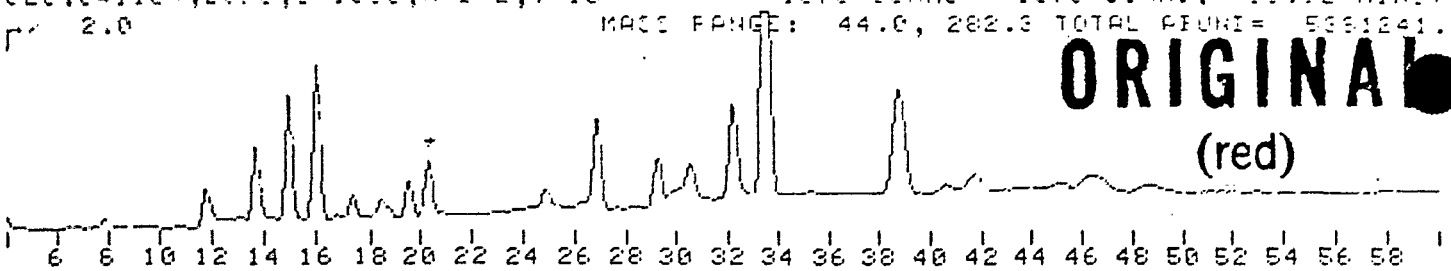


AVERAGED SPECTRUM * BASE PK/ABUND: 63.2/ 32000. + 404 -428

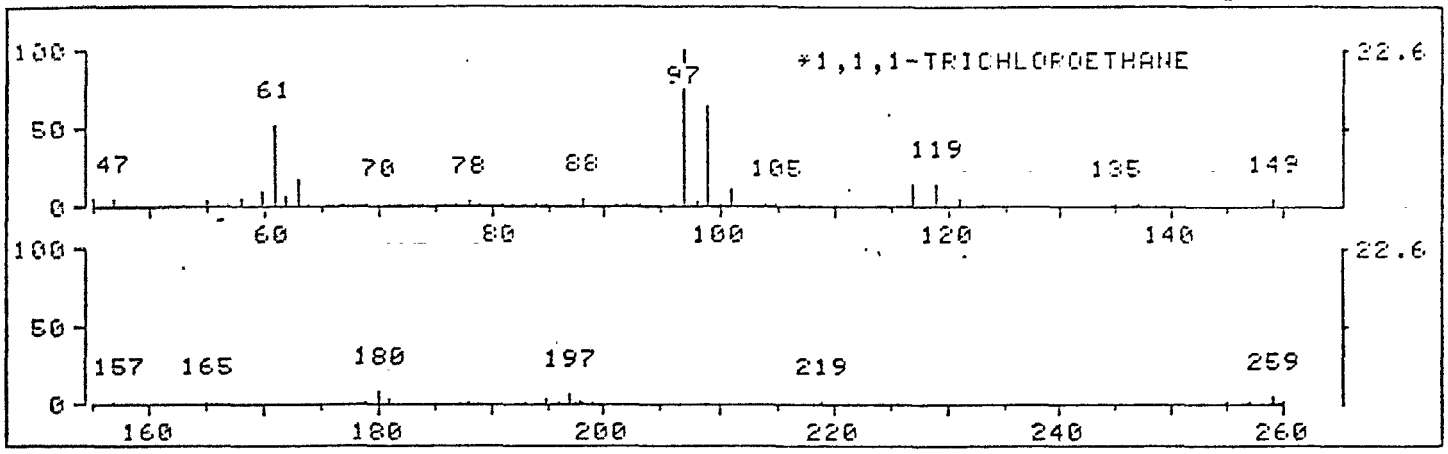


A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, SCRN 11
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.

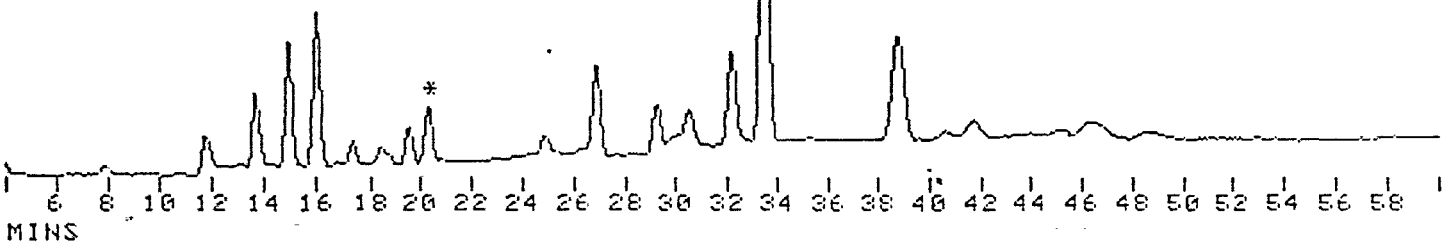
ORIGINAL
(red)



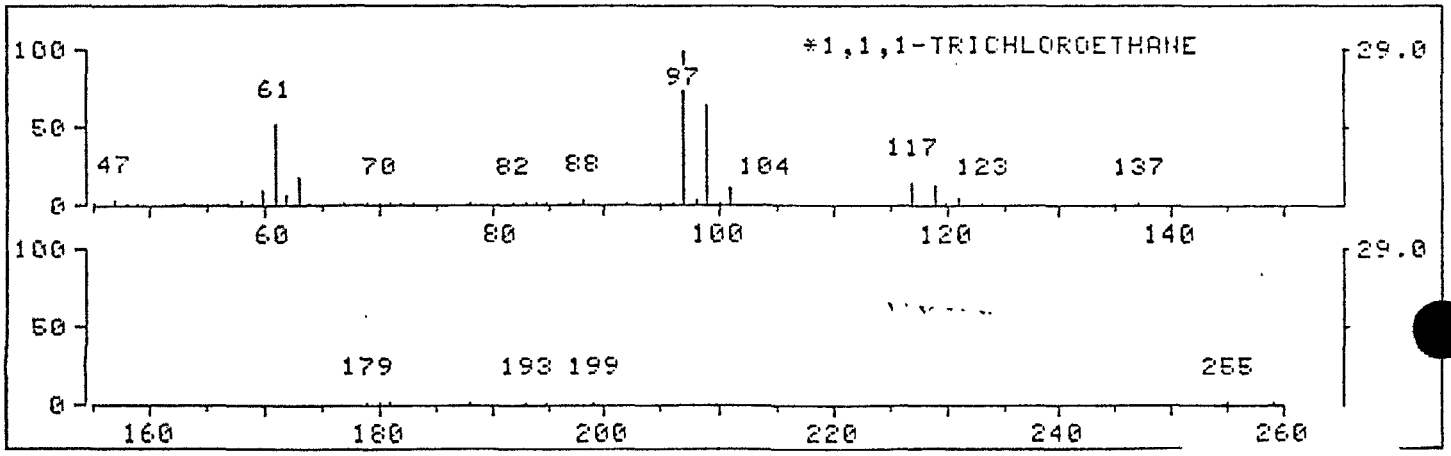
* 549 RET. TIME: 20.27 TOT ABUND= 5502. BASE PK/ABUND: 97.1/ 1241.



A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, SCRN 11
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.



AVERAGED SPECTRUM * BASE PK/ABUND: 97.1/ 32000. + 549 -563



CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ORIGINAL
(red)

INORGANICS ANALYSIS DATA SHEET

CLIENT ROY F. WESTON

ANALYSIS DATE April 13, 1984

LAB SAMPLE I.D. NO. A4120 (#2210134)

CASE NO.

PART I. (Elements to be Identified and Measured)

		mg/l			mg/l
1.	ANTIMONY	0.015	8.	MERCURY	<0.0002
2.	ARSENIC	<0.002	9.	NICKEL	<0.05
3.	BERYLLIUM	<0.01	10.	SELENIUM	<0.005
4.	CADMIUM	<0.01	11.	SILVER	<0.01
5.	CHROMIUM (Total)	<0.1	12.	THALLIUM	<0.1
6.	COPPER	<0.01	13.	ZINC	0.01
7.	LEAD	<0.05			

PART II. (Elements to be Identified and Measured)

		mg/l
1.	PHENOLS, (Total)	0.05
2.	CYANIDE	<0.01
3.	ASBESTOS	N.R.

PART III. (Additional Parameters Requested)

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

COMMENTS: N.R. = Not Requested

(4) - Base of Spoi

AR100331

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13,

ANALYSIS NO.: A4119

CHART NO.: FRN: 20320

ORIGINAL

(red)

PESTICIDES

EPA #		ug/l
(89P)	Aldrin	N.D.
(90P)	Dieldrin	N.D.
(91P)	Chlordane	N.D.
(92P)	4,4'-DDT	N.D.
(93P)	4,4'-DDE	N.D.
(94P)	4,4'-DDD	N.D.
(95P)	α -Endosulfan	N.D.
(96P)	β -Endosulfan	N.D.
(97P)	Endosulfan sulfate	N.D.
(98P)	Endrin	N.D.
(99P)	Endrin aldehyde	N.D.
(100P)	Heptachlor	N.D.
(101P)	Heptachlor epoxide	N.D.
(102P)	α -BHC	N.D.

PESTICIDES

EPA #		ug/l
(103P)	β -BHC	N.D.
(104P)	δ -BHC	N.D.
(105P)	γ -BHC	N.D.
(106P)	PCB-1242	N.D.
(107P)	PCB-1254	N.D.
(108P)	PCB-1221	N.D.
(109P)	PCB-1232	N.D.
(110P)	PCB-1248	N.D.
(111P)	PCB-1260	N.D.
(112P)	PCB-1016	N.D.
(113P)	Toxaphene	N.D.

DIOXINS

EPA #		
(129B)	2,3,7,8-TCDD (Screen Only)	**

NOTES AND COMMENTS:

**NOT PRESENT

*Not analyzed for

N.D. = 5.0 ug/l for Base Neutrals, Pesticides, PCB's

N.D. = 0.5 ug/l for Volatile Fraction

Richard W Lynch for TFC

Thomas F. Cullen, Jr.
Laboratory Director/Organics Division

LAB CERTIFICATION #: 08153

AR100332

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 19

ANALYSIS NO.: A4119

CHART NO.: FRN: 20320

ORIGINAL

(red)

ACID COMPOUNDS

EPA #		ug/l
(21A)	2,4,6-Trichlorophenol	N.D.
(22A)	p-Chloro-m-cresol	N.D.
(24A)	2-Chlorophenol	N.D.
(31A)	2,4-Dichlorophenol	N.D.
(34A)	2,4-Dimethylphenol	N.D.
(57A)	2-Nitrophenol	N.D.
(58A)	4-Nitrophenol	N.D.
(59A)	2,4-Dinitrophenol	N.D.
(60A)	4,6-Dinitro-2-methylphenol	N.D.
(64A)	Pentachlorophenol	N.D.
(65A)	Phenol	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(1B)	Acenaphthene	N.D.
	Benzidine	N.D.
	1,2,4-Trichlorobenzene	N.D.
	Hexachlorobenzene	N.D.
(12B)	Hexachloroethane	N.D.
(18B)	bis(2-Chloroethyl)ether	N.D.
(20B)	2-Chloronaphthalene	N.D.
(25B)	1,2-Dichlorobenzene	N.D.
(26B)	1,3-Dichlorobenzene	N.D.
(27B)	1,4-Dichlorobenzene	N.D.
(28B)	3,3'-Dichlorobenzidine	N.D.
(35B)	2,4-Dinitrotoluene	N.D.
(36B)	2,6-Dinitrotoluene	N.D.
(37B)	1,2-Diphenylhydrazine	N.D.
(39B)	Fluoranthene	N.D.
(40B)	4-Chlorophenyl phenyl ether	N.D.
(41B)	4-Bromophenyl phenyl ether	N.D.
(42B)	bis(2-Chloroisopropyl)ether	N.D.
(43B)	bis(2-Chloroethoxy)methane	N.D.
(52B)	Hexachlorobutadiene	N.D.
(53B)	Hexachlorocyclopentadiene	N.D.
(54B)	Isophorone	N.D.
(55B)	Naphthalene	N.D.
(56B)	Nitrobenzene	N.D.
(61B)	N-Nitrosodimethylamine	N.D.
	N-Nitrosodiphenylamine	N.D.
	N-Nitrosodipropylamine	N.D.
	bis(2-Ethylhexyl)phthalate	N.D.
	Benzyl butyl phthalate	N.D.
(68B)	Di-n-butyl phthalate	N.D.
(69B)	Di-n-octyl phthalate	N.D.
(70B)	Diethyl phthalate	11
(71B)	Dimethyl phthalate	N.D.
		N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/
(73B)	Benzo(a)pyrene	N.I
(74B)	Benzo(b)fluoranthene	N.I
(75B)	Benzo(k)fluoranthene	N.I
(76B)	Chrysene	N.I
(77B)	Acenaphthylene	N.I
(78B)	Anthracene	N.I
(79B)	Benzo(ghi)perylene	N.I
(80B)	Fluorene	N.I
(81B)	Phenanthrene	N.I
(82B)	Dibenzo(a,h)anthracene	N.I
(83B)	Indeno(1,2,3-cd)pyrene	N.I
(84B)	Pyrene	N.I

VOLATILES

EPA #		ug/
(2V)	Acrolein	*
(3V)	Acrylonitrile	*
(4V)	Benzene	1.(
(6V)	Carbon tetrachloride	N.I
(7V)	Chlorobenzene	N.I
(10V)	1,2-Dichloroethane	N.I
(11V)	1,1,1-Trichloroethane	9.:
(13V)	1,1-Dichloroethane	33
(14V)	1,1,2-Trichloroethane	N.I
(15V)	1,1,2,2-Tetrachloroethane	N.I
(16V)	Chloroethane	N.I
(19V)	2-Chloroethylvinyl ether	N.I
(23V)	Chloroform	N.I
(29V)	1,1-Dichloroethene	N.I
(30V)	trans-1,2-Dichloroethene	N.I
(32V)	1,2-Dichloropropane	N.I
(33V)	trans-1,3-Dichloropropene	N.I
	cis-1,3-Dichloropropene	N.I
(38V)	Ethylbenzene	7.(
(44V)	Methylene chloride	1.'
(45V)	Chloromethane	N.I
(46V)	Bromomethane	N.I
(47V)	Bromoform	N.I
(48V)	Bromodichloromethane	N.I
(49V)	Fluorotrichloromethane	N.I
(50V)	Dichlorodifluoromethane	N.I
(51V)	Chlorodibromomethane	N.I
(85V)	Tetrachloroethene	N.I
(86V)	Toluene	11(
(87V)	Trichloroethene	N.I
(88V)	Vinyl chloride	N.I

CENTURY
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Phone: (609) 848-3939 NJ 800-222-0589

ORIGINAL
(red)

INORGANICS ANALYSIS DATA SHEET

CLIENT ROY F. WESTON

ANALYSIS DATE April 13, 1984

LAB SAMPLE I.D. NO. A4119 (#2210133)

CASE NO.

PART I. (Elements to be Identified and Measured)

		mg/l			mg/l
1.	ANTIMONY	0.015	8.	MERCURY	<0.0002
2.	ARSENIC	<0.002	9.	NICKEL	0.12
3.	BERYLLIUM	<0.01	10.	SELENIUM	<0.005
4.	CADMIUM	0.01	11.	SILVER	<0.01
5.	CHROMIUM (Total)	<0.01	12.	THALLIUM	<0.1
6.	COPPER	0.03	13.	ZINC	0.47
7.	LEAD	0.12			

PART II. (Elements to be Identified and Measured)

		mg/l
1.	PHENOLS, (Total)	0.18
2.	CYANIDE	<0.01
3.	ASBESTOS	N.R.

PART III. (Additional Parameters Requested)

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

COMMENTS: N.R. = Not Requested

(3) - PIT 2 EAST

AR100334

CLIENT: ROY F. WESTON

DATE OF ANALYSIS

ANALYSIS NO.: A4121

CHART NO.: FR

ORIGINAL

(red)

PESTICIDES

EPA #		ug/l
(89P)	Aldrin	N.D.
(90P)	Dieldrin	N.D.
(91P)	Chlordane	N.D.
(92P)	4,4'-DDT	N.D.
(93P)	4,4'-DDE	N.D.
(94P)	4,4'-DDD	N.D.
(95P)	α -Endosulfan	N.D.
(96P)	β -Endosulfan	N.D.
(97P)	Endosulfan sulfate	N.D.
(98P)	Endrin	N.D.
(99P)	Endrin aldehyde	N.D.
(100P)	Heptachlor	N.D.
(101P)	Heptachlor epoxide	N.D.
(102P)	α -BHC	N.D.

PESTICIDES

EPA #	
(103P)	β -BHC
(104P)	δ -BHC
(105P)	γ -BHC
(106P)	PCB-1242
(107P)	PCB-1254
(108P)	PCB-1221
(109P)	PCB-1232
(110P)	PCB-1248
(111P)	PCB-1260
(112P)	PCB-1016
(113P)	Toxaphene

DIOXINS

EPA #	
(129B)	2,3,7,8-TCDD (Screen

NOTES AND COMMENTS:

**NOT PRESENT

* Not analyzed for

N.D. = <5.0 ug/l for Base Neutrals, Pesticides and PCB's

N.D. = <0.5 ug/l for Volatile Fraction

Richard W Lynch Jr

Thomas F. Cullen, Jr.
Laboratory Director/Organics D

LAB CERTIFICATION #: 08153

AR100335

CLIENT: ROY F. WESTON

DATE OF

ANALYSIS NO.: A4121

CHART NO

ORIGINAL

(red)

ACID COMPOUNDS

EPA #		ug/l
(21A)	2,4,6-Trichlorophenol	N.D.
(22A)	p-Chloro-m-cresol	N.D.
(24A)	2-Chlorophenol	N.D.
(31A)	2,4-Dichlorophenol	N.D.
(34A)	2,4-Dimethylphenol	N.D.
(57A)	2-Nitrophenol	N.D.
(58A)	4-Nitrophenol	N.D.
(59A)	2,4-Dinitrophenol	N.D.
(60A)	4,6-Dinitro-2-methylphenol	N.D.
(64A)	Pentachlorophenol	N.D.
(65A)	Phenol	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(1B)	Acenaphthene	N.D.
(5B)	Benzidine	N.D.
(8B)	1,2,4-Trichlorobenzene	N.D.
(9B)	Hexachlorobenzene	N.D.
(12B)	Hexachloroethane	N.D.
(18B)	bis(2-Chloroethyl)ether	N.D.
(20B)	2-Chloronaphthalene	N.D.
(25B)	1,2-Dichlorobenzene	N.D.
(26B)	1,3-Dichlorobenzene	N.D.
(27B)	1,4-Dichlorobenzene	N.D.
(28B)	3,3'-Dichlorobenzidine	N.D.
(35B)	2,4-Dinitrotoluene	N.D.
(36B)	2,6-Dinitrotoluene	N.D.
(37B)	1,2-Diphenylhydrazine	N.D.
(39B)	Fluoranthene	N.D.
(40B)	4-Chlorophenyl phenyl ether	N.D.
(41B)	4-Bromophenyl phenyl ether	N.D.
(42B)	bis(2-Chloroisopropyl)ether	N.D.
(43B)	bis(2-Chloroethoxy)methane	N.D.
(52B)	Hexachlorobutadiene	N.D.
(53B)	Hexachlorocyclopentadiene	N.D.
(54B)	Isophorone	N.D.
(55B)	Naphthalene	N.D.
(56B)	Nitrobenzene	N.D.
(61B)	N-Nitrosodimethylamine	N.D.
(62B)	N-Nitrosodiphenylamine	N.D.
(63B)	N-Nitrosodipropylamine	N.D.
(66B)	bis(2-Ethylhexyl)phthalate	N.D.
(67B)	Benzyl butyl phthalate	N.D.
(68B)	Di-n-butyl phthalate	N.D.
(69B)	Di-n-octyl phthalate	N.D.
(70B)	Diethyl phthalate	6.5
(71B)	Dimethyl phthalate	N.D.
(72B)	Benzo(a)anthracene	N.D.

BASE/NEUTI

EPA #	
(73B)	Benzo(a)pyr
(74B)	Benzo(b)flu
(75B)	Benzo(k)flu
(76B)	Chrysene
(77B)	Acenaphthyl
(78B)	Anthracene
(79B)	Benzo(ghi)p
(80B)	Fluorene
(81B)	Phenanthren
(82B)	Dibenzo(a,h
(83B)	Indeno(1,2,3
(84B)	Pyrene

VOLATILES

EPA #	
(2V)	Acrolein
(3V)	Acryloni[illegible]
(4V)	Benzene
(6V)	Carbon tetra
(7V)	Chlorobenzen
(10V)	1,2-Dichloro
(11V)	1,1,1-Trichl
(13V)	1,1-Dichloro
(14V)	1,1,2-Trichl
(15V)	1,1,2,2-Tetra
(16V)	Chlorethane
(19V)	2-Chloroethyl
(23V)	Chloroform
(29V)	1,1-Dichloroe
(30V)	trans-1,2-Dic
(32V)	1,2-Dichlorop
(33V)	trans-1,3-Dic
	cis-1,3-Dichl
(38V)	Ethylbenzene
(44V)	Methylene chlo
(45V)	Chloromethane
(46V)	Bromomethane
(47V)	Bromoform
(48V)	Bromodichlorom
(49V)	Fluorotrichlor
(50V)	Dichlorodifluo
(51V)	Chlorodibr[illegible]m
(85V)	Tetrachloroeth
(86V)	Toluene
(87V)	Trichloroethen
(88V)	Vinyl chloride

AR100336

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 0
Phone: (609) 848-3939 NJ 800-222-0589

ORIGINAL (red)

INORGANICS ANALYSIS DATA SHEET

CLIENT ROY F. WESTON ANALYSIS DATE April

LAB SAMPLE I.D. NO. A4121 (#2210135) CASE NO.

PART I. (Elements to be Identified and Measured)

		mg/l		
1.	ANTIMONY	<0.005	8.	MERCURY
2.	ARSENIC	<0.002	9.	NICKEL
3.	BERYLLIUM	<0.01	10.	SELENIUM
4.	CADMIUM	<0.01	11.	SILVER
5.	CHROMIUM (Total)	<0.01	12.	THALLIUM
6.	COPPER	<0.01	13.	ZINC
7.	LEAD	<0.05		

PART II. (Elements to be Identified and Measured)

		mg/l
1.	PHENOLS, (Total)	< 0.01
2.	CYANIDE	<0.01
3.	ASBESTOS	N.R.

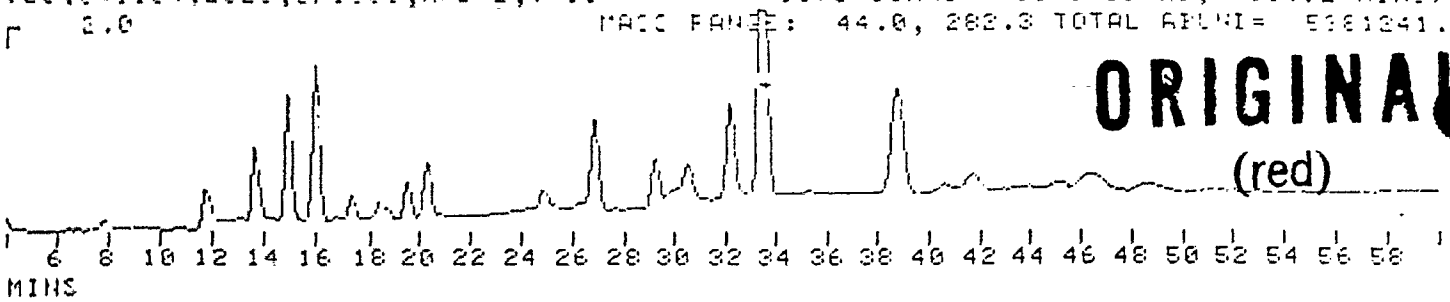
PART III. (Additional Parameters Requested)

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

COMMENTS: N.R. = Not Requested

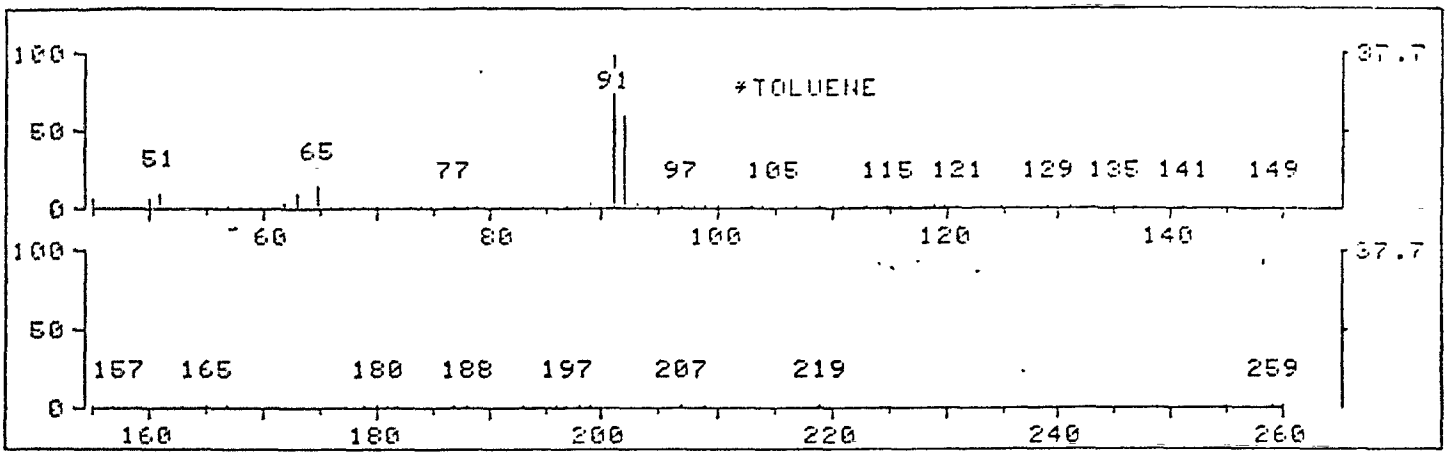
LANI

A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, ERN 11
CLC,041184,2020,SF1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
X 2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.

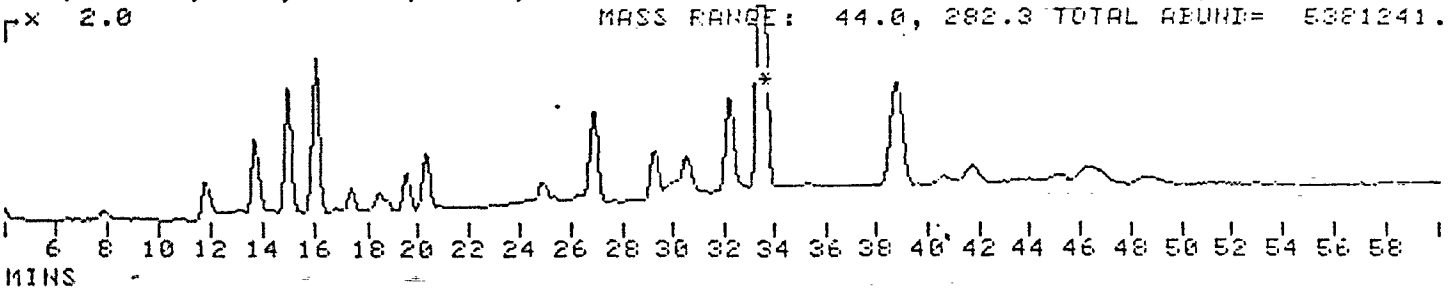


ORIGINAL (red)

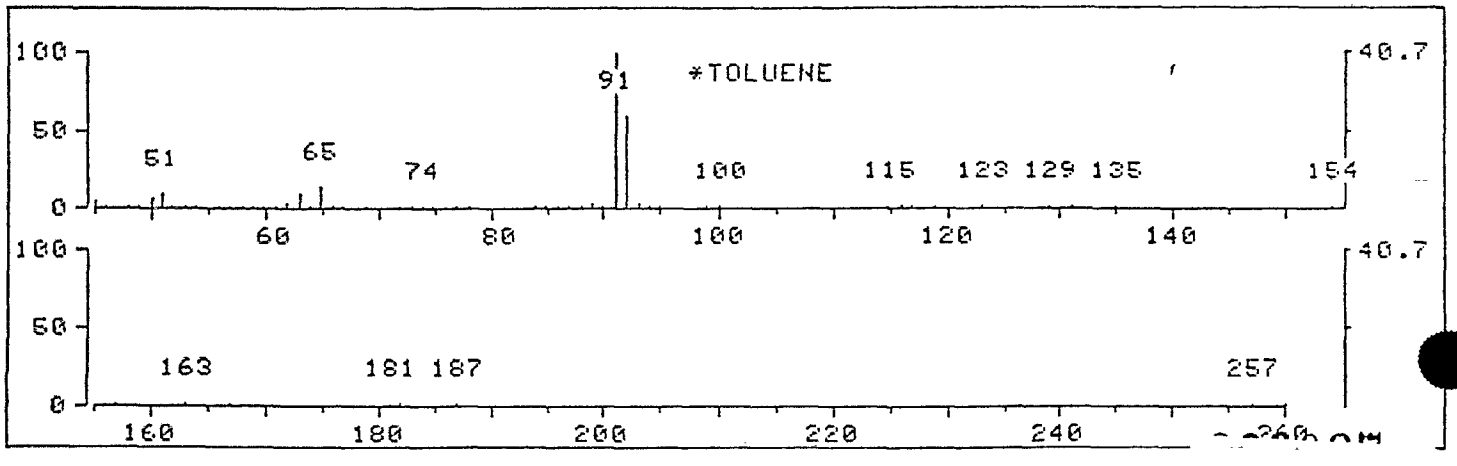
* 987 RET. TIME: 33.48 TOT ABUND= 33667. BASE PK/ABUND: 91.2/ 12703.



A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, ERN 11
CLC,041184,2020,SF1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
X 2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.



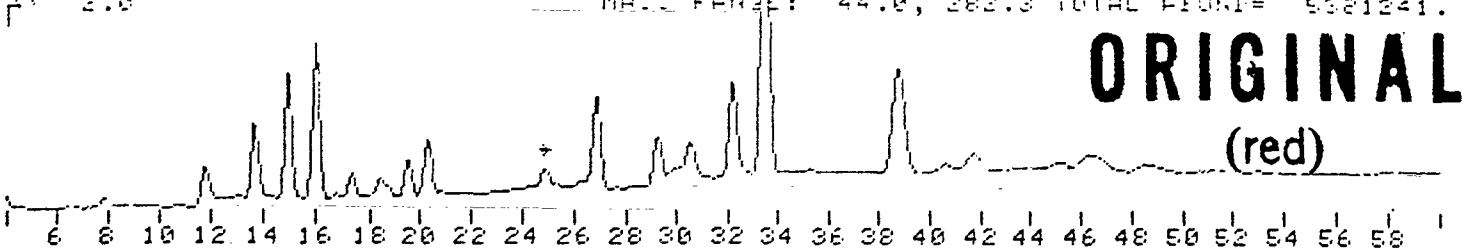
AVERAGED SPECTRUM * BASE PK/ABUND: 91.2/ 32000. + 987 -967



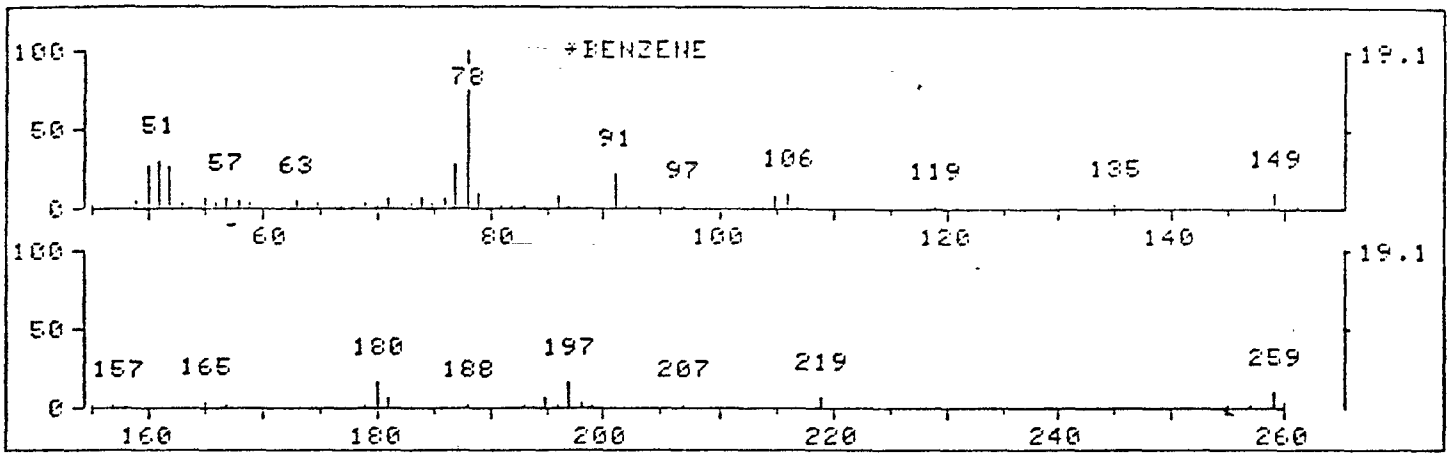
A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, CRN 11
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.

ORIGINAL

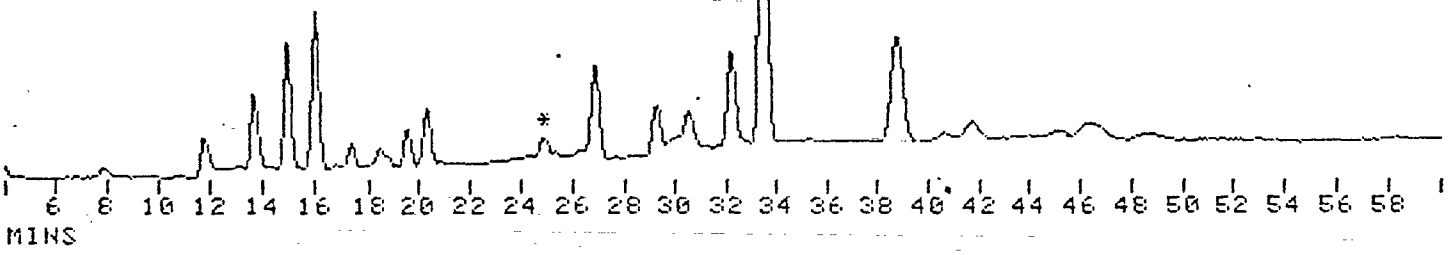
(red)



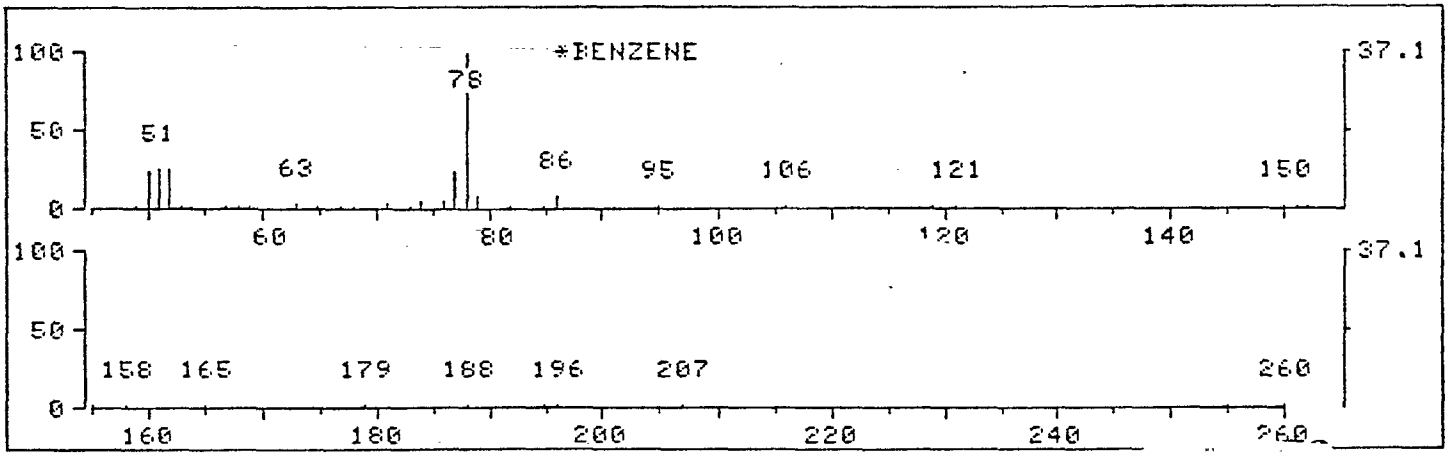
704 RET. TIME: 24.88 TOT ABUND= 3435. BASE PK/ABUND: 78.1/ 655.



A4119,WESTON(2210133)+I.S.(25ML+5UL)E=2600 FRN 10315, CRN 11
CLC,041184,2020,SP1000,A/D=2,T=10 1870 SCANS (1870 SCANS, 55.92 MINS)
2.0 MASS RANGE: 44.0, 282.3 TOTAL ABUND= 5381241.



AVERAGED SPECTRUM * BASE PK/ABUND: 78.1/ 32000. + 704 -718



CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 1984

ANALYSIS NO.: A4120

CHART NO.: FRN: 20319

ORIGINAL (red)

ACID COMPOUNDS

EPA #		ug/l
(21A)	2,4,6-Trichlorophenol	N.D.
(22A)	p-Chloro-m-cresol	N.D.
(24A)	2-Chlorophenol	N.D.
(31A)	2,4-Dichlorophenol	N.D.
(34A)	2,4-Dimethylphenol	N.D.
(57A)	2-Nitrophenol	N.D.
(58A)	4-Nitrophenol	N.D.
(59A)	2,4-Dinitrophenol	N.D.
(60A)	4,6-Dinitro-2-methylphenol	N.D.
(64A)	Pentachlorophenol	N.D.
(65A)	Phenol	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(73B)	Benzo(a)pyrene	N.D.
(74B)	Benzo(b)fluoranthene	N.D.
(75B)	Benzo(k)fluoranthene	N.D.
(76B)	Chrysene	N.D.
(77B)	Acenaphthylene	N.D.
(78B)	Anthracene	N.D.
(79B)	Benzo(ghi)perylene	N.D.
(80B)	Fluorene	N.D.
(81B)	Phenanthrene	N.D.
(82B)	Dibenzo(a,h)anthracene	N.D.
(83B)	Indeno(1,2,3-cd)pyrene	N.D.
(84B)	Pyrene	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(1B)	Acenaphthene	N.D.
( )	Benzidine	N.D.
( )	1,2,4-Trichlorobenzene	N.D.
( )	Hexachlorobenzene	N.D.
(12B)	Hexachloroethane	N.D.
(18B)	bis(2-Chloroethyl)ether	N.D.
(20B)	2-Chloronaphthalene	N.D.
(25B)	1,2-Dichlorobenzene	N.D.
(26B)	1,3-Dichlorobenzene	N.D.
(27B)	1,4-Dichlorobenzene	N.D.
(28B)	3,3'-Dichlorobenzidine	N.D.
(35B)	2,4-Dinitrotoluene	N.D.
(36B)	2,6-Dinitrotoluene	N.D.
(37B)	1,2-Diphenylhydrazine	N.D.
(39B)	Fluoranthene	N.D.
(40B)	4-Chlorophenyl phenyl ether	N.D.
(41B)	4-Bromophenyl phenyl ether	N.D.
(42B)	bis(2-Chloroisopropyl)ether	N.D.
(43B)	bis(2-Chloroethoxy)methane	N.D.
(52B)	Hexachlorobutadiene	N.D.
(53B)	Hexachlorocyclopentadiene	N.D.
(54B)	Isophorone	N.D.
(55B)	Naphthalene	N.D.
(56B)	Nitrobenzene	N.D.
(61B)	N-Nitrosodimethylamine	N.D.
(62B)	N-Nitrosodiphenylamine	N.D.
( )	N-Nitrosodipropylamine	N.D.
( )	bis(2-Ethylhexyl)phthalate	N.D.
( )	Benzyl butyl phthalate	N.D.
(68B)	Di-n-butyl phthalate	N.D.
(69B)	Di-n-octyl phthalate	N.D.
(70B)	Diethyl phthalate	10
(71B)	Dimethyl phthalate	N.D.
(72B)	Benzo(a)anthracene	N.D.

VOLATILES

EPA #		ug/l
(2V)	Acrolein	*
(3V)	Acrylonitrile	*
(4V)	Benzene	[redacted]
(6V)	Carbon tetrachloride	N.D.
(7V)	Chlorobenzene	0.8
(10V)	1,2-Dichloroethane	N.D.
(11V)	1,1,1-Trichloroethane	N.D.
(13V)	1,1-Dichloroethane	4.2
(14V)	1,1,2-Trichloroethane	N.D.
(15V)	1,1,2,2-Tetrachloroethane	N.D.
(16V)	Chlorethane	N.D.
(19V)	2-Chloroethylvinyl ether	N.D.
(23V)	Chloroform	N.D.
(29V)	1,1-Dichloroethene	N.D.
(30V)	trans-1,2-Dichloroethene	2.3
(32V)	1,2-Dichloropropane	N.D.
(33V)	trans-1,3-Dichloropropene	N.D.
	cis-1,3-Dichloropropene	N.D.
(38V)	Ethylbenzene	1.0
(44V)	Methylene chloride	3.5
(45V)	Chloromethane	N.D.
(46V)	Bromomethane	N.D.
(47V)	Bromoform	N.D.
(48V)	Bromodichloromethane	N.D.
(49V)	Fluorotrichloromethane	N.D.
(50V)	Dichlorodifluoromethane	N.D.
(51V)	Chlorodibromomethane	[redacted]
(85V)	Tetrachloroethene	[redacted]
(86V)	Toluene	36.2
(87V)	Trichloroethene	0.8
(88V)	Vinyl chloride	N.D.

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 19

ANALYSIS NO.: A4120

CHART NO.: FRN: 20319

ORIGINAL (red)

PESTICIDES

EPA #		ug/l
(89P)	Aldrin	N.D.
(90P)	Dieldrin	N.D.
(91P)	Chlordane	N.D.
(92P)	4,4'-DDT	N.D.
(93P)	4,4'-DDE	N.D.
(94P)	4,4'-DDD	N.D.
(95P)	α -Endosulfan	N.D.
(96P)	β -Endosulfan	N.D.
(97P)	Endosulfan sulfate	N.D.
(98P)	Endrin	N.D.
(99P)	Endrin aldehyde	N.D.
(100P)	Heptachlor	N.D.
(101P)	Heptachlor epoxide	N.D.
(102P)	α -BHC	N.D.

PESTICIDES

EPA #		ug/l
(103P)	β -BHC	N.D.
(104P)	δ -BHC	N.D.
(105P)	γ -BHC	N.D.
(106P)	PCB-1242	N.D.
(107P)	PCB-1254	N.D.
(108P)	PCB-1221	N.D.
(109P)	PCB-1232	N.D.
(110P)	PCB-1248	N.D.
(111P)	PCB-1260	N.D.
(112P)	PCB-1016	N.D.
(113P)	Toxaphene	N.D.

DIOXINS

EPA #		
(129B)	2,3,7,8-TCDD (Screen Only)	**

NOTES AND COMMENTS:

*NOT PRESENT

* Not analyzed for

N.D. = <5.0 ug/l for Base Neutrals, Pesticides/PCB's

N.D. = <0.5 ug/l for Volatile Fraction

Richard W Lynch for TFC

Thomas F. Cullen, Jr.
Laboratory Director/Organics Division

LAB CERTIFICATION #: 08153

AR100341

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ORIGINAL
(red)

INORGANICS ANALYSIS DATA SHEET

CLIENT ROY F. WESTON

ANALYSIS DATE April 13, 1984

LAB SAMPLE I.D. NO. A4118 (#2210132)

CASE NO.

PART I. (Elements to be Identified and Measured)

		mg/l			mg/l
1.	ANTIMONY	0.019	8.	MERCURY	<0.0002
2.	ARSENIC	<0.002	9.	NICKEL	0.05
3.	BERYLLIUM	<0.01	10.	SELENIUM	<0.005
4.	CADMIUM	0.01	11.	SILVER	<0.01
5.	CHROMIUM (Total)	<0.01	12.	THALLIUM	<0.1
6.	COPPER	0.02	13.	ZINC	0.53
7.	LEAD	0.14			

PART II. (Elements to be Identified and Measured)

		mg/l
1.	PHENOLS, (Total)	0.20
2.	CYANIDE	<0.01
3.	ASBESTOS	N.R.

PART III. (Additional Parameters Requested)

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

COMMENTS: N.R. = Not Requested

(2) PIT 2 South

AR100342

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 1984

ANALYSIS NO.: A4118

CHART NO.: FRN: 20318

ORIGINAL

(red)

ACID COMPOUNDS

EPA #		ug/l
(21A)	2,4,6-Trichlorophenol	N.D.
(22A)	p-Chloro-m-cresol	N.D.
(24A)	2-Chlorophenol	N.D.
(31A)	2,4-Dichlorophenol	N.D.
(34A)	2,4-Dimethylphenol	N.D.
(57A)	2-Nitrophenol	N.D.
(58A)	4-Nitrophenol	N.D.
(59A)	2,4-Dinitrophenol	N.D.
(60A)	4,6-Dinitro-2-methylphenol	N.D.
(64A)	Pentachlorophenol	N.D.
(65A)	Phenol	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(73B)	Benzo(a)pyrene	N.D.
(74B)	Benzo(b)fluoranthene	N.D.
(75B)	Benzo(k)fluoranthene	N.D.
(76B)	Chrysene	N.D.
(77B)	Acenaphthylene	N.D.
(78B)	Anthracene	N.D.
(79B)	Benzo(ghi)perylene	N.D.
(80B)	Fluorene	N.D.
(81B)	Phenanthrene	N.D.
(82B)	Dibenzo(a,h)anthracene	N.D.
(83B)	Indeno(1,2,3-cd)pyrene	N.D.
(84B)	Pyrene	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(1B)	Acenaphthene	N.D.
( )	Benzidine	N.D.
( )	1,2,4-Trichlorobenzene	N.D.
( )	Hexachlorobenzene	N.D.
(12B)	Hexachloroethane	N.D.
(18B)	bis(2-Chloroethyl)ether	N.D.
(20B)	2-Chloronaphthalene	N.D.
(25B)	1,2-Dichlorobenzene	N.D.
(26B)	1,3-Dichlorobenzene	N.D.
(27B)	1,4-Dichlorobenzene	N.D.
(28B)	3,3'-Dichlorobenzidine	N.D.
(35B)	2,4-Dinitrotoluene	N.D.
(36B)	2,6-Dinitrotoluene	N.D.
(37B)	1,2-Diphenylhydrazine	N.D.
(39B)	Fluoranthene	N.D.
(40B)	4-Chlorophenyl phenyl ether	N.D.
(41B)	4-Bromophenyl phenyl ether	N.D.
(42B)	bis(2-Chloroisopropyl)ether	N.D.
(43B)	bis(2-Chloroethoxy)methane	N.D.
(52B)	Hexachlorobutadiene	N.D.
(53B)	Hexachlorocyclopentadiene	N.D.
(54B)	Isophorone	N.D.
(55B)	Naphthalene	N.D.
(56B)	Nitrobenzene	N.D.
(61B)	N-Nitrosodimethylamine	N.D.
( )	N-Nitrosodiphenylamine	N.D.
( )	N-Nitrosodipropylamine	N.D.
( )	bis(2-Ethylhexyl)phthalate	N.D.
( )	Benzyl butyl phthalate	N.D.
(68B)	Di-n-butyl phthalate	N.D.
(69B)	Di-n-octyl phthalate	N.D.
(70B)	Diethyl phthalate	20
(71B)	Dimethyl phthalate	N.D.
( )	Benzo(a)anthracene	N.D.

VOLATILES

EPA #		ug/l
(2V)	Acrolein	*
(3V)	Acrylonitrile	*
(4V)	Benzene	N.D.
(6V)	Carbon tetrachloride	N.D.
(7V)	Chlorobenzene	0.7
(10V)	1,2-Dichloroethane	N.D.
(11V)	1,1,1-Trichloroethane	N.D.
(13V)	1,1-Dichloroethane	0.8
(14V)	1,1,2-Trichloroethane	N.D.
(15V)	1,1,2,2-Tetrachloroethane	N.D.
(16V)	Chloroethane	N.D.
(19V)	2-Chloroethylvinyl ether	N.D.
(23V)	Chloroform	N.D.
(29V)	1,1-Dichloroethene	N.D.
(30V)	trans-1,2-Dichloroethene	1.5
(32V)	1,2-Dichloropropane	N.D.
(33V)	trans-1,3-Dichloropropene	N.D.
	cis-1,3-Dichloropropene	N.D.
(38V)	Ethylbenzene	3.0
(44V)	Methylene chloride	1.4
(45V)	Chloromethane	N.D.
(46V)	Bromomethane	N.D.
(47V)	Bromoform	N.D.
(48V)	Bromodichloromethane	N.D.
(49V)	Fluorotrichloromethane	N.D.
(50V)	Dichlorodifluoromethane	N.D.
(51V)	Chlorodibromomethane	N.D.
(85V)	Tetrachloroethene	N.D.
(86V)	Toluene	20.0
(87V)	Trichloroethene	N.D.
(8)	Vinyl chloride	N.D.

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 1

ANALYSIS NO.: A4118

CHART NO.: FRN: 20318

ORIGINAL

(red)

PESTICIDES

EPA #		ug/l
(89P)	Aldrin	N.D.
(90P)	Dieldrin	N.D.
(91P)	Chlordane	N.D.
(92P)	4,4'-DDT	N.D.
(93P)	4,4'-DDE	N.D.
(94P)	4,4'-DDD	N.D.
(95P)	α -Endosulfan	N.D.
(96P)	β -Endosulfan	N.D.
(97P)	Endosulfan sulfate	N.D.
(98P)	Endrin	N.D.
(99P)	Endrin aldehyde	N.D.
(100P)	Heptachlor	N.D.
(101P)	Heptachlor epoxide	N.D.
(102P)	α -BHC	N.D.

PESTICIDES

EPA #		ug/l
(103P)	β -BHC	N.D.
(104P)	δ -BHC	N.D.
(105P)	γ -BHC	N.D.
(106P)	PCB-1242	N.D.
(107P)	PCB-1254	N.D.
(108P)	PCB-1221	N.D.
(109P)	PCB-1232	N.D.
(110P)	PCB-1248	N.D.
(111P)	PCB-1260	N.D.
(112P)	PCB-1016	N.D.
(113P)	Toxaphene	N.D.

DIOXINS

EPA #		
(129B)	2,3,7,8-TCDD (Screen Only)	**

NOTES AND COMMENTS:

**NOT PRESENT *Not analyzed for

N.D. = <5.0 ug/l for Base Neutrals, Pesticides/PCB's

N.D. = <0.5 ug/l for Volatile Fraction

Richard W Lynch for TFC

Thomas F. Cullen, Jr.
Laboratory Director/Organics Division

LAB CERTIFICATION #: 08153

AR100344

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 19

ANALYSIS NO.: A4117

CHART NO.: FRN:20317

ORIGINAL

(red)

PESTICIDES			PESTICIDES		
EPA #		ug/l	EPA #		ug/l
(89P)	Aldrin	N.D.	(103P)	β -BHC	N.D.
(90P)	Dieldrin	N.D.	(104P)	δ -BHC	N.D.
(91P)	Chlordane	N.D.	(105P)	γ -BHC	N.D.
(92P)	4,4'-DDT	N.D.	(106P)	PCB-1242	N.D.
(93P)	4,4'-DDE	N.D.	(107P)	PCB-1254	N.D.
(94P)	4,4'-DDD	N.D.	(108P)	PCB-1221	N.D.
(95P)	α -Endosulfan	N.D.	(109P)	PCB-1232	N.D.
(96P)	β -Endosulfan	N.D.	(110P)	PCB-1248	N.D.
(97P)	Endosulfan sulfate	N.D.	(111P)	PCB-1260	N.D.
(98P)	Endrin	N.D.	(112P)	PCB-1016	N.D.
(99P)	Endrin aldehyde	N.D.	(113P)	Toxaphene	N.D.
(100P)	Heptachlor	N.D.			
(101P)	Heptachlor epoxide	N.D.			
(102P)	α -BHC	N.D.			

DIOXINS

EPA #		
(129B)	2,3,7,8-TCDD (Screen Only)	**

S AND COMMENTS:

**NOT PRESENT

-Not analyzed for

N.D. = <5.0 ug/l for Base Neutrals, Acid Extractables, Pesticides/PCB's

N.D. = <0.5 ug/l for Volatile Fraction

Richard W Lynd for TFC

Thomas F. Cullen, Jr.
Laboratory Director/Organics Division

LAB CERTIFICATION #: 08153

AR100345

CLIENT: ROY F. WESTON

DATE OF ANALYSIS: April 13, 198

ANALYSIS NO.: A4117

CHART NO.: FRN: 20317

ORIGINAL

(red)

ACID COMPOUNDS

EPA #		ug/l
(21A)	2,4,6-Trichlorophenol	N.D.
(22A)	p-Chloro-m-cresol	N.D.
(24A)	2-Chlorophenol	N.D.
(31A)	2,4-Dichlorophenol	N.D.
(34A)	2,4-Dimethylphenol	N.D.
(57A)	2-Nitrophenol	N.D.
(58A)	4-Nitrophenol	N.D.
(59A)	2,4-Dinitrophenol	N.D.
(60A)	4,6-Dinitro-2-methylphenol	N.D.
(64A)	Pentachlorophenol	N.D.
(65A)	Phenol	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(73B)	Benzo(a)pyrene	N.D.
(74B)	Benzo(b)fluoranthene	N.D.
(75B)	Benzo(k)fluoranthene	N.D.
(76B)	Chrysene	N.D.
(77B)	Acenaphthylene	N.D.
(78B)	Anthracene	N.D.
(79B)	Benzo(ghi)perylene	N.D.
(80B)	Fluorene	N.D.
(81B)	Phenanthrene	N.D.
(82B)	Dibenzo(a,h)anthracene	N.D.
(83B)	Indeno(1,2,3-cd)pyrene	N.D.
(84B)	Pyrene	N.D.

BASE/NEUTRAL COMPOUNDS

EPA #		ug/l
(1B)	Acenaphthene	N.D.
( )	Benzidine	N.D.
( )	1,2,4-Trichlorobenzene	N.D.
( )	Hexachlorobenzene	N.D.
(12B)	Hexachloroethane	N.D.
(18B)	bis(2-Chloroethyl)ether	N.D.
(20B)	2-Chloronaphthalene	N.D.
(25B)	1,2-Dichlorobenzene	N.D.
(26B)	1,3-Dichlorobenzene	N.D.
(27B)	1,4-Dichlorobenzene	N.D.
(28B)	3,3'-Dichlorobenzidine	N.D.
(35B)	2,4-Dinitrotoluene	N.D.
(36B)	2,6-Dinitrotoluene	N.D.
(37B)	1,2-Diphenylhydrazine	N.D.
(39B)	Fluoranthene	N.D.
(40B)	4-Chlorophenyl phenyl ether	N.D.
(41B)	4-Bromophenyl phenyl ether	N.D.
(42B)	bis(2-Chloroisopropyl)ether	N.D.
(43B)	bis(2-Chloroethoxy)methane	N.D.
(52B)	Hexachlorobutadiene	N.D.
(53B)	Hexachlorocyclopentadiene	N.D.
(54B)	Isophorone	N.D.
(55B)	Naphthalene	N.D.
(56B)	Nitrobenzene	N.D.
(61B)	N-Nitrosodimethylamine	N.D.
(62B)	N-Nitrosodiphenylamine	N.D.
( )	N-Nitrosodipropylamine	N.D.
( )	bis(2-Ethylhexyl)phthalate	N.D.
( )	Benzyl butyl phthalate	N.D.
(68B)	Di-n-butyl phthalate	5
(69B)	Di-n-octyl phthalate	N.D.
(70B)	Diethyl phthalate	94
(71B)	Dimethyl phthalate	N.D.
(72B)	Benzo(a)anthracene	N.D.

VOLATILES

EPA #		ug/l
(2V)	Acrolein	*
(3V)	Acrylonitrile	*
(4V)	Benzene	N.D.
(6V)	Carbon tetrachloride	N.D.
(7V)	Chlorobenzene	N.D.
(10V)	1,2-Dichloroethane	N.D.
(11V)	1,1,1-Trichloroethane	9.5
(13V)	1,1-Dichloroethane	8.2
(14V)	1,1,2-Trichloroethane	N.D.
(15V)	1,1,2,2-Tetrachloroethane	N.D.
(16V)	Chloroethane	N.D.
(19V)	2-Chloroethylvinyl ether	N.D.
(23V)	Chloroform	N.D.
(29V)	1,1-Dichloroethene	N.D.
(30V)	trans-1,2-Dichloroethene	5.8
(32V)	1,2-Dichloropropane	N.D.
(33V)	trans-1,3-Dichloropropene	N.D.
	cis-1,3-Dichloropropene	N.D.
(38V)	Ethylbenzene	14.6
(44V)	Methylene chloride	36.5
(45V)	Chloromethane	N.D.
(46V)	Bromomethane	N.D.
(47V)	Bromoform	N.D.
(48V)	Bromodichloromethane	N.D.
(49V)	Fluorotrichloromethane	N.D.
(50V)	Dichlorodifluoromethane	N.D.
(51V)	Chlorodibromomethane	N.D.
(85V)	Tetrachloroethene	N.D.
(86V)	Toluene	118.
(87V)	Trichloroethene	2.7
(88V)	Vinyl chloride	N.D.

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ORIGINAL
(red)

INORGANICS ANALYSIS DATA SHEET

CLIENT ROY F. WESTON

ANALYSIS DATE April 13, 1984

LAB SAMPLE I.D. NO. A4117 (#2210131)

CASE NO.

PART I. (Elements to be Identified and Measured)

		mg/l			mg/l
1.	ANTIMONY	<0.005	8.	MERCURY	<0.0002
2.	ARSENIC	<0.002	9.	NICKEL	<0.05
3.	BERYLLIUM	<0.01	10.	SELENIUM	<0.005
4.	CADMIUM	<0.01	11.	SILVER	<0.01
5.	CHROMIUM (Total)	<0.01	12.	THALLIUM	<0.1
6.	COPPER	<0.01	13.	ZINC	0.06
7.	LEAD	<0.05			

PART II. (Elements to be Identified and Measured)

		mg/l
1.	PHENOLS, (Total)	0.16
2.	CYANIDE	<0.01
3.	ASBESTOS	N.R.

PART III. (Additional Parameters Requested)

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

COMMENTS: N.R. = Not Requested

(1- pits pool

AR100347

ORIGINAL
(red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : May 29, 1984

SUBJECT: Lackawanna Results

FROM : Daniel K. Donnelly (3ES21) DKD
Chief, Annapolis Laboratory

TO : Ed Shoener (3HW12)

Enclosed are the analytical results from the 4/18-19/84 Lackawanna samples.

DKD:jr

Enclosure
a/s

ORIGINAL
(red)

Lackawanna Refuse - Superfund Remedial

Sample Description:

Lab No.	Description
840420-01	Lackawanna Refuse, Sta. LA-SW-020
-02	Lackawanna Refuse, Sta. LA-SW-027
-03	Lackawanna Refuse, Sta. LA-SW-028
-04	Lackawanna Refuse, Sta. LA-SW-030
-05	Lackawanna Refuse, Sta. LA-SW-031
-06	Lackawanna Refuse, Sta. LA-SW-034-1
-07	Lackawanna Refuse, Sta. LA-SW-034-2
-08	Lackawanna Refuse, Sta. LA-SW-035-1
-09	Lackawanna Refuse, Sta. LA-SW-036
-10	Lackawanna Refuse, Sta. LA-SW-037
-11	Lackawanna Refuse, Sta. LA-SW-038
-12	Lackawanna Refuse, Sta. LA-SW-050

U.S. Environmental Protection Agenc legion III, Central Regional Laboratory

Project Name: Lackwanna Refuse - Superfund Remedial

Sample Number:	840420-01 mg/L	840420-02 mg/L	840420-03 mg/L	840420-04 mg/L	840420-05 mg/L	840420-06 mg/L
MISCELLANEOUS						
Parameter						
BOD_5	290	176±6	310	>740	620	<10
COD	354	495	594	1520	891	9.81
Calcium	25.4	201	123	176	170±1.0	17
Magnesium	9.8	63.3	42.7	212	136	9.8±0.1

Sample Number:	840420-07 mg/L	840420-08 mg/L	840420-09 mg/L	840420-10 mg/L	840420-11 mg/L	840420-12 mg/L
MISCELLANEOUS						
Parameter						
BOD_5	<10	142±11	179±16	<10	19	138±4
COD	9.81	202	295	3.76	49.3	259
Calcium	16.1	70.6	69	6.7±0(96%)	15.3	86.7
Magnesium	9.7	64	66.7	8.1±0	18(108%)	33.3±0.1

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

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

CHAIN OF CUSTODY RECORD

PROJ. NO.: 074914 | PROJECT NAME: Superfund

SAMPLERS: (Signature) Bruce Scott

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 l plastic	500 ml plastic		REMARKS
LA-SW-030	4/12/84	4:30 pm		X	Pit 5 NE Corner	3	2	1	84042001	Ca, Mg
LA-SW-027	4/12/84	5:30 pm		X	Creek Below Pit 3	3	2	1	84042002	
LA-SW-028	4/12/84	5 pm		X	Creek Below Pit 3 (fence corner)	3	2	1	84042003	
LA-SW-030	4/12/84	6:15 pm		X	Sluice Pipe	3	2	1	84042004	
LA-SW-031	4/12/84	6 pm		X	50' from Sluice Pipe	3	2	1	84042005	
LA-SW-034-1	4/13/84	10:30 am		X	Base of hill from seeps	3	2	1	84042006	
LA-SW-034-2	4/13/84	10:35 am		X	Base of hill from seeps	3	2	1	84042007	
LA-SW-035-1	4/13/84	11:15 am		X	Base of Spoil Pile	3	2	1	84042008	
LA-SW-036	4/12/84	11:50 am		X	Drainage Ditch	3	2	1	84042009	
LA-SW-037	4/12/84	12 noon		X	Stream Above Ditch	3	2	1	84042010	
LA-SW-038	4/12/84	12:45 pm		X	Stream Below Ditch	3	2	1	84042011	
LA-SW-050	4/13/84	11am		X	Seep between LA-SW-034 & 035	3	2	1	84042012	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Bruce Scott	4/13 1730	Federal Express 248739665			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Janet Robuso	Date / Time 4-20-84 9:30	Remarks	

ORIGINAL (red)

RICO351

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

3-127

ORIGINAL

(red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : March 23, 1984

SUBJECT: Lackawanna Pesticide and PCB Analytical Results

FROM: : Daniel K. Donnelly (3ES21)
Chief, Annapolis Lab

TO: : Ed Shoener (3HW21)
Superfund Remedial Section

Enclosed please find the results of pesticide and PCB analyses of Lackawanna samples.

DKD:ad

Enclosure
a/s

cc: Joe Strenko
NUS

ORIGINAL

(red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : March 16, 1984

SUBJECT: Pesticide and PCB Analysis - Lackawanna Superfund - Removal, 840203-04 - 06, 840213-05 - 06

FROM: : S. R. Kayser
Chemist

TO: : Daniel K. Donnelly
Chief, Anapolis Lab

THRU : John Austin
Team Leader, Organic Analysis Unit

Samples were run in accordance with Method 608 for pesticides and PCB's.

Sample Description:

Lab No.	Description
840203-04	Lackawanna, LA SO-03 (9328), Soil
-05	Lackawanna, LA SO-22 (9346), Soil
-06	Lackawanna, LA SO-23 (9347), Soil
840213-05	Lackawanna, LA SO-24, Soil
-06	Lackawanna, LA SO-29, Soil

Set 1 - already extracted, 840203-04 - 06
Set 2 - extracted at EPA, 840203-04 - 06

Set 1 - already extracted, 840213-05 - 06
Set 2 - extracted at EPA, 840213-05 - 06

Results:

Set 1		Set 2 - EPA Extracted	
840203-04	N.D.	840203-04	Trace Aroclor 1254
-05	N.D.	-05	N.D.
-06	N.D.	-06	Trace Aroclor 1254
840213-05	N.D.	840213-05	N.D.
-06	N.D.	-06	N.D.

SRK:ad

cc: P. J. Krantz
QAO, CRL

ORIGINA

PESTICIDE/PCBS PRIORITY POLLUTANT COMPOUND DETECTION LIMITS (red)

Parameter	Cas Number	Soil/Sediment mg/kg
Aldrin	309-00-2	.03
Alpha BHC	319-84-6	.02
Alpha Endosulfan	115-29-7	.05
Beta BHC	319-85-7	.04
Beta Endosulfan	115-29-7	.1
Chlordane	57-74-9	.4
4,4'DDD	72-54-8	.12
4,4'DDE	72-55-9	.06
4,4'DDT	50-29-3	.16
Delta BHC	319-86-8	.04
Dieldrin	60-57-1	.06
Endosulfan Sulfate	1031-07-8	.3
Endrin	72-20-8	.09
Endrin Aldehyde	7421-93-4	.23
Gamma BHC (Lindane)	58-89-9	.02
Heptachlor	76-44-8	.02
Heptachlor Epoxide	1024-57-3	.04
Toxaphene	8001-35-2	4.0
PCB 1016	12674-11-2	0.4
PCB 1221	11104-28-2	1.0
PCB 1232	11141-16-5	1.0
PCB 1242	53469-21-9	0.5
PCB 1248	12672-29-6	0.8
PCB 1254	11097-69-1	0.8
PCB 1260	11096-82-5	1.5

DEPARTMENT OF HE..TH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
National Institute for
Occupational Safety & Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati OH 45226

ORIGINAL
(red)

August 29, 1984
HETA 84-166

Walter Graham
Remedial On-Scene Coordinator
U.S. Environmental Protection Agency
Region III
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Dear Mr. Graham:

Enclosed are six tables containing the air sampling data collected by NIOSH at the Lackawanna Refuse Site in Old Forge, Pennsylvania.

As we discussed by telephone earlier this week, the final report interpreting these results will be available later this fall.

Sincerely yours,

Richard J. Costello, P.E. C.I.H., C.S.P.
Senior Research Industrial Hygienist
Hazard Evaluations and Technical
Assistance Branch
Division of Surveillance, Hazard
Evaluations and Field Studies

6 Enclosures

ORIGINAL
(red)

Table 2
On Site Sample Results
Organic Vapors

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Results ug/m3
4/23/84	Area N	4+21	Site Undisturbed	ND
	Area E	5+16		ND
	Area S	4+20		ND
	Area W	4+48		ND
4/27/84	Area N	7+36	Site Undisturbed	ND
	Area E	7+19		ND
	Area S	7+15		ND
	Area W	7+33		ND
	Entrance	5+52		ND
4/28/84	Area N	7+45	Exploratory	ND
	Area E	8+06	Operations	ND
	Area S	7+57		ND
	Area W	0+00		
	Backhoe	8+37		ND
	Entrance	9+26		ND
	Personal	3+04		ND
4/29/84	Area N	8+19	Exploratory	ND
	Area E	8+32	Operations	ND
	Area S	8+35		ND
	Area W	8+25		ND
	Personal (No #)	7+00		9.5*

NOTE: *This substance was tentatively identified as toluene based on its chromatographic retention time.

ORIGINAL
(red)

Table 3
Laboratory Results
Organic Vapors
Analyzed as "Total Hydrocarbons"

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Results ug/m^3
4/28/84	Personal	4+21	Exploratory	ND
	Personal	5+16	Operations	ND
	Personal	6+30		ND
	Personal	6+45		ND
	Personal	4+20		ND
	Blank			ND
4/29/84	Entrance	4+39	Exploratory	ND
	Entrance	4+18	Operations	ND
	Backhoe	4+39		ND
	Backhoe	4+28		ND

ORIGINAL (red)

Table 4
Laboratory Results
Elemental Analysis

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Al	Ca	Fe	Mg	Na	P	Zn
				(Concentrations are in ug/m3)						
4/27/84	Area N	7+36	Site Undisturbed	ND	0.78	ND	ND	ND	1.13	0.06
	Area E	7+18		ND	0.82	ND	0.26	7.28	4.57	0.85
	Area S	7+15		ND	0.43	ND	0.26	ND	0.39	ND
	Area W	5+15		2.36	0.59	ND	ND	ND	1.81	ND
	Entrance	5+52		ND	1.18	ND	0.49	1.58	2.27	0.57
4/28/84	Area N	7+45	Exploratory	ND	0.15	ND	ND	ND	0.37	ND
	Area E	8+06	Operations	ND	0.15	ND	ND	1.15	ND	ND
	Area S	7+57		ND	1.11	ND	0.48	5.13	ND	0.54
	Area W	7+42		1.98	1.64	3.47	ND	ND	1.73	0.31
	Backhoe	8+37		ND	0.36	1.55	ND	1.52	0.77	ND
	Entrance	9+26		ND	0.63	ND	0.40	3.71	0.71	0.05
4/29/84	Area N	8+19	Exploratory	ND	0.49	ND	0.23	2.72	ND	ND
	Area S	8+35	Operations	ND	0.47	ND	ND	ND	1.0	ND
	Area E	8+32		ND	0.36	ND	ND	1.20	0.78	ND
	Area W	8+25		ND	0.59	ND	0.23	ND	1.02	ND
	Backhoe	9+07		ND	0.44	17.44	0.31	ND	1.44	ND
	Entrance	9+40		ND	0.81	ND	0.30	0.37	1.48	0.15
	Personal	8+08		ND	1.43	1.76	1.05	1.14	1.29	0.53
	Personal	3+25		ND	ND	ND	ND	ND	ND	ND

NOTE: The following elements were also analyzed, but were not detected: Ag, As, Ba, Be, Cd, Co, Cr, Cu, La, Li, Mn, Mo, Ni, Pb, Pt, Sb, Se, Sr, Te, Ti, Tl, Y, Zr. The analytical limit of detection was 1.0 ug/sample.

ORIGINAL
(red)

Table 6
On Site Sample Results
Acid Anions

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Results Cl^-	Results SO_4^{-2} ug/m^3
4/27/84	Area N	7+56	Site Undisturbed	15	28
	Area E	7+08		12	19
	Area S	7+12		16	22
	Area W	7+33		14	28
4/28/84	Area N	7+45	Operations	9	15
	Area E	8+06	Exploratory	9	10
	Area S	7+57		9	19
	Area W	7+43		10	11
	Backhoe	8+37		8	10
	Entrance	9+26		7	14

NOTE: The following anions were not detected in any of the samples at the LOD given in parentheses : acetate (not determined), azide (3 ug/sample), bromide (1 ug/sample), chromate (13 ug/sample), fluoride (6 ug/sample), formate (not determined), nitrate (3 ug/sample), nitrite (1.7 ug/sample), oxalate (7 ug/sample), phosphate (7 ug/sample), propionate (not determined), thiosulfate (5 ug/sample).

ORIGINAL
(red)

Table 7
Laboratory Results
Phenol, Cresols (all)
and
Xylenols (all)

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Results ug/m^3
4/27/84	Area N	7+56	Site Undisturbed	ND
	Area E	7+08		ND
	Area S	7+12		ND
	Area W	7+33		ND
	Entran	5+52		ND
4/28/84	Area N	7+45	Exploratory Operations	ND
	Area E	4+18		ND
	Area S	7+57		ND
	Area W	7+42		ND
	Backhoe	8+37		ND
	Entrance	9+26		ND
	Personal	6+13		ND
4/29/84	Area N	8+18	Operations Exploratory	ND
	Area E	8+32		ND
	Area S	4+18		ND
	Area W	8+25		ND
	Backhoe	9+07		ND
	Entrance	9+40		ND
	Personal	8+25		ND
	Personal	8+05		ND

ORIGINAL (red)

ARI00361

Table 8
Laboratory Results
Particle Size Distribution

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Particle Size Distribution MMAD[1]	Std Dev	Total Suspended Particulate ug/m^3
4/27/84	Area N	7+56	Site Undisturbed	32	3.5	340
	Area E	7+08		12	3.5	457
	Area S	7+12		9.5	4.7	218
	Area W	7+33		No Result		
	Entrance	5+52		7	4.6	284
4/28/84	Area N	7+45	Exploratory	17	2.4	216
	Area E	4+18	Operations	5	3.6	175
	Area S	7+57		No Result		
	Area W	7+42		13	2.2	84
	Backhoe	8+37		13	2	150
4/29/84	Area N	8+18	Exploratory	15	6	320
	Area E	8+32	Operations	No Result		
	Area S	4+18		No Result		
	Area W	8+25		8	1.8	129
	Backhoe	9+07		No Result		

Note: [1]The geometric mean of the mass median aerodynamic diamter (MMAD), in microns, and the geometric standard deviation of the MMAD are reported.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
National Institute for
Occupational Safety & Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati OH 45226

July 5, 1984
HE 84-166

ORIGINAL
(red)

Mr. Ed Shoener
Remedial On-Scene Coordinator
U.S. Environmental Protection Agency
Region II
6th and Walnut Streets
Philadelphia, PA 19106

Dear Mr. Shoener:

This letter confirms our telephone conversation of last Friday.

Please be advised that the contaminant reported at a concentration of 9.5 ug/M^3 in Table 1 of my letter of June 15th for the Personal Sample of 4/29/84 was tentatively identified as toluene based on the sample chromatographic retention time.

To put the chloride and sulfate results in Table 2 of my letter dated June 15th in perspective, it should be noted that the measured concentrations are only slightly greater than those for ambient air. For example, in Volume 1 of Air Pollution, 3rd edition, Stern lists the ambient air sulfate and chloride concentrations given in Table 1. For occupational settings, the NIOSH-recommended 8-hour time weighted average exposure for sulfuric acid (98% sulfate by weight) is 1000 ug/M^3 and a ceiling exposure limit for hydrochloric acid (97% chloride by weight) is 7000 ug/M^3.

I have plotted the approximate locations of our area samples on a site plan (Attachment 1).

If I can be of further assistance, please contact me at (513) 684-4382.

Sincerely yours,

Richard J. Costello

Richard J. Costello, P.E., C.I.H.
Senior Research Industrial Hygienist
Hazard Evaluation and Technical
Assistance Branch
Division of Surveillance, Hazard
Evaluation and Field Studies

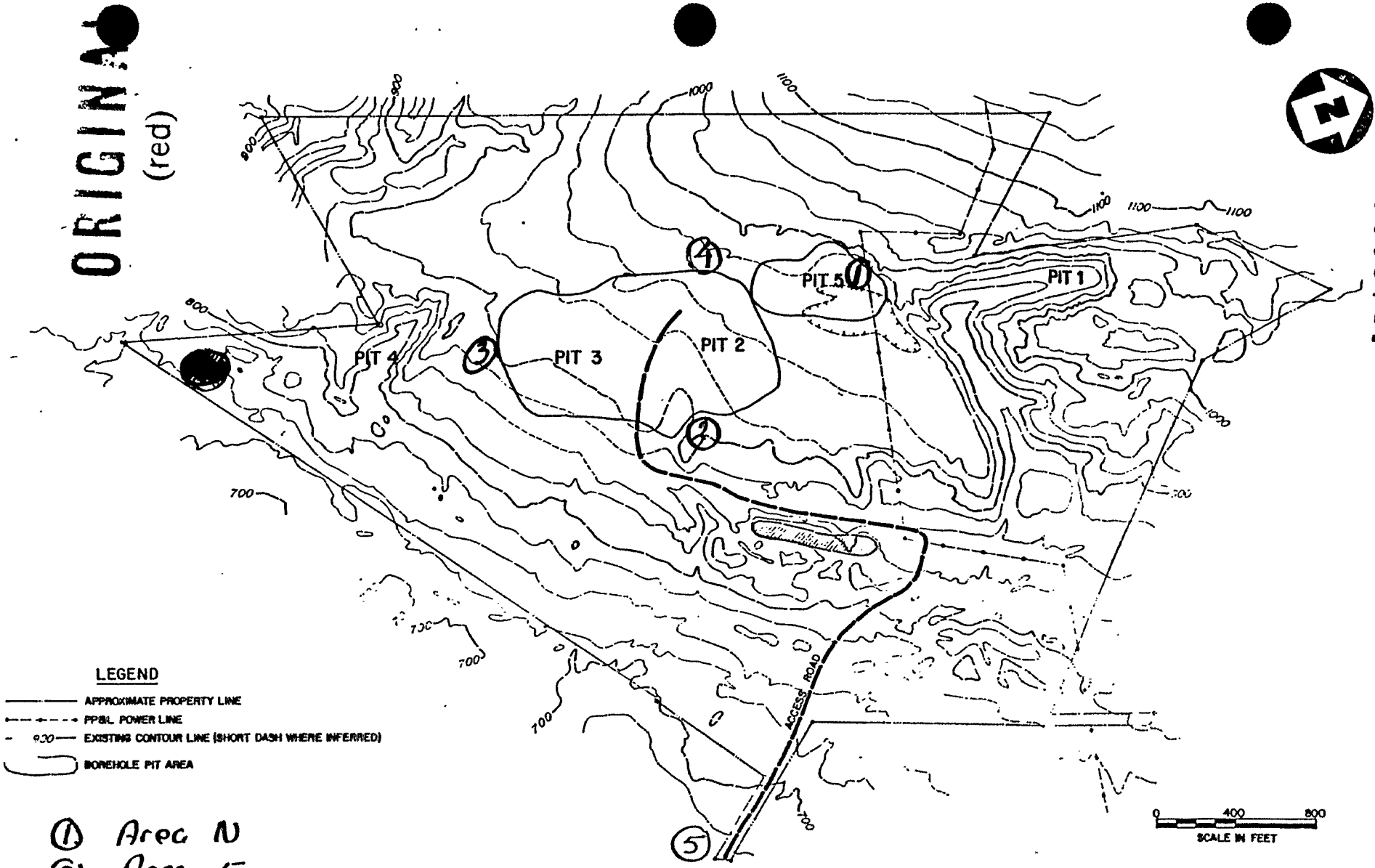
Enclosures

ORIGINAL
(red)

Table 1
Reported Average Concentrations
(ug/M^3) of Selected Anions
in Suspended Particulate Matter in Air

Location	Cl^-	SO_4^{2-}
Chilton, Berkshire, England	2.2	
Osaka, Japan	0.50	
University of Alaska	1.44	
Cincinnati, Ohio		7.2
Fairfax, Ohio		8.7
Osaka, Japan		12.4

ORIGINAL (red)



1. Area N
2. Area E
3. Area S
4. Area W
5. Entrance or "Drive"

SITE PLAN
LACKAWANNA REFUSE SITE, OLD FORGE, PA
SCALE: 1" = 450'

FIGURE 1-2

NUS CORPORATION
A Halliburton Company

AR100364

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
National Institute for
Occupational Safety & Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati OH 45226

June 15, 1984
HE 84-166

ORIGINAL
(red)

Mr. Ed Shoener
Remedial On-Scene Coordinator
U.S. Environmental Protection Agency
Superfund Program (3AW23)
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Dear Mr. Shoener:

Enclosed are results of the air samples analyzed by NIOSH at the Lackawanna Refuse Site in Old Forge, Pennsylvania (Tables 1 and 2). All values are well below recognized occupational exposure limits.

Additional samples to quantitate organic vapors, particle size distribution, cresols, phenols, and particulate metals have been submitted to NIOSH laboratories.

If I can be of any further assistance, please contact me at (513)684-4382.

Sincerely yours,

Richard J. Costello, P.E., C.I.H.
Senior Research Industrial Hygienist
Hazard Evaluations and Technical
Assistance Branch
Division of Surveillance, Hazard
Evaluations and Field Studies

Enclosures

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(red)

Table 1
On Site Sample Results
Organic Vapors

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Detection Limit	Results ug/m^3
4/23/84	Area N	4+21	Site Undisturbed	0.1 ug/L	ND
	Area E	5+16			ND
	Area S	4+20			ND
	Area W	4+48			ND
4/27/84	Area N	7+36	Site Undisturbed	2 ug/sample	ND
	Area E	7+19			ND
	Area S	7+15			ND
	Area W	7+33			ND
	Drive	5+52			ND
4/28/84	Drive	9+26	Exploratory		ND
	Backhoe	8+37	Operations		ND
	Area N	7+45			ND
	Area E	8+06			ND
	Area S	7+57			ND
	Area W	0+00	Pump Failure		
	Personal	3+04			ND
4/29/84	Area N	8+19	Exploratory		ND
	Area E	8+32	Operations		ND
	Area S	8+35			ND
	Area W	8+25			ND
	Personal	7+00			9.5

ORIGINAL
(red)

Table 2
On Site Sample Results
Acid Anions

Lackawanna Refuse Site
Old Forge, PA
April 1984

Date	Sample Location	Sample Duration	Site Condition	Detection Limit	Results Cl^- ug/m^3	Results SO_4^{2-} ug/m^3
4/27/84	Area N	7+56	Site Undisturbed	1ug/sample:CL 2ug/sample:S04	15	28
	Area E				12	19
	Area S				16	22
	Area W				14	28
4/28/84	Area N				9	15
	Area E				9	10
	Area S				9	19
	Area W				10	11
	Drive				7	14
	Backhoe				8	10

NOTE: The following anions were not detected in any of the samples at the LOD given in parentheses : acetate (ND), azide (3 ug/sample), bromide (1 ug/sample), chromate (13 ug/sample), fluoride (6 ug/sample), formate (ND), nitrate (3 ug/sample), nitrite (1.7 ug/sample), oxalate (7 ug/sample), phosphate (7 ug/sample), propionate (ND), thiosulfate (5 ug/sample).

NUS CORPORATION

10/15/84

Page ___ of ___ ORIGINAL

DATE

CLIENT Lackawanna FILE NO. ___ BY R. Ninestee(red)

SUBJECT Backyard Soils - Organics Case 2755 Checked By ___

	C4706 Trip Blank	C4701 Febbo Residence	C4702 Arnold Residence	C4703 Yeager Residence
Chloroform	5K ug/kg	5K ug/kg	5K ug/kg	ND ug/kg
Methylene Chloride	220	730	450	1600
Acetone	10	15	9	23
Toluene	5K	5K	5K	5K

Spoke to Dan. Containers solvent washed but not baked. Some gallon containers have had liq. MC in bottom. Changes in procedures will take place now.

FIT + TAT have had blank water contaminated

Suggests checking blank water and using VOA bottles next time. He can provide them.

Omitted: Backyard soils collected + shipped by DER

Dist: Prof Sols

FIGURE 1

QUALITY ASSURANCE REVIEW FORM

ORIGINAL (red)

PROJECT NAME: Lackawanna

PROJECT NO.: # 749.14

QUALITY ASSURANCE REVIEW OF ORGANIC ANALYSIS LAB DATA PACKAGE

Case No.: 2155

Contract No.: _____

Contract Laboratory: Ameren

Applicable IFB No.: 68-01-6782

Applicable Sample No.'s: C4701 C4702 C4703 Bl. C4706 _____ _____ _____ _____ _____

Region: III

Reviewer: [illegible]

Review Date: 10/15-16/84

The organic analytical data for this case have been reviewed. The quality assurance evaluation is summarized in the following table: and in attached comments section.

REVIEWER'S EVALUATION*	FRACTION				
	Volatiles	Acids	Base/ Neutrals	PCB's/ Pesticides	TCDD
Acceptable	✓	✓	✓	✓	✓
Acceptable with Exception(s)					
Questionable					
Unacceptable					

*Definitions of the evaluation score categories follow.

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

- [x] DATA COMPLETENESS
- [x] BLANK ANALYSIS RESULTS
- [x] SURROGATE SPIKE RESULTS
- [x] MATRIX SPIKE/METHOD STANDARD RESULTS
- [x] DUPLICATE ANALYSIS RESULTS
- [ ] EVALUATION OF CONFIRMATIONS
- [x] TENTATIVELY IDENTIFIED COMPOUNDS
- [x] CHROMATOGRAPHIC SENSITIVITY CHECK
- [x] DFTPP AND BFB SPECTRUM TUNE RESUL
- [ ] STANDARDS
- [x] CALIBRATION CHECK STANDARDS
- [x] INTERNAL STANDARDS PERFORMANCE

Jackson ville $749.14 ORIGINAL (red)

Case 2755 Comments

C4706 Blank results

Volatile compounds were all below listed detection limits, except methylene chloride and acetone at 220 and 10 ug/kg respectively results

Semi-volatile compounds were all below listed detection limits.

Pesticides/PCB and TCDD results were all below listed detection limits -

Blank results are judged to be acceptable.

C4701 Soil, 11% moisture

Volatile compounds

methylene chloride and acetone were given as 730 and 15 ug/kg respectively these two compounds are ~~not~~ common laboratory contaminants. All other volatile compounds were below the listed detection limits.

Semi-volatile compounds results were all below the listed detection limits

Pesticides/PCB and TCDD results were all below listed detection limits. AR100370

Sample C4701 results are acceptable.

ORIGINAL
(red)

C4702 Soil, 13% moisture

Volatile compound results were given as below listed detection limits except for methylene chloride 450 µg/kg and acetone at 9 µg/kg. Both of these compounds are common laboratory contaminants.

Semi-volatile compound results were all below the listed detection limits.

Pesticide/PCB/TCDD results were all given as below listed detection limits.

Sample C4702 results are acceptable

C4703 Soil, 12% moisture

Volatile compound results were given as below listed detection limits, except for methylene chloride and acetone which were reported as 1600 and 23 µg/kg respectively. As noted previously, these compounds are common laboratory contaminan

Semi-volatile compounds. The results for these compounds were reported as below the listed detection limits.

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(red)

Pesticides / PCB / ~~Dioxin~~ TCDD results were all below the listed detection limits.

Summary.

Both methylene chloride and acetone were found in the soils in varying amounts as well as in the trip blank. Their presence in all four samples strongly suggests laboratory contamination problem.

Ron Byrd 10/16/84
Ron Byrd

ACUREX Corporation

REM

ORIGINAL
(red)

Energy & Environmental Division

September 10, 1984

U.S. Environmental Protection Agency
Contract Laboratory Program
Sample Management Office
300 N. Lee Street, #200
Alexandria, VA 22314

Attention: Eileen O'Conner

Subject: Data Package for Four Soil Samples
Case 2755
Contract #: 68-01-6782

Enclosed please find the sample data package and standards package for four soil samples identified as C4701, C4702, C4703, and C4706.

If you have any questions regarding this package, please call.

Sincerely,

Richard Scott

Richard Scott
Project Manager

RS/as

cc: USEPA Region III
Central Regional Laboratory
839 Bestgate Road
Annapolis, MD 21401
Attention: Pat Krantz

USEPA/EMSL
P.O. Box 15027
Las Vegas, NV 89114
Attention: Dr. Gareth Pearson

AR100373

U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 223. - 703/557-2490

Sample Number
ORIGINAL

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: Acurex
Case No: 2755 (red)
Lab Sample ID No: B405-030-1
QC Report No:
Sample Matrix: Soil
Contract No.: 68-01-6782
Data Release Authorized By: Richard Scott
Date Sample Received: 5-16-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: (LOW) MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 5-17-84
DATE ANALYZED: 8-23-84
PERCENT MOISTURE: —
CONC./DILUTION FACTOR: 5

PP #	CAS #		ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	1000 U
(22A)	59-50-7	p-chloro-m-cresol	1000 U
(24A)	95-57-8	2- chlorophenol	1000 U
(31A)	120-83-2	2,4-dichlorophenol	1000 U
(34A)	105-67-9	2,4-dimethylphenol	1000 U
(57A)	88-75-5	2- nitrophenol	2000 U
(58A)	100-02-7	4-nitrophenol	5000 U
(59A)	51-28-5	2,4-dinitrophenol	5000 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	2000 U
(64A)	87-86-5	pentachlorophenol	1000 U
(65A)	108-95-2	phenol	2000 U
	65-85-0	benzoic acid	10000 U
	95-48-7	2-methylphenol	500 U
	108-39-4	4-methylphenol	500 U
	95-95-4	2,4,5-trichlorophenol	10000 U
(1B)	83-32-9	acenaphthene	1000 U
(5B)	92-87-5	benzidine	4000 U
(8B)	120-82-1	1,2,4-trichlorobenzene	1000 U
(9B)	118-74-1	hexachlorobenzene	1000 U
(12B)	67-72-1	hexachloroethane	1000 U
(18B)	111-44-4	bis(2-chloroethyl)ether	1000 U
(20B)	91-58-7	2-chloronaphthalene	1000 U
(25B)	95-50-1	1,2-dichlorobenzene	1000 U
(26B)	541-73-1	1,3-dichlorobenzene	1000 U
(27B)	106-46-7	1,4-dichlorobenzene	1000 U
(28B)	91-94-1	3,3'-dichlorobenzidine	20000
(35B)	121-14-2	2,4-dinitrotoluene	20000
(36B)	606-20-2	2,6-dinitrotoluene	20000
(37B)	122-66-7	1,2-diphenylhydrazine	20000
(39B)	206-44-0	fluoranthene	10000
(40B)	7005-72-3	4-chlorophenyl phenyl ether	10000
(41B)	101-55-3	4-bromophenyl phenyl ether	10000
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	20000
(43B)	111-91-1	bis (2-chloroethoxy) methane	20000

PP #	CAS #		ug/l or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	1000 U
(53B)	77-47-4	hexachlorocyclopentadiene	1000 U
(54B)	78-59-1	isophorone	1000 U
(55B)	91-20-3	naphthalene	1000 U
(56B)	98-95-3	nitrobenzene	1000 U
(61B)	62-75-9	N-nitrosodimethylamine	1000 U
(62B)	86-30-6	N-nitrosodiphenylamine	1000 U
(63B)	621-64-7	N-nitrosodipropylamine	1000 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	1000 U
(67B)	85-68-7	benzyl butyl phthalate	1000 U
(68B)	84-74-2	di-n-butyl phthalate	1000 U
(69B)	117-84-0	di-n-octyl phthalate	1000 U
(70B)	84-66-2	diethyl phthalate	1000 U
(71B)	131-11-3	dimethyl phthalate	1000 U
(72B)	56-55-3	benzo(a)anthracene	1000 U
(73B)	50-32-8	benzo(a)pyrene	2000 U
(74B)	205-99-2	benzo(b)fluoranthene	2000 U
(75B)	207-08-9	benzo(k)fluoranthene	2000 U
(76B)	218-01-9	chrysene	2000 U
(77B)	208-96-8	acenaphthylene	1000 U
(78B)	120-12-7	anthracene	1000 U
(79B)	191-24-2	benzo(ghi)perylene	20000 U
(80B)	86-73-7	fluorene	1000 U
(81B)	85-01-8	phenanthrene	10000
(82B)	53-70-3	dibenzo(a,h)anthracene	20000
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	20000
(84B)	129-00-0	pyrene	10000
	62-53-3	aniline	1000 U
	100-51-6	benzyl alcohol	2000 U
	106-47-8	4-chloroaniline	5000 U
	132-64-9	dibenzofuran	1000 U
	91-57-6	2-methylnaphthalene	2000 U
	88-74-4	2-nitroaniline	10000 U
	99-09-2	3-nitroaniline	10000 U
	100-01-6	4-nitroaniline	10000 U

SAMPLE NUMBER [illegible] ORIGINAL

(red)

ORGANICS ANALYSIS DATA SHEET

LABORATORY NAME: ACUREX
SAMPLE ID NO: 840503001
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R. Scott

CASE NO.: 2755
GC REPORT NO.: 02
CONTRACT NO: 68-01-67~~5~~ 9~~4~~
DATE SAMPLE RECEIVED: 5-16-84

VOLATILES

CONCENTRATION: LOW
DATE EXTRACTED/PREPARED: 07/03/84
DATE ANALYZED: 07/03/84
PERCENT MOISTURE: Trip blank

FR.	CAS #	COMPOUND	UG/KG
	107-02-8	ACROLEIN	100 U
	107-13-1	ACRYLONITRILE	100 U
	71-43-2	BENZENE	5 U
	56-23-5	CARBON TETRACHLORIDE	5 U
	108-90-7	CHLOROBENZENE	5 U
	107-06-2	1,2-DICHLOROETHANE	1 U
	71-55-6	1,1,1-TRICHLOROETHANE	5 U
	75-34-3	1,1-DICHLOROETHANE	5 U
	79-00-5	1,1,2-TRICHLOROETHANE	5 U
	79-34-5	1,1,2,2-TETRACHLOROETHANE	10 U
	75-00-3	CHLOROETHANE	10 U
	110-75-8	2-CHLOROETHYLVINYL ETHER	10 U
	67-66-3	CHLOROFORM	5 U
	75-35-4	1,1-DICHLOROETHENE	5 U
	156-60-5	TRANS-1,2-DICHLOROETHENE	5 U
	78-87-5	1,2-DICHLOROPROPANE	10 U
	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
	100-41-4	ETHYLBENZENE	5 U
	75-09-2	METHYLENE CHLORIDE	220
	74-87-3	CHLOROMETHANE	10 U
	74-83-9	BROMOMETHANE	10 U
	75-25-2	BROMOFORM	10 U
	75-27-4	BROMODICHLOROMETHANE	5 U
	75-69-4	FLUOROTRICHLOROMETHANE	5 U
	75-71-8	DICHLORODIFLUOROMETHANE	5 U
	124-48-1	CHLORODIBROMOMETHANE	5 U
	127-18-4	TETRACHLOROETHENE	5 U
	108-88-3	TOLUENE	5 U
	79-01-6	TRICHLOROETHENE	5 U
	75-01-4	VINYL CHLORIDE	10 U
	67-64-1	ACETONE	10
	78-93-3	2-BUTANONE	5 U
	75-15-0	CARBONDISULFIDE	1 U
	519-78-6	2-HEXANONE	5 U
	108-10-1	4-METHYL-2-PENTANONE	5 U
	100-42-5	STYRENE	5 U
	108-05-4	VINYL ACETATE	5 U
	1330-20-7	TOTAL XYLENES	5 U

U = UNDETECTED AT THE LISTED DETECTION LIMIT
P = COMPOUND IS PRESENT BUT BELOW THE LISTED DETECTION LIMIT
E = AMOUNT IN BLANK IS GREATER THAN 1/2 THE AMOUNT DETECTED

AR100375

ORIGINAL

(red)

SAMPLE NUMBER: C4706

ORGANICS ANALYSIS DATA SHEET

LABORATORY NAME: ACUREX
CASE NO.: 2755
LAB SAMPLE ID NO.: 8405-030-1
QC REPORT NO.:
SAMPLE MATRIX: SOIL
CONTRACT NO.: 68-01-6782
DATA RELEASE AUTHORIZED BY: R. Scott
DATE SAMPLE RECEIVED: 5-16-1984

PESTICIDES

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-3-1984
PERCENT MOISTURE: Trip blank
CONCENTRATION FACTOR: 2

PP#	CAS #	COMPOUND	UG/KG
(89P)	309-00-2	ALDRIN	.2 U
(90P)	60-57-1	DIELDRIN	.2 U
(91P)	57-74-9	CHLORDANE	2 U
(92P)	50-29-3	4,4'-DDT	.5 U
(93P)	72-55-9	4,4'-DDE	.2 U
(94P)	72-54-8	4,4'-DDD	.5 U
(95P)	115-29-7	α-ENDOSULFAN	.2 U
(96P)	115-29-7	β-ENDOSULFAN	.2 U
(97P)	1031-07-8	ENDOSULFAN SULFATE	.5 U
(98P)	72-20-8	ENDRIN	.2 U
(99P)	7421-93-4	ENDRIN ALDEHYDE	.5 U
(100P)	76-44-8	HEPTACHLOR	.2 U
(101P)	1024-57-3	HEPTACHLOR EPOXIDE	.2 U
(102P)	319-84-6	α-BHC	.2 U
(103P)	319-85-7	β-BHC	.2 U
(104P)	319-86-8	δ-BHC	.2 U
(105P)	58-89-9	gamma-BHC (lindane)	.2 U
(106P)	53469-21-9	PCB-1242	2 U
(107P)	11097-69-1	PCB-1254	5 U
(108P)	11104-28-2	PCB-1221	5 U
(109P)	11141-16-5	PCB-1232	5 U
(110P)	12672-29-6	PCB-1248	5 U
(111P)	11096-82-5	PCB-1260	10 U
(112P)	12674-11-2	PCB-1016	2 U
(113P)	8001-35-2	TOXAPHENE	2 U

DIOXINS

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-1-1984
PERCENT MOISTURE: Trip blank
CONCENTRATION FACTOR: 20

PP#	CAS #	COMPOUND	UG/KG
(129B)	1746-01-6	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	.2 U

AR100376

U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
ORIGINAL

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: Acurex
Case No: 2755 (red)
Lab Sample ID No: B405-030-2
QC Report No:
Sample Matrix: Soil
Contract No.: 68-01-6782
Data Release Authorized By: Richard Scott
Date Sample Received: 5-16-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: (LOW) MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 5-17-84
DATE ANALYZED: 8-23-84
PERCENT MOISTURE: 11
CONC./DILUTION FACTOR: 10

PP #	CAS #		ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	600 U
(22A)	59-50-7	p-chloro-m-cresol	600 U
(24A)	95-57-8	2- chlorophenol	600 U
(31A)	120-83-2	2,4-dichlorophenol	600 U
(34A)	105-67-9	2,4-dimethylphenol	600 U
(57A)	88-75-5	2- nitrophenol	10000 U
(58A)	100-02-7	4-nitrophenol	30000 U
(59A)	51-28-5	2,4-dinitrophenol	30000 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	10000 U
(64A)	87-86-5	pentachlorophenol	6000 U
(65A)	108-95-2	phenol	10000 U
	65-85-0	benzoic acid	60000 U
	95-48-7	2-methylphenol	3000 U
	108-39-4	4-methylphenol	3000 U
	95-95-4	2,4,5-trichlorophenol	60000 U
(1B)	83-32-9	acenaphthene	6000 U
(5B)	92-87-5	benzidine	20000 U
(8B)	120-82-1	1,2,4-trichlorobenzene	6000 U
(9B)	118-74-1	hexachlorobenzene	6000 U
(12B)	67-72-1	hexachloroethane	6000 U
(18B)	111-44-4	bis(2-chloroethyl)ether	6000 U
(20B)	91-58-7	2-chloronaphthalene	6000 U
(25B)	95-50-1	1,2-dichlorobenzene	6000 U
(26B)	541-73-1	1,3-dichlorobenzene	6000 U
(27B)	106-46-7	1,4-dichlorobenzene	6000 U
(28B)	91-94-1	3,3'-dichlorobenzidine	10000 U
(35B)	121-14-2	2,4-dinitrotoluene	10000 U
(36B)	606-20-2	2,6-dinitrotoluene	10000 U
(37B)	122-66-7	1,2-diphenylhydrazine	10000 U
(39B)	206-44-0	fluoranthene	6000 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	6000 U
(41B)	101-55-3	4-bromophenyl phenyl ether	6000 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	10000 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	10000 U

PP #	CAS #		ug/l or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	6000 U
(53B)	77-47-4	hexachlorocyclopentadiene	6000 U
(54B)	78-59-1	isophorone	6000 U
(55B)	91-20-3	naphthalene	6000 U
(56B)	98-95-3	nitrobenzene	6000 U
(61B)	62-75-9	N-nitrosodimethylamine	6000 U
(62B)	86-30-6	N-nitrosodiphenylamine	6000 U
(63B)	621-64-7	N-nitrosodipropylamine	6000 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	6000 U
(67B)	85-68-7	benzyl butyl phthalate	6000 U
(68B)	84-74-2	di-n-butyl phthalate	6000 U
(69B)	117-84-0	di-n-octyl phthalate	6000 U
(70B)	84-66-2	diethyl phthalate	6000 U
(71B)	131-11-3	dimethyl phthalate	6000 U
(72B)	56-55-3	benzo(a)anthracene	6000 U
(73B)	50-32-8	benzo(a)pyrene	10000 U
(74B)	205-99-2	benzo(b)fluoranthene	10000 U
(75B)	207-08-9	benzo(k)fluoranthene	10000 U
(76B)	218-01-9	chrysene	10000 U
(77B)	208-96-8	acenaphthylene	6000 U
(78B)	120-12-7	anthracene	6000 U
(79B)	191-24-2	benzo(ghi)perylene	10000 U
(80B)	86-73-7	fluorene	6000 U
(81B)	85-01-8	phenanthrene	6000 U
(82B)	53-70-3	dibenzo(a,h)anthracene	10000 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	10000 U
(84B)	129-00-0	pyrene	6000 U
	62-53-3	aniline	6000 U
	100-51-6	benzyl alcohol	10000 U
	106-47-8	4-chloroaniline	30000 U
	132-64-9	dibenzofuran	6000 U
	91-57-6	2-methylnaphthalene	10000 U
	88-74-4	2-nitroaniline	60000 U
	99-09-2	3-nitroaniline	60000 U
	100-01-6	4-nitroaniline	60000 U

SAMPLE NUMBER [illegible]

ORIGINAL (red)

ORGANICS ANALYSIS DATA SHEET

LABORATORY NAME: ACUREX
EPA SAMPLE ID NO.: B4050302
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R. Scott

CASE NO.: 2755
QC REPORT NO.:
CONTRACT NO.: 68-01-67~~-9~~ 82 9N
DATE SAMPLE RECEIVED: 5-16-84

VOLATILES

CONCENTRATION: LOW
DATE EXTRACTED/PREPARED: 07/03/84
DATE ANALYZED: 07/03/84
PERCENT MOISTURE: 11

PP#	CAS #	COMPOUND	UG/KG
(2V)	107-02-8	ACROLEIN	105 U
(3V)	107-13-1	ACRYLONITRILE	105 U
(4V)	71-43-2	BENZENE	5 U
(6V)	56-23-5	CARBON TETRACHLORIDE	5 U
(7V)	108-90-7	CHLOROBENZENE	5 U
(10V)	107-06-2	1,2-DICHLOROETHANE	1 U
(11V)	71-55-6	1,1,1-TRICHLOROETHANE	5 U
(13V)	75-34-3	1,1-DICHLOROETHANE	5 U
(14V)	79-00-5	1,1,2-TRICHLOROETHANE	5 U
(15V)	79-34-5	1,1,2,2-TETRACHLOROETHANE	10 U
(16V)	75-00-3	CHLOROETHANE	10 U
(17V)	110-75-8	2-CHLOROETHYLVINYL ETHER	10 U
(23V)	67-66-3	CHLOROFORM	5 K
(25V)	75-35-4	1,1-DICHLOROETHENE	5 U
(30V)	156-60-5	TRANS-1,2-DICHLOROETHENE	5 U
(32V)	78-87-5	1,2-DICHLOROPROPANE	10 U
(33V)	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
( )	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
(38V)	100-41-4	ETHYLBENZENE	5 U
(44V)	75-09-2	METHYLENE CHLORIDE	730
(45V)	74-87-3	CHLOROMETHANE	10 U
(46V)	74-83-9	BROMOMETHANE	10 U
(47V)	75-25-2	BROMOFORM	10 U
(48V)	75-27-4	BROMODICHLOROMETHANE	5 U
(49V)	75-69-4	FLUOROTRICHLOROMETHANE	5 U
(50V)	75-71-8	DICHLORODIFLUOROMETHANE	5 U
(51V)	124-48-1	CHLORODIBROMOMETHANE	5 U
(85V)	127-18-4	TETRACHLOROETHENE	5 U
(86V)	108-88-3	TOLUENE	5 K
(87V)	79-01-6	TRICHLOROETHENE	5 U
(88V)	75-01-4	VINYL CHLORIDE	10 U
( )	67-64-1	ACETONE	15
( )	78-93-3	2-BUTANONE	5 U
( )	75-15-0	CARBONDISULFIDE	1 U
( )	519-78-6	2-HEXANONE	5 U
( )	108-10-1	4-METHYL-2-PENTANONE	5 U
( )	100-42-5	STYRENE	5 U
( )	108-05-4	VINYL ACETATE	5 U
( )	1330-20-7	TOTAL XYLENES	5 U

U = UNDETECTED AT THE LISTED DETECTION LIMIT
K = COMPOUND IS PRESENT, BUT BELOW THE LISTED DETECTION LIMIT
B = AMOUNT IN BLANK IS GREATER THAN 1/2 THE AMOUNT DETECTED

AR100378

ORIGINAL (red)

SAMPLE NUMBER: C4701

ORGANICS ANALYSIS DATA SHEET

LABORATORY NAME: ACUREX
LAB SAMPLE ID NO.: 8405-030-2
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R. Scott

CASE NO.: 2755
QC REPORT NO.:
CONTRACT NO.: 68-01-6782
DATE SAMPLE RECEIVED: 5-16-1984

PESTICIDES

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-3-1984
PERCENT MOISTURE: 11
CONCENTRATION FACTOR: 2

PP#	CAS #	COMPOUND	UG/KG
(89P)	309-00-2	ALDRIN	.2 U
(90P)	60-57-1	DIELDRIN	.2 U
(91P)	57-74-9	CHLORDANE	2 U
(92P)	50-29-3	4,4'-DDT	.5 U
(93P)	72-55-9	4,4'-DDE	.2 U
(94P)	72-54-8	4,4'-DDD	.5 U
(95P)	115-29-7	α-ENDOSULFAN	.2 U
(96P)	115-29-7	β-ENDOSULFAN	.2 U
P)	1031-07-8	ENDOSULFAN SULFATE	.5 U
(98P)	72-20-8	ENDRIN	.2 U
(99P)	7421-93-4	ENDRIN ALDEHYDE	.5 U
(100P)	76-44-8	HEPTACHLOR	.2 U
(101P)	1024-57-3	HEPTACHLOR EPOXIDE	.2 U
(102P)	319-84-6	α-BHC	.2 U
(103P)	319-85-7	β-BHC	.2 U
(104P)	319-86-8	δ-BHC	.2 U
(105P)	58-89-9	gamma-BHC (lindane)	.2 U
(106P)	53469-21-9	PCB-1242	2 U
(107P)	11097-69-1	PCB-1254	5 U
(108P)	11104-28-2	PCB-1221	5 U
(109P)	11141-16-5	PCB-1232	5 U
(110P)	12672-29-6	PCB-1248	5 U
(111P)	11096-82-5	PCB-1260	10 U
(112P)	12674-11-2	PCB-1016	2 U
(113P)	8001-35-2	TOXAPHENE	2 U

DIOXINS

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-1-1984
PERCENT MOISTURE: 11
'CENTRATION FACTOR: 20

PP#	CAS #	COMPOUND	UG/KG
(129B)	1746-01-6	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	.2 U

U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number 64702

ORIGIN (red)

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: Acurex
Case No: 2755
Lab Sample ID No: B405-030-3
QC Report No:
Sample Matrix: Soil
Contract No.: 68-01-6782
Data Release Authorized By: Richard Scott
Date Sample Received: 5-16-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: (LOW) MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 5-17-84
DATE ANALYZED: 6-27-84
PERCENT MOISTURE: 13
CONC./DILUTION FACTOR: 10

PP #	CAS #		ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	600 U
(22A)	59-50-7	p-chloro-m-cresol	600 U
(24A)	95-57-8	2- chlorophenol	600 U
(31A)	120-83-2	2,4-dichlorophenol	600 U
(34A)	105-67-9	2,4-dimethylphenol	600 U
(57A)	88-75-5	2- nitrophenol	10000 U
(58A)	100-02-7	4-nitrophenol	30000 U
(59A)	51-28-5	2,4-dinitrophenol	30000 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	10000 U
(64A)	87-86-5	pentachlorophenol	6000 U
(65A)	108-95-2	phenol	10000 U
	65-85-0	benzoic acid	60000 U
	95-48-7	2-methylphenol	3000 U
	108-39-4	4-methylphenol	3000 U
	95-95-4	2,4,5-trichlorophenol	60000 U
(1B)	83-32-9	acenaphthene	6000 U
(5B)	92-87-5	benzidine	20000 U
(8B)	120-82-1	1,2,4-trichlorobenzene	6000 U
(9B)	118-74-1	hexachlorobenzene	6000 U
(12B)	67-72-1	hexachloroethane	6000 U
(18B)	111-44-4	bis(2-chloroethyl)ether	6000 U
(20B)	91-58-7	2-chloronaphthalene	6000 U
(25B)	95-50-1	1,2-dichlorobenzene	6000 U
(26B)	541-73-1	1,3-dichlorobenzene	6000 U
(27B)	106-46-7	1,4-dichlorobenzene	6000 U
(28B)	91-94-1	3,3'-dichlorobenzidine	10000 U
(35B)	121-14-2	2,4-dinitrotoluene	10000 U
(36B)	606-20-2	2,6-dinitrotoluene	10000 U
(37B)	122-66-7	1,2-diphenylhydrazine	10000 U
(39B)	206-44-0	fluoranthene	6000 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	6000 U
(41B)	101-55-3	4-bromophenyl phenyl ether	6000 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	10000 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	10000 U

PP #	CAS #		ug/l or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	6000 U
(53B)	77-47-4	hexachlorocyclopentadiene	6000 U
(54B)	78-59-1	isophorone	6000 U
(55B)	91-20-3	naphthalene	6000 U
(56B)	98-95-3	nitrobenzene	6000 U
(61B)	62-75-9	N-nitrosodimethylamine	6000 U
(62B)	86-30-6	N-nitrosodiphenylamine	6000 U
(63B)	621-64-7	N-nitrosodipropylamine	6000 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	6000 U
(67B)	85-68-7	benzyl butyl phthalate	6000 U
(68B)	84-74-2	di-n-butyl phthalate	6000 U
(69B)	117-84-0	di-n-octyl phthalate	6000 U
(70B)	84-66-2	diethyl phthalate	6000 U
(71B)	131-11-3	dimethyl phthalate	6000 U
(72B)	56-55-3	benzo(a)anthracene	6000 U
(73B)	50-32-8	benzo(a)pyrene	10000 U
(74B)	205-99-2	benzo(b)fluoranthene	10000 U
(75B)	207-08-9	benzo(k)fluoranthene	10000 U
(76B)	218-01-9	chrysene	10000 U
(77B)	208-96-8	acenaphthylene	6000 U
(78B)	120-12-7	anthracene	6000 U
(79B)	191-24-2	benzo(ghi)perylene	10000 U
(80B)	86-73-7	fluorene	6000 U
(81B)	85-01-8	phenanthrene	6000 U
(82B)	53-70-3	dibenzo(a,h)anthracene	10000 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	10000 U
(84B)	129-00-0	pyrene	6000 U
	62-53-3	aniline	6000 U
	100-51-6	benzyl alcohol	10000 U
	106-47-8	4-chloroaniline	30000 U
	132-64-9	dibenzofuran	6000 U
	91-57-6	2-methylnaphthalene	10000 U
	88-74-4	2-nitroaniline	60000 U
	99-09-2	3-nitroaniline	60000 U
	100-01-6	4-nitroaniline	60000 U

SAMPLE NUMBER: C4702

ORGANICS ANALYSIS DATA SHEET

ORIGINAL (red)

LABORATORY NAME: ACUREX
SAMPLE ID NO: '8405030C3
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R. Scott

CASE NO.: 2755
QC REPORT NO: -02
CONTRACT NO.: 68-01-67~~6~~ 9N
DATE SAMPLE RECEIVED: 5-16-84

VOLATILES

CONCENTRATION: LOW
DATE EXTRACTED/PREPARED: 07/03/84
DATE ANALYZED: 07/03/84
PERCENT MOISTURE: 13

FP#	CAS #	COMPOUND	UG/KG
(2V)	107-02-8	ACROLEIN	106 U
(3V)	107-13-1	ACRYLONITRILE	106 U
(4V)	71-43-2	BENZENE	5 U
(5V)	56-23-5	CARBON TETRACHLORIDE	5 U
(7V)	108-90-7	CHLOROBENZENE	5 U
(10V)	107-06-2	1,2-DICHLOROETHANE	1 U
(11V)	71-55-6	1,1,1-TRICHLOROETHANE	5 U
(13V)	75-34-3	1,1-DICHLOROETHANE	5 U
(14V)	79-00-5	1,1,2-TRICHLOROETHANE	5 U
(15V)	79-34-5	1,1,2,2-TETRACHLOROETHANE	11 U
(16V)	75-00-3	CHLOROETHANE	11 U
(17V)	110-75-8	2-CHLOROETHYLVINYL ETHER	11 U
(23V)	67-66-3	CHLOROFORM	5 K
(29V)	75-35-4	1,1-DICHLOROETHENE	5 U
(30V)	156-60-5	TRANS-1,2-DICHLOROETHENE	5 U
(32V)	78-87-5	1,2-DICHLOROPROPANE	11 U
(33V)	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
(34V)	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
(35V)	100-41-4	ETHYLBENZENE	5 U
(44V)	75-09-2	METHYLENE CHLORIDE	450 —
(45V)	74-87-3	CHLOROMETHANE	11 U
(46V)	74-83-9	BROMOMETHANE	11 U
(47V)	75-25-2	BROMOFORM	11 U
(48V)	75-27-4	BROMODICHLOROMETHANE	5 U
(49V)	75-69-4	FLUOROTRICHLOROMETHANE	5 U
(50V)	75-71-8	DICHLORODIFLUOROMETHANE	5 U
(51V)	124-48-1	CHLORODIBROMOMETHANE	5 U
(85V)	127-18-4	TETRACHLOROETHENE	5 U
(86V)	108-88-3	TOLUENE	5 K
(87V)	79-01-6	TRICHLOROETHENE	5 U
(83V)	75-01-4	VINYL CHLORIDE	11 U
(10)	67-64-1	ACETONE	9 —
(74)	78-93-3	2-BUTANONE	5 U
(75)	75-15-0	CARBON DISULFIDE	1 U
(77)	519-78-6	2-HEXANONE	5 U
(78)	108-10-1	4-METHYL-2-PENTANONE	5 U
(79)	100-42-5	STYRENE	5 U
(80)	108-05-4	VINYL ACETATE	5 U
(81)	1330-20-7	TOTAL XYLENES	5 U

U = UNDETECTED AT THE LISTED DETECTION LIMIT
K = COMPOUND IS PRESENT, BUT BELOW THE LISTED DETECTION LIMIT
B = AMOUNT IN BLANK IS GREATER THAN 1/2 THE AMOUNT DETECTED

AR100381

SAMPLE NUMBER: C4702 ORIGINAL (red)

ORGANICS ANALYSIS DATA SHEET

LABORATORY NAME: ACUREX
LAB SAMPLE ID NO.: 8405-030-3
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R. Scott
CASE NO.: 2755
QC REPORT NO.:
CONTRACT NO.: 68-01-6782
DATE SAMPLE RECEIVED: 5-16-1984

PESTICIDES

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-3-1984
PERCENT MOISTURE: 13
CONCENTRATION FACTOR: 2

PP#	CAS #	COMPOUND	UG/KG
(89P)	309-00-2	ALDRIN	.2 U
(90P)	60-57-1	DIELDRIN	.2 U
(91P)	57-74-9	CHLORDANE	2 U
(92P)	50-29-3	4,4'-DDT	.5 U
(93P)	72-55-9	4,4'-DDE	.2 U
(94P)	72-54-8	4,4'-DDD	.5 U
(95P)	115-29-7	α-ENDOSULFAN	.2 U
(96P)	115-29-7	β-ENDOSULFAN	.2 U
(97P)	1031-07-8	ENDOSULFAN SULFATE	.5 U
(98P)	72-20-8	ENDRIN	.2 U
(99P)	7421-93-4	ENDRIN ALDEHYDE	.5 U
(100P)	76-44-8	HEPTACHLOR	.2 U
(101P)	1024-57-3	HEPTACHLOR EPOXIDE	.2 U
(102P)	319-84-6	α-BHC	.2 U
(103P)	319-85-7	β-BHC	.2 U
(104P)	319-86-8	δ-BHC	.2 U
(105P)	58-89-9	gamma-BHC (lindane)	.2 U
(106P)	53469-21-9	PCB-1242	2 U
(107P)	11097-69-1	PCB-1254	5 U
(108P)	11104-28-2	PCB-1221	5 U
(109P)	11141-16-5	PCB-1232	5 U
(110P)	12672-29-6	PCB-1248	5 U
(111P)	11096-82-5	PCB-1260	10 U
(112P)	12674-11-2	PCB-1016	2 U
(113P)	8001-35-2	TOXAPHENE	2 U

DIOXINS

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-1-1984
PERCENT MOISTURE: 13
CONCENTRATION FACTOR: 20

PP#	CAS #	COMPOUND	UG/KG
(129B)	1746-01-6	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	.2 U

U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number C4703

ORIGINAL

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: Acurex
Case No: 2755
b Sample ID No: B405-030-4
QC Report No: (red)
Sample Matrix: Soil
Contract No.: 68-01-6782
Data Release Authorized By: Richard Scott
Date Sample Received: 5-16-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: (LOW) MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 5-17-84
DATE ANALYZED: 8-24-84
PERCENT MOISTURE: 12
CONC./DILUTION FACTOR: 10

PP #	CAS #		ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	600 U
(22A)	59-50-7	p-chloro-m-cresol	600 U
(24A)	95-57-8	2- chlorophenol	600 U
(31A)	120-83-2	2,4-dichlorophenol	600 U
(34A)	105-67-9	2,4-dimethylphenol	600 U
(57A)	88-75-5	2- nitrophenol	1000 U
(58A)	100-02-7	4-nitrophenol	3000 U
(59A)	51-28-5	2,4-dinitrophenol	3000 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	1000 U
(64A)	87-86-5	pentachlorophenol	600 U
(65A)	108-95-2	phenol	1000 U
	65-85-0	benzoic acid	6000 U
	95-48-7	2-methylphenol	300 U
	108-39-4	4-methylphenol	300 U
	95-95-4	2,4,5-trichlorophenol	6000 U
(1B)	83-32-9	acenaphthene	600 U
(5B)	92-87-5	benzidine	2000 U
(8B)	120-82-1	1,2,4-trichlorobenzene	600 U
(9B)	118-74-1	hexachlorobenzene	600 U
(12B)	67-72-1	hexachloroethane	600 U
(18B)	111-44-4	bis(2-chloroethyl)ether	600 U
(20B)	91-58-7	2-chloronaphthalene	600 U
(25B)	95-50-1	1,2-dichlorobenzene	600 U
(26B)	541-73-1	1,3-dichlorobenzene	600 U
(27B)	106-46-7	1,4-dichlorobenzene	600 U
(28B)	91-94-1	3,3'-dichlorobenzidine	1000 U
(35B)	121-14-2	2,4-dinitrotoluene	1000 U
(36B)	606-20-2	2,6-dinitrotoluene	1000 U
(37B)	122-66-7	1,2-diphenylhydrazine	1000 U
(39B)	206-44-0	fluoranthene	600 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	600 U
(41B)	101-55-3	4-bromophenyl phenyl ether	600 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	1000 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	1000 U

PP #	CAS #		ug/l or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	600 U
(53B)	77-47-4	hexachlorocyclopentadiene	600 U
(54B)	78-59-1	isophorone	600 U
(55B)	91-20-3	naphthalene	600 U
(56B)	98-95-3	nitrobenzene	600 U
(61B)	62-75-9	N-nitrosodimethylamine	600 U
(62B)	86-30-6	N-nitrosodiphenylamine	600 U
(63B)	621-64-7	N-nitrosodipropylamine	600 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	600 U
(67B)	85-68-7	benzyl butyl phthalate	600 U
(68B)	84-74-2	di-n-butyl phthalate	600 U
(69B)	117-84-0	di-n-octyl phthalate	600 U
(70B)	84-66-2	diethyl phthalate	600 U
(71B)	131-11-3	dimethyl phthalate	600 U
(72B)	56-55-3	benzo(a)anthracene	600 U
(73B)	50-32-8	benzo(a)pyrene	1000 U
(74B)	205-99-2	benzo(b)fluoranthene	1000 U
(75B)	207-08-9	benzo(k)fluoranthene	1000 U
(76B)	218-01-9	chrysene	1000 U
(77B)	208-96-8	acenaphthylene	600 U
(78B)	120-12-7	anthracene	600 U
(79B)	191-24-2	benzo(ghi)perylene	1000 U
(80B)	86-73-7	fluorene	600 U
(81B)	85-01-8	phenanthrene	600 U
(82B)	53-70-3	dibenzo(a,h)anthracene	1000 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	1000 U
(84B)	129-00-0	pyrene	600 U
	62-53-3	aniline	600 U
	100-51-6	benzyl alcohol	1000 U
	106-47-8	4-chloroaniline	3000 U
	132-64-9	dibenzofuran	600 U
	91-57-6	2-methylnaphthalene	1000 U
	88-74-4	2-nitroaniline	6000 U
	99-09-2	3-nitroaniline	6000 U
	100-01-6	4-nitroaniline	6000 U

SAMPLE NUMBER: C4703

ORGANICS ANALYSIS DATA SHEET

ORIGINAL

LABORATORY NAME: ACUREX
LAB SAMPLE ID NO.: 840503004
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R Scott

CASE NO.: 2755
GC REPORT NO.:
CONTRACT NO.: 68-01-67[illegible] 82 9N (red)
DATE SAMPLE RECEIVED: 5-16-84

VOLATILES

CONCENTRATION: LOW
DATE EXTRACTED/PREPARED: 07/03/84
DATE ANALYZED: 07/03/84
PERCENT MOISTURE: 12

PP#	CAS #	COMPOUND	UG/KG
(2V)	107-02-8	ACROLEIN	110 U
(3V)	107-13-1	ACRYLONITRILE	110 U
(4V)	71-43-2	BENZENE	5 U
(6V)	56-23-5	CARBON TETRACHLORIDE	5 U
(7V)	108-90-7	CHLOROBENZENE	5 U
(10V)	107-06-2	1,2-DICHLOROETHANE	1 U
(11V)	71-55-6	1,1,1-TRICHLOROETHANE	5 U
(13V)	75-34-3	1,1-DICHLOROETHANE	5 U
(14V)	79-00-5	1,1,2-TRICHLOROETHANE	5 U
(15V)	79-34-5	1,1,2,2-TETRACHLOROETHANE	11 U
(V)	75-00-3	CHLOROETHANE	11 U
V)	110-75-8	2-CHLOROETHYLVINYL ETHER	11 U
(22V)	67-66-3	CHLOROFORM	5 U
(29V)	75-35-4	1,1-DICHLOROETHENE	5 U
(30V)	156-60-5	TRANS-1,2-DICHLOROETHENE	5 U
(32V)	78-87-5	1,2-DICHLOROPROPANE	11 U
(33V)	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
( )	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
(38V)	100-41-4	ETHYLBENZENE	5 U
(44V)	75-09-2	METHYLENE CHLORIDE	1600 —
(45V)	74-87-3	CHLOROMETHANE	11 U
(46V)	74-83-9	BROMOMETHANE	11 U
(47V)	75-25-2	BROMOFORM	11 U
(49V)	75-27-4	BROMODICHLOROMETHANE	5 U
(49V)	75-69-4	FLUOROTRICHLOROMETHANE	5 U
(50V)	75-71-8	DICHLORODIFLUOROMETHANE	5 U
(51V)	124-48-1	CHLORODIBROMOMETHANE	5 U
(85V)	127-18-4	TETRACHLOROETHENE	5 U
(86V)	108-88-3	TOLUENE	(5 K)
(87V)	79-01-6	TRICHLOROETHENE	5 U
(88V)	75-01-4	VINYL CHLORIDE	11 U
( )	67-64-1	ACETONE	23 —
( )	78-93-3	2-BUTANONE	5 U
( )	75-15-0	CARBONDISULFIDE	1 U
( )	519-78-6	2-HEXANONE	5 U
( )	108-10-1	4-METHYL-2-PENTANONE	5 U
( )	100-42-5	STYRENE	5 U
( )	108-05-4	VINYL ACETATE	5 U
( )	1330-20-7	TOTAL XYLENES	5 U

U = UNDETECTED AT THE LISTED DETECTION LIMIT
K = COMPOUND IS PRESENT, BUT BELOW THE LISTED DETECTION LIMIT
B = AMOUNT IN BLANK IS GREATER THAN 1/2 THE AMOUNT DETECTED

SAMPLE NUMBER: C4703

ORIGINAL (red)

. ORGANICS ANALYSIS DATA SHEET

LABORATORY NAME: ACUREX
LAB SAMPLE ID NO.: 8405-030-4
SAMPLE MATRIX: SOIL
DATA RELEASE AUTHORIZED BY: R. Scott

CASE NO.: 2755
QC REPORT NO.:
CONTRACT NO.: 68-01-6782
DATE SAMPLE RECEIVED: 5-16-1984

PESTICIDES

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-3-1984
PERCENT MOISTURE: 12
CONCENTRATION FACTOR: 2

PP#	CAS #	COMPOUND	UG/KG
(89P)	309-00-2	ALDRIN	.2 U
(90P)	60-57-1	DIELDRIN	.2 U
(91P)	57-74-9	CHLORDANE	2 U
(92P)	50-29-3	4,4'-DDT	.5 U
(93P)	72-55-9	4,4'-DDE	.2 U
(94P)	72-54-8	4,4'-DDD	.5 U
(95P)	115-29-7	α-ENDOSULFAN	.2 U
(96P)	115-29-7	β-ENDOSULFAN	.2 U
7P)	1031-07-8	ENDOSULFAN SULFATE	.5 U
8P)	72-20-8	ENDRIN	.2 U
(99P)	7421-93-4	ENDRIN ALDEHYDE	.5 U
(100P)	76-44-8	HEPTACHLOR	.2 U
(101P)	1024-57-3	HEPTACHLOR EPOXIDE	.2 U
(102P)	319-84-6	α-BHC	.2 U
(103P)	319-85-7	β-BHC	.2 U
(104P)	319-86-8	δ-BHC	.2 U
(105P)	58-89-9	gamma-BHC (lindane)	.2 U
(106P)	53469-21-9	PCB-1242	2 U
(107P)	11097-69-1	PCB-1254	5 U
(108P)	11104-28-2	PCB-1221	5 U
(109P)	11141-16-5	PCB-1232	5 U
(110P)	12672-29-6	PCB-1248	5 U
(111P)	11096-82-5	PCB-1260	10 U
(112P)	12674-11-2	PCB-1016	2 U
(113P)	8001-35-2	TOXAPHENE	2 U

DIOXINS

CONCENTRATION: LOW
DATE EXTRACTED: 5-18-1984
DATE ANALYZED: 8-1-1984
PERCENT MOISTURE: 12
CONCENTRATION FACTOR: 20

PP#	CAS #	COMPOUND	UG/KG
(129B)	1746-01-6	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	.2 U

NUS CORPORATION
SUPERFUND DIVISION

DOCUMENT TRANSMITTAL

ORIGINAL (red)

TO: Walter Graham
EPA III

DATE: 10/23/84

REFERENCE NUMBER: 0749.14

SENDER: R. Ninesteel

THE FOLLOWING DOCUMENT(S) IS TRANSMITTED TO YOU FOR: ☐ USE ☒ RECORDS ☐ INFORMATION

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Letter from Daniel K. Donnelly to Rich Ninesteel, dated October 18, 1984, [redacted] with appended analytical data (resampling of monitoring wells 8A & 8B) at the Lackawanna Refuse Site.		1		

NC

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AR100386

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

ORIGINAL
(red)

October 18, 1984

Rich Ninesteel
N.U.S. Corporation
Park W. Two Cliff Mine Road
Pittsburgh, Pennsylvania 15275

Dear Rich:

Enclosed please find the Extractable, VOA, and PCB/Pesticide reports from the Lackawanna sampling site.

Sincerely,

Dan Donnelly

Daniel K. Donnelly
Chief, Annapolis Laboratory

DKD:jr

Enclosure
a/s

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

(red) 301-224-2740
FTS-922-3752

ORIGINAL

DATE : October 15, 1984

SUBJECT: GC/MS Analysis of Lackawanna Samples
Superfund Remedial, 840918-06 - 09

FROM : John Austin JA
Chemist

Joseph L. Slayton JS
Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Lab

The samples were examined for the presence of organic compounds listed as "Base/Neutral" and "Acid" extractable priority pollutants using fused silica capillary column/gas chromatography/mass spectrometry. Concentrations of these compounds were determined using the relative response of authentic standards to the internal standard.

The samples were also examined for the presence of compounds in addition those on the priority pollutant list. Tentative identification of these compounds was made on the comparison of sample spectra to the EPA/NIH Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the internal standard.

All reported values have been corrected for any blank contamination.

Sample Description:

Lab No.	Description
840918-06	Lackawanna, LA-MW-08A
-07	Lackawanna, LA-MW-08AA
-08	Lackawanna, LA-MW-08B
-09	Lackawanna, LA-MW-000

JA/JS:ad

cc: P. J. Krantz
QAO, CRL

Project Name: Lackawanna - Superfund Remedial

Sample Number:	(NDL) = Nominal Detection Limits ug/L	840918-06 DL=(2)xNDL	840918-07 DL=(2)xNDL	840918-08 DL=(20)xNDL	840918-09 DL=(2)xNDL
BASE/NEUTRAL EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS					
Parameter	Cas Number				
Bis(2-Ethylhexyl) Phthalate	117-81-7	10	*	*	*	*
Di-n-Butylphthalate	84-74-2	10	*	*	*	*

*Not detected after blank correction.

ORIGINAL (red)

ORIGINAL

Project Name: Lackawanna - Superfund Remedial (red)

Sample Number: 840918-06

Combined Extract

OTHER COMPOUNDS

Scan No.	Tentative Identification	Estimated Conc. ppb
None		

Sample Number: 840918-07

Combined Extract

OTHER COMPOUNDS

Scan No.	Tentative Identification	Estimated Conc. ppb
None		

Sample Number: 840918-08

Combined Extract

OTHER COMPOUNDS

Scan No.	Tentative Identification	Estimated Conc. ppb
995	Octanoic acid	280
1220	Decanoic acid	1700
1426	Dodecanoic acid	1100
1780	Hexadecanoic acid	150
2449	[2-Hydroxy-4-(octyloxy)phenyl]phenyl-methanone	40

Surrogate Rocovery

ORIGINAL (red)

Sample No.	% Recovery 2-Fluoro-phenol	D5-Phenol	D5-Nitro-benzene	2-Fluoro 1,1'-biphenyl	2,4,6-Tribromo-phenol	D14 Terphenyl
Target Limits for (Contract Lab Program)						
Water	23-107	15-96	41-120	44-119	20-105	33-128
840918-06	14.6*	4.8*	82.6	78.7	33.3	91.4
-07	8.1*	5.3*	72.9	74.0	25.6	91.4
-08	20.1	17.6	75.2	83.8	84.2	76.0
-09	59.9	40.1	86.7	82.4	95.9	96.4

*Matrix effect evident. The detection limits for acidic compounds in these samples may be higher than indicated.

Quality Control

1. Before acquisition of any samples the mass spectrometer is calibrated using FC43.
2. The calibration is verified by obtaining the spectra of a known compound (DFTPP). All mass assignments and relative abundances are found to be in acceptable ranges or the instrument is adjusted until suitable spectra of the known are obtained.
3. Immediately before analysis each sample is spiked with an internal standard D10-phenanthrene. All quantitation or estimates of concentration are made in comparison to the internal standard.
4. Mixed standards of extractable priority pollutants are analyzed before each group of samples. The relative response of each compound versus the internal standard is determined for use in quantitation.
5. For each group of samples extracted a method blank is prepared and examined for laboratory introduced contamination.
6. The samples were spiked with mixture of surrogate compounds prior to analysis. Recovery for each was determined to check for matrix effect.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

ORIGINAL

(red)

DATE : October 12, 1984

SUBJECT: Lackawanna Water Samples for VOC's by GC/MS
Superfund Remedial, 4TFA93RD46, (9/20/84 - 10/9/84) 840918-06 - 09

FROM : Rick Dreisch RD
Chemist

Diana Pickens DP
Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Lab

THRU : John Austin JA
Team Leader, Organic Analysis Section

The above samples were analyzed for volatile organic compounds amenable to the purge and trap technique and detectable by GC/MS. The nominal detection limit was 1 ppb (ug/L). The standard operating procedures, for blanks accompaning the samples, were not followed. The blanks were prepared 3 days after the samples were taken. Nevertheless the samples were analyzed. No reportable compounds were found. The blank sample contained numerous alkane hydrocarbons not found in the samples. The source of this contamination should be identified and resolved.

Sample Description:

Lab No.	Description
840918-06	Lackawanna, LA-MW-08A
-07	Lackawanna, LA-MW-08AA
-08	Lackawanna, LA-MW-08B
-09	Lackawanna, LA-MW-000

QA Summary

	Average % Recovery
	9/20
Bromochloromethane	124 ± 9
1,4-Dichlorobutane	114 ± 9
para-Bromofluorobenzene	111 ± 3
n =	6

RD/DP:ad

cc: P. J. Krantz
QAO, CRL

AR100392

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

ORIGINAL
(red)

DATE : October 11, 1984

SUBJECT: PCB/Pesticide Results for Water Samples from Lackawanna Superfund Remedial, 840918-06 - 09

FROM : James Barron JB
Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Lab

THRU : John Austin JA
Team Leader, Organic Analysis Unit

A set of samples was received for PCB's and Pesticide analysis. The samples were extracted and analysed via EC/GC using a 30 meter DB-5 capillary column and a 30 meter OV-17 capillary column. Sample 840918-08 had to many interferences, so another aliquot was extracted and cleaned up via florisil. After initial runs the extracts were cleaned up via sulfuric acid to double check for PCB's. No contaminents at the detection limits attached were noted.

Sample Description:

Lab No.	Description
840918-06	Lackawanna, LA-MW-08A
-07	Lackawanna, LA-MW-08AA
-08	Lackawanna, LA-MW-08B (Acid)
-08	Lackawanna, LA-MW-08B (Florisil)
-09	Lackawanna, LA-MW-000

JB:ad

Attachment
a/s

PESTICIDE/PCBS PRIORITY POLLUTANT COMPOUND DETECTION LIMITS

ORIGINAL

Parameter	Cas Number	Water (ppb)
Aldrin	309-00-2	0.003
Alpha BHC	319-84-6	0.002
Alpha Endosulfan	959-98-8	0.005
Beta BHC	319-85-7	0.004
Beta Endosulfan	33213-65-9	0.01
Chlordane	57-74-9	0.04
4,4'DDD	72-54-8	0.012
4,4'DDE	72-55-9	0.006
4,4'DDT	50-29-3	0.016
Delta BHC	319-86-8	0.004
Dieldrin	60-57-1	0.006
Endosulfan Sulfate	1031-07-8	0.03
Endrin	72-20-8	0.009
Endrin Aldehyde	7421-93-4	0.023
Gamma BHC (Lindane)	58-89-9	0.002
Heptachlor	76-44-8	0.002
Heptachlor Epoxide	1024-57-3	0.004
Toxaphene	8001-35-2	0.40
PCB 1016	12674-11-2	0.04
PCB 1221	11104-28-2	0.10
PCB 1232	11141-16-5	0.10
PCB 1242	53469-21-9	0.05
PCB 1248	12672-29-6	0.08
PCB 1254	11097-69-1	0.08
PCB 1260	11096-82-5	0.15

ENVIRONMENTAL PROTECTION AGENCY
fice of Enforcement

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

CHAIN OF CUSTODY RECORD

PROJ. NO. $749.14 | PROJECT NAME SUPERFUND L.A.

SAMPLERS: (Signature) James A. Wesley Jr. Joe Stella

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Yellow Ambers 40 ml VOA						REMARKS
L-9630	9/14/84	1005		✓	LA-MW-08A	4	2	2		84091806			MONTORING WELL
L9630	9/14/84	1005		✓	LA-MW-08AA	4	2	2		84091807			"
L9631	9/14/84	0955		✓	LA-MW-08B	4	2	2		84091808			"
L9651	9/17/84	1200		✓	LA-MW-000	4	2	2		84091809			"

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
James A. Wesley Jr. Joe Stella	9/17/84 1820hrs	FEDERAL EXPRESS #857469064			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) J. Christ Robinson	Date / Time 9-18-84 0950	Remarks SHIP TO US EPA REGIONAL LAB 839 BOOTGATE RD. ANNAPOLIS MD 21401 ATTN: DAN DONNELLY	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

ORIGINAL (red)

A10039S

NUS CORPORATION

Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

C-34-11-4-77

ORIGINAL

(red)

November 6, 1984

Project No. S749.20

Mr. Walter S. Graham
U. S. Environmental Protection Agency
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

Subject: Lackawanna Refuse site
Backyard Soil Organic Analyses

Dear Mr. Graham:

Enclosed please find a copy of the tabulated backyard soil organic analytical data. The table has been constructed in a format consistent with the Remedial Investigation Report for the Lackawanna Refuse Site. Also, please note that the data have been corrected for the field blank to be consistent with the other data in the report.

If you have any questions, please call me.

Sincerely,

Richard M. Ninesteel

Richard M. Ninesteel
Project Manager

RMN/pal

Enclosure

cc: Mr. Abe Ferdas - EPA, Region III

TABLE D-11

YARD SOILS - ORGANICS (µg/kg)
LACKAWANNA REFUSE SITE
MAY 1984

Parameter	Febbo Residence	Arnold Residence	Yeager Residence	Field Blank
Acetone	5 CF	NDFB	13 CF	10
Chloroform	NDFB	NDFB	-	<5
Methylene Chloride	510 CF	230 CF	1,380 CF	220
Toluene	NDFB	NDFB	NDFB	<5

µg/kg: micrograms per kilogram
CF: corrected for field blank
NDFB: not detected due to field blank
-: not detected
<: less than

ORIGINAL
(red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : November 30, 1984

SUBJECT: QA Data Validation
Lackawanna REM - Rabbit Tissue

FROM : John Austin ja
Chemist

TO : Pat Krantz
DPOQA

This organic data validation concerns three (3) rabbit tissue samples analyzed under SAS contract 1284C.

The following factors were considered in this review:

- data completeness
- blank analysis results
- initial calibrations and calibration checks
- matrix spike results
- surrogate spike results
- DFTPP and BFB spectrum tune results

All material required to conduct the review was present in the data package.

Proven methods for the analysis tissues for "Base/Neutral/Acid extractable" compounds do not exist because proposed methods have experienced column overloadings with natural products. For these samples, a proposed procedure requiring the fractionation of the tissue extract was employed. The silica gel separation employed yields neutral alkaline compounds in fraction I, aromatic compounds in fraction II, and polar compounds in fraction III. Surrogate spike recoveries were found to range from 8-46% in samples and blanks. Matrix spike samples were, however, recovered adequately, raising the questions of possible laboratory error in adding the surrogates and of method performance.

All compounds have not been proven through these methods and the detection limits reported should be considered very conservative.

The compound diphenylhydrazine was not chromatographed as a standard. The detection limits given should be removed from the report and "no analysis" inserted.

The reagent blank showed contamination with methylene chloride, acetone, and bis(2-ethylhexyl)phthalate. Except for the methylene chloride value for sample 84062611, all results for these compounds are less than ten times the blank level and should not be considered to have originated with the samples. The methylene chloride value for 84062611 may be

ORIGINAL
(red)

suspect and should be considered only an approximate value. All other volatile organic and pesticide results were found acceptable.

The attached is a summary of positive results, and the surrogate and matrix spike data.

cc: Abe Ferdas (3HW21)

TDD Number _____

EPA Number _____

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☐ Organic ☐ Inorganic

Site Name LACKAWANNA

Date of Sample _____

Rabbit tissue

840626-

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Benzene	ethylbenzene	methylene chloride	Toluene	Acetone	Styrene	Total xylenes	bis(2-ethylhexyl)-phthalate	Diphenylhydrazine					Remarks
11		R	ug/kg	3.5 K	5.7	784 J C	6.2	~~4 C~~	9.8	4.6 K	~~2 K C~~	NA					
14		R	ug/kg			~~2 C~~	4.7K	~~3 C~~			~~1 C~~	NA					
16		R	ug/kg			~~1 C~~	4.7K	~~9 C~~				NA					
	Reagent Blank					47.5		102.2			85						

ORIGINAL (red)

ARI0010000

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.

RABBIT MEAT SOIL

SURROGATE PERCENT RECOVERY SUMMARY

Case No. RABBITS PN4532 Contract Laboratory PEI Assoc., Inc. Contract No. ~~68-01-6979~~

Low _____ Medium _____

	VOLATILE			SEMI-VOLATILE								PESTICIDE
SMO TRAFFIC NO.	TOLUENE-D8 (80-100)	BFB (80-100)	1,2 DICHLOROETHANE-D4 (80-100)	NITRO-BENZENE-D5 (20-140)	2-FLUORO-BIPHENYL (20-140)	TERPHENYL-D14 (20-150)			PHENOL-D6 (20-140)	2-FLUORO-PHENOL (20-140)	2,4,6 TRIBROMO-PHENOL (10-140)	DIBUTYL-CHLORENDATE** (20-150)
DT581 #1				0*	0*	0*			0*	02*	0*	
DT581 #2				0*	26	40			0*	43	0*	100
DT581 #3				11*	0*	0*			08*	18*	0*	
DT584 #1				0*	0*	0*			0*	02*	0*	
DT584 #2				0	21	33*			0*	0*	0*	93
DT584 #3				11*	0*	0*			11*	20	25	
DT586 #1				0*	0*	0*			0*	0*	0*	
DT586 #2				0*	22	41			0*	0*	0*	100
DT586 #3				23	0*	02*			16*	27	30	
DT586MS #1				0*	0*	0*			0*	0*	0*	
DT586MS #2				0*	482*	955*			0*	0*	221*	54
DT586MS #3				614*	06*	09*			712*	902*	1026*	
DT586MSD #1				0*	0*	03*			0*	0*	0*	
DT586MSD #2				0*	23	46			0*	0*	0*	97
DT586MSD #3				24	0*	0*			21	29	32	
Blank #1				0*	0*	0*			0*	0*	0*	
Blank #2				0*	20	37			0*	0*	0*	
Blank #3				08*	0*	0*			0*	17*	12	
BLANK	113	94	91									
DT581	99	96	137									
DT584	102	104	138									
DT586	69	78	149									
DT581MS	102	94	110									
DT581MSD	119	118	100									

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: 0 out of 18 ; outside of QC limits

Semi-Volatiles: 89 out of 108 ; outside of QC limits

Pesticides: 0 out of 5 ; outside of QC limits

Comments: _____

ORIGINAL (red)

AR100401

FORM II 8/84

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. _____ **Contractor** PEI Assoc., Inc. **Contract No.** 68-01-6779

Low Level _____ **Medium Level** _____

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS * RPD	QC LIMITS * RECOVERY
VOA SMO SAMPLE NO.	1,1-Dicholorethene	250.0	0	301.2	120.4	275.7	110.3	8.8	22	59-172
	Trichloroethene	277.0	0	390.9	141.1*	354.6	128.0	9.7	24	62-137
	Chlorobenzene	213.0	0	190.1	89.2	217.0	101.9	13.2	21	60-133
	Toluene	211.0	7.7	262.8	124.5	309.6	144.7*	14.7	21	59-139
840626-11	Benzene	209.0	4.3	271.2	129.8	254.4	121.7	6.3	21	66-142
B/N SMO SAMPLE NO.	1,2,4-Trichlorobenzene	54.8	—	17.9	33	19.6	36	8.6	23	38-107
	Acenaphthene	42.0	—	39.6	94.3	39.3	93.5	0.7	19	31-137
	2,4 Dinitrotoluene	52.8	—	20.2	38.3	22.1	41.9	8.9	47	28-89
	Di-n-Butylphthalate	45.6	—	33.1	72.6	42	92.1	23.6	47	29-135
	Pyrene	40.0	—	40.1	100	41.5	103.7	3.6	36	35-142
	N-Nitrosodi-n-Propylamine	47.2	—	64.4	136*	46	97.5	32.9	38	41-126
840626-K	1,4-Dichlorobenzene	70.4	—	19.4	27.6*	22	31.3	12.5	27	28-104
ACID SMO SAMPLE NO.	Pentachlorophenol	169	—	45.7	73.8	55.5	89.6	19.3	47	17-109
	Phenol	37.0	—	55.2	149*	43.8	118*	23.2	35	26-90
	2-Chlorophenol	53.0	—	—	*	50.7	96.6	0	50	25-102
	4-Chloro-3-Methylphenol	50.7	—	33.5	66.1	36.2	75.4	13.1	33	26-103
840626-16	4-Nitrophenol	42.4	—	36.3	85.6	40.9	96.5	11.9	50	11-114
PEST SMO SAMPLE NO.	Lindane	208		128	61.5	207	100	38	50	46-127
	Heptachlor	164		69	42	107	65	33	31	35-130
	Aldrin	179		108	60	175	98	39	43	34-132
	Dieldrin	166		94.7	57	161	97	40	38	31-134
	Endrin	171		98.6	58	165	98	40	45	42-139
_____	4,4'-DDT	167		90.6	54	151	90	36	50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 0 out of 5; outside QC limits
B/N 0 out of ~~74~~; outside QC limits
ACID 0 out of 5; outside QC limits
PEST 0 out of 6; outside QC limits

RECOVERY: VOAs 2 out of 10; outside QC limits
B/N 2 out of ~~24~~ 14 outside QC limits
ACID 3 out of 10; outside QC limits
PEST 0 out of 12; outside QC limits

Comments: _____

ORIGINAL (red)

AR100402

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

ORIGINAL (red)

DATE : December 6, 1984

SUBJECT: QA Data Validation
Lackawanna, Fish, Mice REM

FROM : John Austin
Chemist

TO : Patricia J. Krantz
DPOQA

This organic data validation concerns four (4) mouse tissue samples and one (1) fish tissue samples analyzed under SAS contract 1284C.

The following factors were considered in this review:

- data completeness
- blank analysis
- calibration curves
- calibration checks
- matrix spike results
- surrogate spike results
- DFTPP and BFB spectrum tune results

All material required to conduct the review was present in the data package.

Traces of the pesticides 4,4'-DDE, Dieldrin, and Arochlor 1260, a polychlorinated biphenyl, were reported. While all pesticide residues were insufficient for GC/MS confirmation, two column identification criteria were met, and additionally florisil fractionation found the residues in the correct fractions. This gives added support to the identification made.

Reagent blanks showed contamination with bis(2-ethylhexyl)phthalate. For samples 84062812 and 84062815 the results reported should not be considered to have originated with the samples and should be removed from the data summary.

Reagent blanks were also contaminated with methylene chloride and acetone at levels significantly below that found in the samples. Solvents in the laboratory atmosphere are concentrated on frozen tissues and these values should be considered highly suspect and are removed from the data summary.

Proven methods for the analysis of tissues for "Base/Neutral/Acid" extractable compounds do not exist because protocol methods have experienced column overloadings with natural products. For these samples a proposed procedure requiring the fractionation of the tissue extract

ORIGINAL

was employed. The surrogate and matrix spike compounds with these (red) samples were recovered in the 20-50% for most compounds, indicating that all reported detection limits are, at best, conservative and that all positive results should be considered estimated values.

Initial calibration and continuing calibration checks for the extractable compounds found unacceptable column absorptivity which also raises reported detection limits and makes calibration unstable. This serves only to reinforce that all extractable compound results are estimated values.

The attached is a summary of positive results, the surrogate and matrix spike, and calibration data from which these conclusions were made.

TDD Number _____

EPA Number _____

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☐ Organic ☐ Inorganic

Site Name Lackawanna

Date of Sample _____

Compounds Detected

Sam Num	Sample Description and Location	Phase	Units	phenol	Benzyl Alcohol	4-methyl-phenol	Butylbenzyl-phthalate	Bis(2-ethylhexyl)-phthalate	Nitro benzene	Di-n-butylphthalate	Fluoranthene	pyrene	Benzoic Acid	4,4'-DDE	Dieldrin	AROCHLOR 1260 PCB	Remarks
840 -11		mouse	ug/kg	294 KJ	378 J								2.38				
-12		"	"	297 KJ		97 KJ	982 J	~~X~~					1.84				
-13		"	"	621 J		573 J	115 KJ		188 KJ	48 KJ	47 KJ	50 KJ	2.1				
-15		"	"				3229 J	~~X~~					2340 J	6.24			
840809 -01		Fish	"											6.43	1690		
	Reagent Blank							287									

NOTE: For 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

T - estimated value

ORIGINAL (red)

AR100405

TDD Number _____

EPA Number _____

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☐ Organic ☐ Inorganic

Site Name Lackawanna

Date of Sample _____

Sample Number	Sample Description and Location	Phase	Units	Compounds Detected: Methylene chloride	Acetone	1,1,1-Trichloroethane	benzene	tetrachloroethene	toluene	styrene	total xylenes	2-hexanone						Remarks
840628 -10		mouse	mg/kg	~~2.9~~	~~5.5~~	51.1			6.9	4K	4.4K							
840628 -12		"	"	~~2.5~~	~~4.5~~	53.1			6	4.3K		29.1						
840628 -13		"	"	~~2.5~~	~~1.0~~	53.4			8.4	5.1								
840628 -15		"	"	~~3.1~~	~~1.0~~	61.1			6	2.9K								
840809 -01		Fish		~~2.9~~	~~2.7~~	36.7	3.7K	80.6	16.8									
	Reagent Blank			10.7	16.5													

ARCO 400

ORIGINAL (red)

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

SURROGATE PERCENT RECOVERY SUMMARY

Case No. PN4532 Contract Laboratory PEI Assoc., Inc. Contract No. 68-01-6779

Low _____ Medium _____

	SMO TRAFFIC NO.	TOLUENE-D8 (80-120)	BFB (80-120)	1,2 DICHLOROETHANE-D4 (80-120)	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)			PHENOL-D6 (24-113)	2-FLUORO-PHENOL (25-121)	2,4,6 TRIBROMO-PHENOL (19-122)	DIBUTYL-CHLORENDATE** (20-150)
	Blank	83	111	109	44*	22	42			6*	23	0*	67
8406	28-10	83	81	86	20	40	44			23	35	14	62
8406	28-12	82	78	96	28	39	42			25	57	16	61
8406	28-13	82	112	86	38	69	102			34	64	113	58
8406	28-15	82	116	87	21	40	44			19*	70	18	61
	MS	85	137	86									
	MSD	83	111	88									
2-608	08-1	92	102	91	46	51	70			37	56	24	72
	MS	85	129	92									
	MSD	82	175*	95									

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: 1 out of 30 ; outside of QC limits

Semi-Volatiles: _____ out of _____ ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

Comments: _____

ORIGINAL (red)

ARI00407

FORM II 6/84

Fish

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. PN 4532 Contractor PEI Assoc Inc Contract No. 68-01-6729

004 Low Level ✓ Medium Level

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS * RPD	QC LIMITS * RECOVERY
VOA SMO SAMPLE NO. 1088C-09	1,1-Dichloroethene	249.5	0	270.0	108.2	273.8	109.7	1.3	22	59-172
	Trichloroethene	277.0	0	253.2	91.4	260.2	93.9	2.7	24	62-137
	Chlorobenzene	211.5	0	257.6	121.8	266.1	125.8	3.2	21	60-133
	Toluene	210.5	0	251.7	119.6	258.0	122.6	2.4	21	59-139
	Benzene	208.5	0	248.3	119.1	253.1	101.9	1.9	21	66-142
B/N SMO SAMPLE NO. 240809-01	1,2,4-Trichlorobenzene	51.7	0	8.5	16*	1.1	2*	47*	23	38-107
	Acenaphthene	50.3	0	188	60	7.7	24*	86*	19	31-137
	2,4 Dinitrotoluene	52.2	0	17.4	33	0	0*	0*	47	28-89
	Di-n-Butylphthalate	69.5	0	28.3	65	2.1	5*	8*	47	29-135
	Pyrene	65.0	0	8.8	12*	52.6	41	59*	36	35-142
	N-Nitrosodi-n-Propylamine	52.1	0	185	53	33.4	95	57*	38	41-126
	1,4-Dichlorobenzene	60.7	0	5.5	9*	3.2	8*	53*	27	28-104
ACID SMO SAMPLE NO. 240809-01	Pentachlorophenol	101.2	0	34.8	35	22.9	36	41	47	17-109
	Phenol	103.8	0	63.1	97	33.8	52	61*	35	26-90
	2-Chlorophenol	110.4	0	47.8	69	23.4	34	67*	50	25-102
	4-Chloro-3-Methylphenol	100.8	0	37.1	59	23.8	38	43*	33	26-103
	4-Nitrophenol	100.8	0	12.8	20	0	0*	0*	50	11-114
PEST SMO SAMPLE NO. 240809-01	Lindane	126	0	72	58	96.1	80	22	50	46-127
	Heptachlor	99.4	0	41	42	46	48	6	31	35-130
	Aldrin	108	0	64	58	81	78	20	43	34-132
	Dieldrin	101	0	69	70	102	106	36	38	31-134
	Endrin	104	0	65	64	99	100	36	45	42-139
	4,4'-DDT	101	0	139	137*	113	112	25	50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 0 out of 5; outside QC limits
B/N 4 out of 7; outside QC limits
ACID 4 out of 5; outside QC limits
PEST 0 out of 6; outside QC limits

RECOVERY: VOAs 0 out of 10; outside QC limits
B/N 5 out of 14; outside QC limits
ACID 1 out of 10; outside QC limits
PEST 1 out of 12; outside QC limits

Comments: (red)

ORIGINAL

ARI00408

4/84

FORM III

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Mo45C

005

Case No. PN4532 Contractor Pel Assoc Inc Contract No. 68-01-6729

Low Level V Medium Level

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS * RPD	QC LIMITS * RECOVERY
VOA SMO SAMPLE NO. 546625-10	1,1-Dicholorethene	249.5	0	402.9	161.5	387.4	155.3	3.9	22	59-172
	Trichloroethene	277.0	0	322.7	116.5	324.7	117.2	0.6	24	62-137
	Chlorobenzene	211.5	0	257.2	121.6	266.0	125.8	3.3	21	60-133
	Toluene	210.5	12.9	239.5	113.8	242.1	115.0	1.0	21	59-139
	Benzene	208.5	0	259.8	124.6	263.2	126.2	1.3	21	66-142
B/N SMO SAMPLE NO. 546625-10	1,2,4-Trichlorobenzene	517	0	9.7	(30)*	11.6	(36)*	18	23	38-107
	Acenaphthene	503	0	25.9	51	14.4	46	10	19	31-137
	2,4 Dinitrotoluene	522	0	15.2	47	33.1	(101)*	(73)*	47	28-89
	Di-n-Butylphthalate	695	0	19.8	46	32.7	78	47	47	29-135
	Pyrene	650	0	15.4	35	11.4	(28)*	30	36	35-142
	N-Nitrosodi-n-Propylamine	561	0	11.5	(33)*	28.4	81	(84)*	38	41-126
	1,4-Dichlorobenzene	607	0	5.7	(15)*	6.7	(18)*	18	27	28-104
ACID SMO SAMPLE NO. 546625-10	Pentachlorophenol	1012	0	285.	(450)*	54.8	87	*	47	17-109
	Phenol	638	0	57.2	79	58.7	90	13	35	26-90
	2-Chlorophenol	1104	0	61.7	89	49.4	72	21	50	25-102
	4-Chloro-3-Methylphenol	1008	0	16.8	27	41.8	66	(53)*	33	26-103
	4-Nitrophenol	1008	0	50	79	0*	(0)*	*	50	11-114
PEST SMO SAMPLE NO. 546625-13	Lindane	401	0	378	94	417	99	5	50	46-127
	Heptachlor	316	0	263	83	272	83	0	31	35-130
	Aldrin	344	0	328	95	364	101	6	43	34-132
	Dieldrin	321	0	334	107	404	120	13	38	31-134
	Endrin	330	0	332	100	389	113	13	45	42-139
	4,4'-DDT	322	0	299	93	354	105	12	50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 0 out of 5; outside QC limits
B/N 2 out of 7; outside QC limits
ACID 3 out of 3; outside QC limits
PEST 0 out of 6; outside QC limits

RECOVERY: VOAs 0 out of 10; outside QC limits
B/N 7 out of 14; outside QC limits
ACID 4 out of 20; outside QC limits
PEST 0 out of 12; outside QC limits

Comments:

ORIGINAL (red)

AR100409

FORM III 4/87

ORIGINAL

(red)

f. 338

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

CASE NO: INSTRUMENT ID:T

CONTRACTOR:PEI ASSOC.,INC.

CONTRACT NO: 68-01-6779 CALIBRATION DATE: 10/23/84

MINIMUM RF FOR SPCC=0.3 MAX. %RSD FOR CCC=30%

LABORATORY ID COMPOUND	RF20	RF50	RF100	RF150	RF200	AVG RF	% RSD	CCC* SPCC **	STD DEV
CHLOROMETHANE	2.04	1.6	1.96	1.91	1.93	1.89	8.9	**	.168
BROMOMETHANE	2.17	1.56	2.01	1.9	2.02	1.93	11		.227
VINYL CHLORIDE	2.85	2.21	2.68	2.55	2.67	2.59	9.3	*	.242
CHLOROETHANE	.032	.031	.058	.073	.082	.055	42		.023
METHYLENE CHLORIDE	6.02	3.61	3.6	2.91	3.28	3.89	31		1.23
ACETONE	10.6	7.07	5.42	5.02	6.34	6.9	32		2.24
CARBON DISULFIDE	4.14	3.27	4.54	5.08	5.21	4.45	17		.786
1,1-DICHLOROETHENE	1.7	1.33	1.71	1.86	1.79	1.68	12	*	.205
1,1-DICHLOROETHANE	5.25	4.05	5.32	5.3	5.71	5.13	12	**	.629
TRANS-1,2-DICHLOROETHENE	1.86	1.45	1.91	1.86	2.01	1.82	11		.213
CHLOROFORM	4.76	3.65	4.89	4.56	5.05	4.58	12	*	.553
1,2-DICHLOROETHANE	4.23	3.21	4.2	4.15	4.75	4.11	13		.559
2-BUTANONE	.891	.592	.52	.684	.753	.668	22		.151
1,1,1-TRICHLOROETHANE	3.58	2.77	3.66	3.57	3.97	3.51	12		.444
CARBON TETRACHLORIDE	3.09	2.43	3.31	3.17	3.59	3.12	13		.431
VINYL ACETATE	12.5	9.34	12.3	11.8	13	11.8	12		1.44
BROMODICHLOROMETHANE	.868	.677	.903	.946	.974	.874	13		.117
1,2-DICHLOROPROPANE	.593	.451	.58	.613	.639	.575	12	*	.073
TRANS-1,3-DICHLOROPROPENE	.638	.498	.657	.662	.686	.628	11		.075
TRICHLOROETHENE	.468	.36	.459	.486	.5	.455	12		.055
DIBROMOCHLOROMETHANE	.546	.442	.618	.658	.699	.593	17		.101
1,1,2-TRICHLOROETHANE	.423	.336	.446	.478	.503	.437	14		.064
BENZENE	1.04	.809	1.07	1.16	1.23	1.06	14		.158
CIS-1,3-DICHLOROPROPENE	.615	.5	.686	.769	.814	.677	18		.125
2-CHLOROETHYLVINYL ETHER	.636	.552	.655	.849	.868	.712	19		.139
BROMOFORM	.457	.364	.481	.516	.542	.472	14	**	.069
2-HEXANONE	1.93	1.4	1.37	1.6	1.89	1.64	16		.264
4-METHYL-2-PENTANONE	1.43	1.01	1.17	1.31	1.38	1.26	13		.172
TETRACHLOROETHENE	.588	.457	.562	.585	.599	.558	10		.058
1,1,2,2-TETRACHLOROETHANE	1.28	.984	1.22	1.29	1.28	1.21	10	**	.13
TOLUENE	.658	.509	.659	.697	.72	.649	12	*	.082
CHLOROBENZENE	1.3	1	1.22	1.25	1.34	1.22	10	**	.13
ETHYLBENZENE	.595	.425	.536	.61	.615	.556	14	*	.08
STYRENE	1.19	.867	1.21	1.15	1.14	1.11	12		.139
TOTAL XYLENES	.651	.625	.856	.815	.817	.753	14		.106

RF=RESPONSE FACTOR
%RSD=PERCENT RELATIVE STANDARD DEVIATION
CCC=CALIBRATION CHECK COMPOUNDS(*) ✓ OK
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS(**) ✓ OK

AR100410

 ORIGINAL
(red)

INITIAL CALIBRATION DATA
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO: INSTRUMENT ID:T 03
CONTRACTOR:PEI ASSOC.,INC.
CONTRACT NO: 68-01-6779 CALIBRATION DATE: 11/05/84

MINIMUM RF FOR SPCC=.05 MAX. %RSD FOR CCC=30%

LABORATORY ID COMPOUND	RF20	RF50	RF80	RF120	RF160	AVG RF	% RSD	CCC% SPCC **	STD DEV
N-NITROSODIMETHYLAMINE-----	3.09	3.65	3.98	3.22	3.29	3.45	10		.366
PHENOL----------	2.24	2.52	2.62	2.46	2.54	2.48	5.8	*	.144
ANILINE----------	.742	.843	.702	.268	.275	.566	48		.274
BIS(2-CHLOROETHYL)ETHER----	2.25	2.58	2.67	2.7	2.71	2.58	7.4		.19
2-CHLOROPHENOL----------	1.19	1.46	1.39	1.55	1.48	1.41	9.7		.137
1,3-DICHLOROBENZENE--------	1.47	1.6	1.62	1.5	1.43	1.52	5.3		.081
1,4-DICHLOROBENZENE--------	1.74	1.83	1.83	1.7	1.64	1.75	4.7	*	.083
BENZYL ALCOHOL----------	.804	.889	.907	.975	.879	.891	6.9		.061
1,2-DICHLOROBENZENE--------	1.45	1.56	1.59	1.47	1.43	1.5	4.7		.071
2-METHYLPHENOL----------	1.21	1.36	1.46	1.47	1.54	1.41	9.2		.129
BIS(2-CHLOROISOPROPYL)ETHER	5.54	6.24	6.01	5.6	5.57	5.79	5.5		.316
4-METHYLPHENOL----------	1.23	1.29	1.43	1.48	1.5	1.38	8.7		.12
N-NITROSO-DI-N-PROPYLAMINE-	.874	1.01	1.08	1.58	1.16	1.14	23	**	.268
HEXACHLOROETHANE----------	.577	.692	.79	.801	.835	.739	14		.105
NITROBENZENE----------	2.42	2.61	2.84	3.21	3.22	2.86	12		.356
ISOPHORONE----------	.762	.84	.826	.753	.753	.787	5.4		.043
2-NITROPHENOL----------	.101	.137	.151	.175	.187	.15	22	*	.034
2,4-DIMETHYLPHENOL---------	.235	.254	.272	.283	.281	.265	7.7		.02
BENZOIC ACID----------	#	.002	.008	.062	.013	.021	130		.028
BIS(2-CHLORETHOXY)METHANE--	.577	.594	.595	.591	.576	.587	1.6		.009
2,4-DICHLOROPHENOL---------	.221	.228	.212	.245	.221	.225	5.5		.012
1,2,4-TRICHLOROBENZENE-----	.279	.279	.268	.268	.259	.271	3.1		.008
NAPTHALENE----------	.966	1.02	.798	.782	.759	.865	13		.119
4-CHLOROANILINE----------	.169	.169	.118	.08	.079	.123	36		.045
HEXACHLOROBUTADIENE--------	.164	.164	.152	.149	.14	.154	6.7	*	.01
4-CHLORO-3-METHYLPHENOL----	.64	.725	.659	.631	.579	.647	8.2	*	.053
2-METHYLNAPTHALENE---------	.569	.585	.586	.562	.517	.564	5		.028
HEXACHLOROCYCLOPENTADIENE--	.002	.017	.032	.041	.047	.028	65	**	.018
2,4,6-TRICHLOROPHENOL------	.219	.251	.204	.314	.27	.252	17	*	.043
2,4,5-TRICHLOROPHENOL------	#	.362	.378	.351	.391	.371	4.7		.018
2-CHLORONAPTHALENE---------	1.39	1.41	1.46	1.45	1.37	1.42	2.7		.039
2-NITROANILINE----------	#	.33	.348	.35	.364	.348	4		.014
DIMETHYL PHTHALATE---------	1.14	1.2	1.27	1.29	1.34	1.25	6.4		.08
ACENAPTHYLENE----------	1.33	1.34	1.36	1.33	1.25	1.32	3.1		.041
3-NITROANILINE----------	#	.332	.348	.35	.364	.349	3.8		.013
ACENAPTHENE----------	.635	.676	.665	.684	.681	.668	3	*	.02
2,4-DINITROPHENOL----------	#	.019	.028	.032	.039	.029	29	**	.008
4-NITROPHENOL----------	#	.481	.336	.529	.504	.463	18	**	.087
DIBENZOFURAN----------	1.52	1.61	1.56	1.56	1.46	1.54	3.6		.055

RF=RESPONSE FACTOR
%RSD=PERCENT RELATIVE STANDARD DEVIATION
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERF. CHECK COMPOUNDS (**)
#=NOT DETECTABLE AT 20 NG

AR100411

360 ORIGINAL
(red)

INITIAL CALIBRATION DATA
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO:
CONTRACTOR : PEI ASSOCIATES INC. DATE: 11/03/84
CONTRACT NO: 68-01-6779
MINIMUM RF FOR SPCC=.05 MAX %RSD FOR CCC =30%

LABORATORY ID COMPOUND	RF20	RF50	RF80	RF120	RF160	AVG RF	% RSD	CCC% SPCC **	STD DEV
2,4-DINITROTOLUENE	.224	.275	.295	.297	.323	.283	13		.037
2,6-DINITROTOLUENE	.235	.257	.18	.28	.298	.25	18		.046
DIETHYL PHTHALATE	1.29	1.39	1.35	1.39	1.34	1.35	3.1		.041
4-CHLOROPHENYLPHENYLETHER	.614	.646	.622	.66	.652	.639	3.1		.02
FLUORENE	1.11	1.19	1.24	1.25	1.27	1.21	5.1		.061
4-NITROANILINE	#	.173	.183	.178	.184	.18	2.8		.005
4,6-DINITRO-2METHYLPHENOL	#	0	.008	.028	.049	.021	103		.022
N-NITROSODOPHENYLAMINE(1)	.213	.23	.235	.254	.259	.238	7.8	*	.019
4-BROMPHENYLPHENYLETHER	.236	.254	.238	.249	.239	.243	3.2		.007
HEXACHLOROBENZENE	.335	.351	.324	.327	.307	.329	4.9		.016
PENTACHLOROPHENOL	#	.03	.037	.087	.098	.063	54	*	.034
PHENANTHRENE	.186	1.02	1.04	1.02	.961	.846	43		.37
ANTHRACENE	.058	.329	.275	.321	.268	.25	44		.111
DI-N-BUTYL PHTHALATE	1.19	1.4	1.31	1.27	1.19	1.27	6.9		.087
FLUORANTHENE	.862	.968	1.05	.997	.936	.963	7.3	*	.07
BENZIDINE	#	.006	.008	.013	.012	.009	33	**	.003
PYRENE	1.8	1.81	1.62	1.44	1.52	1.64	10		.166
BUTYLBENZYLPHTHALATE	1.16	1.19	1.19	1.02	1.13	1.14	6.1		.07
3,3'-DICHLOROBENZIDINE	.223	.206	.228	.235	.231	.225	5		.011
BENZO(A)ANTHRACENE	.483	.431	.535	.664	.693	.561	20		.114
BIS(2-ETHYLHEXYL)PHTHALATE	1.22	1.43	1.44	1.2	1.34	1.32	8.4		.112
CHRYSENE	1.66	1.83	1.74	1.63	1.79	1.73	4.8		.083
DI-N-OCTYL PHTHALATE	4.3	4.42	4.2	4.23	3.9	4.21	4.7	*	.196
BENZO(B)FLUORANTHENE	1.48	3.13	2.87	1.69	1.43	2.12	38		.814
BENZO(K)FLUORANTHENE	1.48	3.13	2.87	1.69	1.43	2.12	38		.814
BENZO(A)PYRENE	1.89	1.98	1.59	1.58	1.57	1.72	11	*	.198
INDENO(1,2,3-C,D)PYRENE	.374	.233	.418	.454	1.71	.637	94		.604
DIBENZ(A,H)ANTHRACENE	.091	.123	.12	.378	.398	.222	68		.152
BENZO(G,H,I)PERYLENE	.492	.674	.63	.792	1.12	.741	31		.236

RF=RESPONSE FACTOR
%RSD=PERCENT RELATIVE STANDARD DEVIATION
CCC=CALIBRATION CHECK COMPOUNDS
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS
# =NOT DETECTABLE AT 20 NG
(1)-CANNOT BE SEPARATED FROM DIPHENYLAMINE

AR100412

391

ORIGINAL (red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 10/31/84
CONTRACT NO:68-01-6779
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: OWA-X
LABORATORY ID:
CALIBRATION DATE: 11/03/84
TIME: 11:34

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
2,4-DINITROTOLUENE	.435	.282	35.172	
2,6-DINITROTOLUENE	.42	.379	9.7619	
DIETHYL PHTHALATE	1.565	2.099	-34.12	
4-CHLOROPHENYLPHENYLETHER	.611	.733	-19.97	
FLUORENE	1.265	1.276	-.8696	
4-NITROANILINE	.253	.049	80.632	
4,6-DINITRO-2METHYLPHENOL	.09	.036	60	
N-NITROSODOPHENYLAMINE(1)	.25	.208	16.8	*
4-BROMPHENYLPHENYLETHER	.191	.263	-37.7	
HEXACHLOROBENZENE	.235	.373	-58.72	
PENTACHLOROPHENOL	.106	.083	21.698	*
PHENANTHRENE	.955	.982	-2.827	
ANTHRACENE	.454	.406	10.573	
DI-N-BUTYL PHTHALATE	1.592	2.248	-41.21	
FLUORANTHENE	1.141	1.154	-1.139	*
BENZIDINE	.041	.003	92.683	**
PYRENE	1.605	2.19	-36.45	
BUTYLBENZYLPHTHALATE	1.354	2.068	-52.73	
3,3'-DICHLOROBENZIDINE	.215	.056	73.953	
BENZO(A)ANTHRACENE	.948	.843	11.076	
BIS(2-ETHYLHEXYL)PHTHALATE	1.33	2.196	-65.11	
CHRYSENE	1.485	1.597	-7.542	
DI-N-OCTYL PHTHALATE	3.938	3.66	7.0594	*
BENZO(B)FLUORANTHENE	1.52	1.264	16.842	
BENZO(K)FLUORANTHENE	1.52	1.264	16.842	
BENZO(A)PYRENE	1.023	.894	12.61	*
INDENO(1,2,3-C,D)PYRENE	.714	1.205	-68.77	
DIBENZ(A,H)ANTHRACENE	.575	.88	-53.04	
BENZO(G,H,I)PERYLENE	.556	1.34	-141	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS(**)
# =NOT DETECTABLE AT 20 NG
(1)-CANNOT BE SEPARATED FROM DIPHENYLAMINE

ORIGINAL

(red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 10/31/84
CONTRACT NO:
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: OWA-X
LABORATORY ID:
CALIBRATION DATE: 11/03/84
TIME: 11:34

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
N-NITROSODIMETHYLAMINE-----	.444	3.399	-665.5	
PHENOL----------	1.273	2.147	-68.66	*
ANILINE----------	.264	.629	-138.3	
BIS(2-CHLOROETHYL)ETHER----	1.346	2.875	-113.6	
2-CHLOROPHENOL----------	.975	1.481	-51.9	
1,3-DICHLOROBENZENE--------	1.191	1.028	13.686	
1,4-DICHLOROBENZENE--------	1.879	2.092	-11.34	*
BENZYL ALCOHOL----------	.603	.746	-23.71	
1,2-DICHLOROBENZENE--------	1.598	1.554	2.7534	
2-METHYLPHENOL----------	.895	1.094	-22.23	
BIS(2-CHLOROISOPROPYL)ETHER	1.875	3.344	-78.35	
4-METHYLPHENOL----------	.856	1.055	-23.25	
N-NITROSO-DI-N-PROPYLAMINE-	.703	.632	10.1	**
HEXACHLOROETHANE----------	.533	.75	-40.71	
NITROBENZENE----------	1.847	2.456	-32.97	
ISOPHORONE----------	.744	1.043	-40.19	
2-NITROPHENOL----------	.2	.148	26	*
2,4-DIMETHYLPHENOL---------	.291	.307	-5.498	*
BENZOIC ACID----------	.259	.15	42.085	
BIS(2-CHLORETHOXY)METHANE--	.525	.704	-34.1	
2,4-DICHLOROPHENOL---------	.316	.274	13.291	
1,2,4-TRICHLOROBENZENE-----	.378	.31	17.989	
NAPTHALENE----------	.976	1.112	-13.93	
4-CHLOROANILINE----------	.097	.169	-74.23	
HEXACHLOROBUTADIENE--------	.268	.211	21.269	*
4-CHLORO-3-METHYLPHENOL----	.356	.421	-18.26	*
2-METHYLNAPTHALENE---------	.639	.598	6.4163	
HEXACHLOROCYCLOPENTADIENE--	.022	.017	22.727	**
2,4,6-TRICHLOROPHENOL------	.258	.296	-14.73	*
2,4,5-TRICHLOROPHENOL------	.43	.373	13.256	
2-CHLORONAPTHALENE---------	1.161	1.341	-15.5	
2-NITROANILINE----------	.427	.327	23.419	
DIMETHYL PHTHALATE---------	1.484	1.681	-13.27	
ACENAPTHYLENE----------	1.243	1.338	-7.643	
3-NITROANILINE----------	.3	.169	43.667	
ACENAPTHENE----------	.592	.662	-11.82	*
2,4-DINITROPHENOL----------	.046	.077	-67.39	**
4-NITROPHENOL----------	.201	.095	52.736	**
DIBENZOFURAN----------	1.624	1.719	-5.85	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS (**)
#=NOT DETECTABLE AT 20 NG

AR100414

ORIGINAL

398 (red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 10/31/84
CONTRACT NO:68-01-6779
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: OWA-X
LABORATORY ID:
CALIBRATION DATE: 11/05/84
TIME: 08:58

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
2,4-DINITROTOLUENE	.435	.351	19.31	
2,6-DINITROTOLUENE	.42	.32	23.81	
DIETHYL PHTHALATE	1.565	1.531	2.1725	
4-CHLOROPHENYLPHENYLETHER	.611	.75	-22.75	
FLUORENE	1.265	1.183	6.4822	
4-NITROANILINE	.253	.133	47.431	
4,6-DINITRO-2METHYLPHENOL	.09	.04	55.556	
N-NITROSODOPHENYLAMINE(1)	.25	.294	-17.6	*
4-BROMPHENYLPHENYLETHER	.191	.284	-48.69	
HEXACHLOROBENZENE	.235	.392	-66.81	
PENTACHLOROPHENOL	.106	.13	-22.64	*
PHENANTHRENE	.955	1.028	-7.644	
ANTHRACENE	.454	.303	33.26	
DI-N-BUTYL PHTHALATE	1.592	1.649	-3.58	
FLUORANTHENE	1.141	.989	13.322	*
BENZIDINE	.041	.017	58.537	**
PYRENE	1.605	2.002	-24.74	
BUTYLBENZYLPHTHALATE	1.354	1.51	-11.52	
3,3'-DICHLOROBENZIDINE	.215	.188	12.558	
BENZO(A)ANTHRACENE	.948	1.095	-15.51	
BIS(2-ETHYLHEXYL)PHTHALATE	1.33	1.355	-1.88	
CHRYSENE	1.485	1.306	12.054	
DI-N-OCTYL PHTHALATE	3.938	3.221	18.207	*
BENZO(B)FLUORANTHENE	1.52	1.197	21.25	
BENZO(K)FLUORANTHENE	1.52	1.197	21.25	
BENZO(A)PYRENE	1.023	.813	20.528	*
INDENO(1,2,3-C,D)PYRENE	.714	1.534	-114.8	
DIBENZ(A,H)ANTHRACENE	.575	1.12	-94.78	
BENZO(G,H,I)PERYLENE	.556	1.359	-144.4	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS(**)
# =NOT DETECTABLE AT 20 NG
(1)-CANNOT BE SEPARATED FROM DIPHENYLAMINE

ORIGINA

F. 397 (red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 10/31/84
CONTRACT NO:
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: OWA-X
LABORATORY ID:
CALIBRATION DATE: 11/05/84
TIME: 08:58

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
N-NITROSODIMETHYLAMINE-----	.444	4.915	-1007	
PHENOL----------	1.273	1.64	-28.8	*
ANILINE----------	.264	.575	-117.8	
BIS(2-CHLOROETHYL)ETHER----	1.346	1.448	-7.578	
2-CHLOROPHENOL----------	.975	1.285	-31.79	
1,3-DICHLOROBENZENE--------	1.191	1.084	8.984	
1,4-DICHLOROBENZENE--------	1.879	2.128	-13.25	*
BENZYL ALCOHOL----------	.603	.714	-18.41	
1,2-DICHLOROBENZENE--------	1.598	1.615	-1.064	
2-METHYLPHENOL----------	.895	1.017	-13.63	
BIS(2-CHLOROISOPROPYL)ETHER	1.875	2.86	-52.53	
4-METHYLPHENOL----------	.856	1.094	-27.8	
N-NITROSO-DI-N-PROPYLAMINE-	.703	.752	-6.97	**
HEXACHLOROETHANE----------	.533	.637	-19.51	
NITROBENZENE----------	1.847	2.368	-28.21	
ISOPHORONE----------	.744	.804	-8.065	
2-NITROPHENOL----------	.2	.182	9	*
2,4-DIMETHYLPHENOL---------	.291	.295	-1.375	*
BENZOIC ACID----------	.259	.084	67.568	
BIS(2-CHLORETHOXY)METHANE--	.525	.591	-12.57	
2,4-DICHLOROPHENOL---------	.316	.289	8.5443	
1,2,4-TRICHLOROBENZENE-----	.378	.342	9.5238	
NAPTHALENE----------	.976	1.002	-2.664	
4-CHLOROANILINE----------	.097	.214	-120.6	
HEXACHLOROBUTADIENE--------	.268	.232	13.433	*
4-CHLORO-3-METHYLPHENOL----	.356	.283	20.506	*
2-METHYLNAPTHALENE---------	.639	.653	-2.191	
HEXACHLOROCYCLOPENTADIENE--	.022	.028	-27.27	**
2,4,6-TRICHLOROPHENOL------	.258	.359	-39.15	*
2,4,5-TRICHLOROPHENOL------	.43	.379	11.86	
2-CHLORONAPTHALENE---------	1.161	1.35	-16.28	
2-NITROANILINE----------	.427	.396	7.26	
DIMETHYL PHTHALATE---------	1.484	1.53	-3.1	
ACENAPTHYLENE----------	1.243	1.215	2.2526	
3-NITROANILINE----------	.3	.205	31.667	
ACENAPTHENE----------	.592	.614	-3.716	*
2,4-DINITROPHENOL----------	.046	.012	73.913	**
4-NITROPHENOL----------	.201	.098	51.244	**
DIBENZOFURAN----------	1.624	1.555	4.2488	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS (**)
#=NOT DETECTABLE AT 20 NG

ORIGINAL

406 (red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 10/31/84
CONTRACT NO:68-01-6779
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: OWA-X
LABORATORY ID:
CALIBRATION DATE: 11/08/84
TIME: 14:11

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
2,4-DINITROTOLUENE	.435	.352	19.08	
2,6-DINITROTOLUENE	.42	.396	5.7143	
DIETHYL PHTHALATE	1.565	1.543	1.4058	
4-CHLOROPHENYLPHENYLETHER	.611	.62	-1.473	
FLUORENE	1.265	1.152	8.9328	
4-NITROANILINE	.253	.165	34.783	
4,6-DINITRO-2METHYLPHENOL	.09	.057	36.667	
N-NITROSODOPHENYLAMINE(1)	.25	.269	-7.6	*
4-BROMPHENYLPHENYLETHER	.191	.223	-16.75	
HEXACHLOROBENZENE	.235	.301	-28.09	
PENTACHLOROPHENOL	.106	.09	15.094	*
PHENANTHRENE	.955	.949	.62827	
ANTHRACENE	.454	.282	37.885	
DI-N-BUTYL PHTHALATE	1.592	1.004	36.935	
FLUORANTHENE	1.141	1.008	11.656	*
BENZIDINE	.041	.022	46.341	**
PYRENE	1.605	1.451	9.595	
BUTYLBENZYLPHTHALATE	1.354	1.134	16.248	
3,3'-DICHLOROBENZIDINE	.215	.192	10.698	
BENZO(A)ANTHRACENE	.948	.972	-2.532	
BIS(2-ETHYLHEXYL)PHTHALATE	1.33	1.17	12.03	
CHRYSENE	1.485	1.299	12.525	
DI-N-OCTYL PHTHALATE	3.938	1.928	51.041	*
BENZO(B)FLUORANTHENE	1.52	1.174	22.763	
BENZO(K)FLUORANTHENE	1.52	1.174	22.763	
BENZO(A)PYRENE	1.023	.836	18.28	*
INDENO(1,2,3-C,D)PYRENE	.714	1.185	-65.97	
DIBENZ(A,H)ANTHRACENE	.575	.854	-48.52	
BENZO(G,H,I)PERYLENE	.556	1.037	-86.51	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS(**)
# =NOT DETECTABLE AT 20 NG
(1)-CANNOT BE SEPARATED FROM DIPHENYLAMINE

ORIGINAL

406red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 10/31/84
CONTRACT NO:
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: OWA-X
LABORATORY ID:
CALIBRATION DATE: 11/08/84
TIME: 14:11

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
N-NITROSODIMETHYLAMINE-----	.444	.695	-56.53	
PHENOL----------	1.273	1.537	-20.74	*
ANILINE----------	.264	.503	-90.53	
BIS(2-CHLOROETHYL)ETHER----	1.346	1.834	-36.26	
2-CHLOROPHENOL----------	.975	1.214	-24.51	
1,3-DICHLOROBENZENE--------	1.191	1.003	15.785	
1,4-DICHLOROBENZENE--------	1.879	1.867	.63864	*
BENZYL ALCOHOL----------	.603	.666	-10.45	
1,2-DICHLOROBENZENE--------	1.598	1.508	5.632	
2-METHYLPHENOL----------	.895	.947	-5.81	
BIS(2-CHLOROISOPROPYL)ETHER	1.875	2.219	-18.35	
4-METHYLPHENOL----------	.856	.951	-11.1	
N-NITROSO-DI-N-PROPYLAMINE-	.703	.483	31.294	**
HEXACHLOROETHANE----------	.533	.643	-20.64	
NITROBENZENE----------	1.847	1.766	4.3855	
ISOPHORONE----------	.744	.613	17.608	
2-NITROPHENOL----------	.2	.162	19	*
2,4-DIMETHYLPHENOL---------	.291	.277	4.811	*
BENZOIC ACID----------	.259	.094	63.707	
BIS(2-CHLORETHOXY)METHANE--	.525	.532	-1.333	
2,4-DICHLOROPHENOL---------	.316	.263	16.772	
1,2,4-TRICHLOROBENZENE-----	.378	.317	16.138	
NAPTHALENE----------	.976	.986	-1.025	
4-CHLOROANILINE----------	.097	.18	-85.57	
HEXACHLOROBUTADIENE--------	.268	.172	35.821	*
4-CHLORO-3-METHYLPHENOL----	.356	.255	28.371	*
2-METHYLNAPTHALENE---------	.639	.462	27.7	
HEXACHLOROCYCLOPENTADIENE--	.022	.028	-27.27	**
2,4,6-TRICHLOROPHENOL------	.258	.319	-23.64	*
2,4,5-TRICHLOROPHENOL------	.43	.369	14.186	
2-CHLORONAPTHALENE---------	1.161	1.336	-15.07	
2-NITROANILINE----------	.427	.39	8.6651	
DIMETHYL PHTHALATE---------	1.484	1.399	5.7278	
ACENAPTHYLENE----------	1.243	1.179	5.1488	
3-NITROANILINE----------	.3	.177	41	
ACENAPTHENE----------	.592	.613	-3.547	*
2,4-DINITROPHENOL----------	.047	.024	47.826	**
4-NITROPHENOL----------	.201	.13	35.323	**
DIBENZOFURAN----------	1.624	1.487	8.436	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS (**)
#=NOT DETECTABLE AT 20 NG

AR100418

ORIGINAL
414
(red)

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE: 11/02/84
CONTRACT NO: 68-01-6779
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID: T
LABORATORY ID:
CALIBRATION DATE: 11/05/84
TIME: 9:26

COMPOUND	AVG RF	RF50	%D	CCC* SPCC**
2,4-DINITROTOLUENE	.283	.272	3.8869	
2,6-DINITROTOLUENE	.25	.268	-7.2	
DIETHYL PHTHALATE	1.35	.999	26	
4-CHLOROPHENYLPHENYLETHER	.639	.677	-5.947	
FLUORENE	1.21	.995	17.769	
4-NITROANILINE	.18	.137	23.889	
4,6-DINITRO-2METHYLPHENOL	.021	.003	85.714	
N-NITROSODOPHENYLAMINE(1)	.238	.241	-1.261	*
4-BROMPHENYLPHENYLETHER	.243	.288	-18.52	
HEXACHLOROBENZENE	.329	.378	-14.89	
PENTACHLOROPHENOL	.063	.114	80.95	*
PHENANTHRENE	.846	.792	6.383	
ANTHRACENE	.25	.31	-24	
DI-N-BUTYL PHTHALATE	1.27	.915	27.953	
FLUORANTHENE	.963	.807	16.199	*
BENZIDINE	.009	.006	33.333	**
PYRENE	1.64	1.426	13.049	
BUTYLBENZYLPHTHALATE	1.14	.911	20.088	
3,3'-DICHLOROBENZIDINE	.225	.167	25.778	
BENZO(A)ANTHRACENE	.561	2.158	-284.7	
BIS(2-ETHYLHEXYL)PHTHALATE	1.32	1.024	22.424	
CHRYSENE	1.73	2.17	-25.43	
DI-N-OCTYL PHTHALATE	4.21	2.743	34.846	*
BENZO(B)FLUORANTHENE	2.12	1.191	43.821	
BENZO(K)FLUORANTHENE	2.12	1.191	43.821	
BENZO(A)PYRENE	1.72	1.257	26.919	*
INDENO(1,2,3-C,D)PYRENE	.637	.19	70.173	
DIBENZ(A,H)ANTHRACENE	.222	.148	33.333	
BENZO(G,H,I)PERYLENE	.741	.224	69.771	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS(**)
# =NOT DETECTABLE AT 20 NG
(1)-CANNOT BE SEPARATED FROM DIPHENYLAMINE

ORIGINAL
(red) 413

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO:
CONTRACTOR: PEI ASSOCIATES INC.
INITIAL CALIBRATION DATE:11/03/84
CONTRACT NO:68-01-6779
MINIMUM RF FOR SPCC=.05
MAXIMUM %D FOR CCC= 25%

INSTRUMENT ID:T
LABORATORY ID:
CALIBRATION DATE:11/05/84
TIME:9:26

COMPOUND	AVG RF	RF80	%D	CCC* SPCC**
N-NITROSODIMETHYLAMINE-----	3.45	2.095	39.275	
PHENOL----------	2.48	1.933	22.056	*
ANILINE----------	.566	.613	-8.304	
BIS(2-CHLOROETHYL)ETHER----	2.58	2.007	22.209	
2-CHLOROPHENOL----------	1.41	1.162	17.589	
1,3-DICHLOROBENZENE--------	1.52	1.282	15.658	
1,4-DICHLOROBENZENE--------	1.75	1.625	7.1429	*
BENZYL ALCOHOL----------	.891	.827	7.1829	
1,2-DICHLOROBENZENE--------	1.5	1.353	9.8	
2-METHYLPHENOL----------	1.41	1.248	11.489	
BIS(2-CHLOROISOPROPYL)ETHER	5.79	3.905	32.556	
4-METHYLPHENOL----------	1.38	1.226	11.159	
N-NITROSO-DI-N-PROPYLAMINE-	1.14	.822	27.895	**
HEXACHLOROETHANE----------	.739	.636	13.938	
NITROBENZENE----------	2.86	2.221	22.343	
ISOPHORONE----------	.787	.636	19.187	
2-NITROPHENOL----------	.15	.183	-22	*
2,4-DIMETHYLPHENOL---------	.265	.29	-9.434	
BENZOIC ACID----------	.021	.003	85.714	
BIS(2-CHLORETHOXY)METHANE--	.587	.522	11.073	
2,4-DICHLOROPHENOL---------	.225	.266	-18.22	
1,2,4-TRICHLOROBENZENE-----	.271	.348	-28.41	
NAPTHALENE----------	.865	.708	18.15	
4-CHLOROANILINE----------	.123	.158	-28.46	
HEXACHLOROBUTADIENE--------	.154	.209	-35.71	*
4-CHLORO-3-METHYLPHENOL----	.647	.54	16.538	*
2-METHYLNAPTHALENE---------	.564	.551	2.305	
HEXACHLOROCYCLOPENTADIENE--	.028	.013	53.571	**
2,4,6-TRICHLOROPHENOL------	.252	.216	14.286	*
2,4,5-TRICHLOROPHENOL------	.371	.434	-16.98	
2-CHLORONAPTHALENE---------	1.42	1.248	12.113	
2-NITROANILINE----------	.348	.301	13.506	
DIMETHYL PHTHALATE---------	1.25	.997	20.24	
ACENAPTHYLENE----------	1.32	1.072	18.788	
3-NITROANILINE----------	.349	.301	13.754	
ACENAPTHENE----------	.668	.626	6.2874	*
2,4-DINITROPHENOL----------	.029	.028	3.4483	**
4-NITROPHENOL----------	.463	.377	18.575	**
DIBENZOFURAN----------	1.54	1.266	17.792	

RF=RESPONSE FACTOR
%D=PERCENT DIFFERENCE
CCC=CALIBRATION CHECK COMPOUNDS(*)
SPCC=SYSTEM PERFORMANCE CHECK COMPOUNDS (**)
#=NOT DETECTABLE AT 20 NG

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

(red) 224-2740
FTS-922-3752

ORIGINAL

DATE : December 11, 1984

SUBJECT: Lackawanna Animal Study

FROM : Patricia J. Krantz
DPOQA, ESD

TO : Walter Graham (3HW23)

THRU: Greene A. Jones (3ESOO)
Director, ESD

DEC 18 1984

Enclosed are the QA reviews for the organic analyses done on three rabbit, 4 mice, and one fish from Lackawanna. They are ready for delivery to Walt Graham, HWMD Project Officer. The inorganic data should be at CRL in the next week or two according to the lab doing the analysis.

It is important to remember in using this data that the methods used for the analyses have not undergone EPA validation. They are derived from the CLP protocols with certain cleanup modifications. While the CLP protocol can be considered validated for water and soils, the methods used here are non-validated for natural products such as animal tissue. The data indicates that detection limits are conservative and quantitative values should be considered estimates.

Some additional observations/information:

fish was a composite

- Of the 21 compounds found in one or more animals, 17 of the same compounds (81%) have been previously found in the water or sediment from Lackawanna (based on CRL analyses in 1979, 1982, and 1983).
- The mice and fish were "whole" animal samples; the rabbit "muscle" was analyzed. Given the small number of organisms tested, the statistical validity of these results is somewhat doubtful, although as a "screen" it may be adequate.
- The compounds of greatest significance appear to be DDE and dieldrin in the mice and fish; PCB in the fish and volatiles in all three animals.
- Review by a biologist/toxicologist is highly recommended.

cc: Orterio Villa
Daniel Donnelly
Greene Jones

AR100421
ANIMAL ORGANICS

ORIGINAL
(red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : December 18, 1984

SUBJECT: QA Data Validation - SAS 1284C
Lackawanna REM - Mouse, Rabbit, and Fish Tissue

FROM : Debra White
Chemist

TO : Patricia J. Krantz
DPOQA

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, ICP interference QC, calibration data, and quality assurance documentation.

Qualifiers

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

For Mouse Tissue Samples (840628-10, 840628-12, 840628-13, 840628-15):

° Reported results for iron in the mouse tissue samples could be biased up to 500% high, the result for the spiked sample (-12) has been adjusted to reflect the spike recovery results.

° Reported results for tin in the mouse tissue samples could be biased up to 200% high, the result for the spiked sample (-12) has been adjusted to reflect the spike recovery results.

° Reported results for zinc in the mouse tissue samples could be biased up to 200% high, the result for the spiked sample (-12) has been adjusted to reflect the spike recovery results.

° Due to a laboratory transcription error the result for mercury in sample 840628-10 was incorrectly reported as being found; this has been corrected in the sample data summary.

For Rabbit Tissue Samples (840628-11, 840628-14, 840628-16):

° Reported results for iron in the rabbit tissue samples could be biased up to 300% high, the result for the spiked sample (-14) has been adjusted to reflect the spike recovery results.

ORIGINAL (red)

° Reported results for tin in the rabbit tissue samples could be biased up to 200% high, the result for the spiked sample (-14) has been adjusted to reflect the spike recovery results.

For Fish Tissue Sample (840809-01):

° No qualifications of the data are made.

Findings

For Mouse Tissue Samples (840628-10, 840628-12, 840628-13, 840628-15):

° High matrix spike recovery (455%) was reported for iron in sample 840628-12.

° High matrix spike recovery (217%) was reported for tin in sample 840628-12.

° High matrix spike recovery (169%) was reported for zinc in sample 840628-12.

For Rabbit Tissue Samples (840628-11, 840628-14, 840628-16):

° High matrix spike rcovery (292%) was reported for iron in sample 840628-14.

° High matrix spike recovery (219%) was reported for tin in sample 840628-14.

Summary

This Quality Assurance Review has identified the following area of concern; matrix interferences.

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

TDD Number _____

EPA Numb _____

SAMPLE [illegible] SUMMARY
TARGET COMPOUNDS

☐ Organic ■ Inorganic

Site Name LACKAWANNA

Date of Sample _____

Sample Number	Sam[illegible] escription and [illegible] on	Phase	Units	Compounds Detected: ALUMINUM	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MANGANESE	MERCURY	Remarks
840628 10	Mouse		mg/kg	4.70			2.40			0.87		7.90	115	2.0	1.30		
840628 11	Rabbit		mg/kg	4.60			15.2			5.60		112	428	0.83	2.90		
840628 12	Mouse		mg/kg	2.90			1.40			0.59		6.60	23 "S"	1.4	1.0		
840628 13	Mouse		mg/kg	3.10			8.80			1.20		5.90	121		3.70		
840628 14	Rabbit		mg/kg	2.90			1.5 "S"			0.99		5.7	28 "S"		0.72		
840628 15	Mouse		mg/kg	80.2			1.90			1.10		8.30	272	1.5	2.70		
840628 16	Rabbit		mg/kg	3.30			4.70			0.92		14.2	74.7		1.40		
840809 01	Fish		mg/kg	6.70			1.40			0.67		5.70	67.2	0.98	9.00	.059 "S"	

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.

"S" – result corrected for spike recovery

ORIGINAL (red)

AR100434

TDD Number _____ _____

EPA Number _____ _____

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

☐ Organic ■ Inorganic

Site Name LACKAWANNA

Date of Sample _____

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	NICKEL	SELENIUM	SILVER	THALLIUM	TIN	VANADIUM	ZINC								Remarks
10	MOUSE		mg/kg			0.43		20.0		59.9								
11	RABBIT		mg/kg	1.70				243		32.2								
12	MOUSE		mg/kg					7.2 "S"		25.5 "S"								
13	MOUSE		mg/kg		0.27			20.6		38.8								
14	RABBIT		mg/kg	1.8			1.2 "S"	2.6 "S"		10.7 "S"								
15	MOUSE		mg/kg			0.32		17.8		42.2								
16	RABBIT		mg/kg					28.3		17.2								
01	FISH		mg/kg		0.48 "J"			14.3		18.5								

AR 000424

ORIGINAL (red)

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.

"S" - result corrected for spike recovery

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

ORIGINAL
(red)

DATE : December 21, 1984

SUBJECT: Lackawanna Animal Study

FROM : Patricia J. Krantz
DPOQA, ESD

TO : Walter Graham (3HW23)

THRU: Greene A. Jones (3ESOO)
Director, ESD

Enclosed is the QA review for the inorganic analyses done on the three rabbit, four mice, and one fish from Lackawanna. They are ready for delivery to Walt Graham, HWMD Project Officer.

As was the case with the organics, the elements found are consistent with those found in water and sediment samples examined by CRL in 1982 and 1983. Review by a biologist/toxicologist is highly recommended.

cc: Orterio Villa
Daniel Donnelly
Greene A. Jones

Fish was a white sucker composite

AR100425
ANIMAL INORGANICS

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Suite 322
315 South Allen Street
State College, Pennsylvania 16801

ORIGINAL
(red)

February 19, 1985

TO: Interested Parties

Enclosed are laboratory results from biological sampling conducted by this office. We are preparing a report on this sampling effort that will include our analysis of these data and comments from other agencies or experts in the field of environmental contaminants. Because of your interest or statutory responsibilities in this area we are forwarding copies of the raw data to you for your review. Any comments that you may wish to make at this time will be considered for inclusion in our report. We would appreciate it if you could provide any comments to us within 30 days. If you have any questions regarding this survey, contact Cindy Rice at 814-234-4090.

Sincerely,

Charles J. Kulp
Field Supervisor

cc:
PFC - Abele
Miller, E.
Miller, J.
Hesser
Regional Office, Sweet Valley
Area Fisheries Manager - Billingsly
- Mudrak
PGC - Duncan
Sitlinger
Cinemella, Wendt

DER - DeBenedictis
Ulanowski
Regional Environmental Protection Director, Wilkes-Barre
Regional Aquatic Biologist - Kupsky

PA Department of Health - Logue
Regional Environmental Health Specialist - Riester

EPA - Graham

CDC - Binder

ORIGINAL

The following information concerning the site description, extent (red) contamination and general risk assessment at the Lackawanna Refuse Site was largely obtained from the Remedial Action Master Plan for the site (NUS Corporation, 1983).

Site Description

The Lackawanna Refuse Site is located on the border of Old Forge Borough and Ransom Township in Lackawanna County, Pennsylvania and covers 258 acres in a hilly area previously strip mined for coal. It had been used as a municipal and commercial disposal site, and industrial wastes were dumped at the site. Three strip mine pits supposedly contain only municipal and commercial refuse, a fourth is open, and the fifth pit (45-90 feet deep) contains at least 11,000 and possibly over 100,000 buried barrels of industrial and potentially hazardous wastes along with municipal and commercial refuse. Liquid wastes were reportedly also dumped from bulk tankers onto the ground and into a pit where a borehole opens into a deep mine network. The types of potentially hazardous compounds suspected at the site include toxic metal compounds, various solvents, oils, paints and thinners, various sludges, organic acids, rubber compounds, coolants, and other organic wastes.

In 1978, the State closed the privately-owned site for accepting industrial waste without a permit.

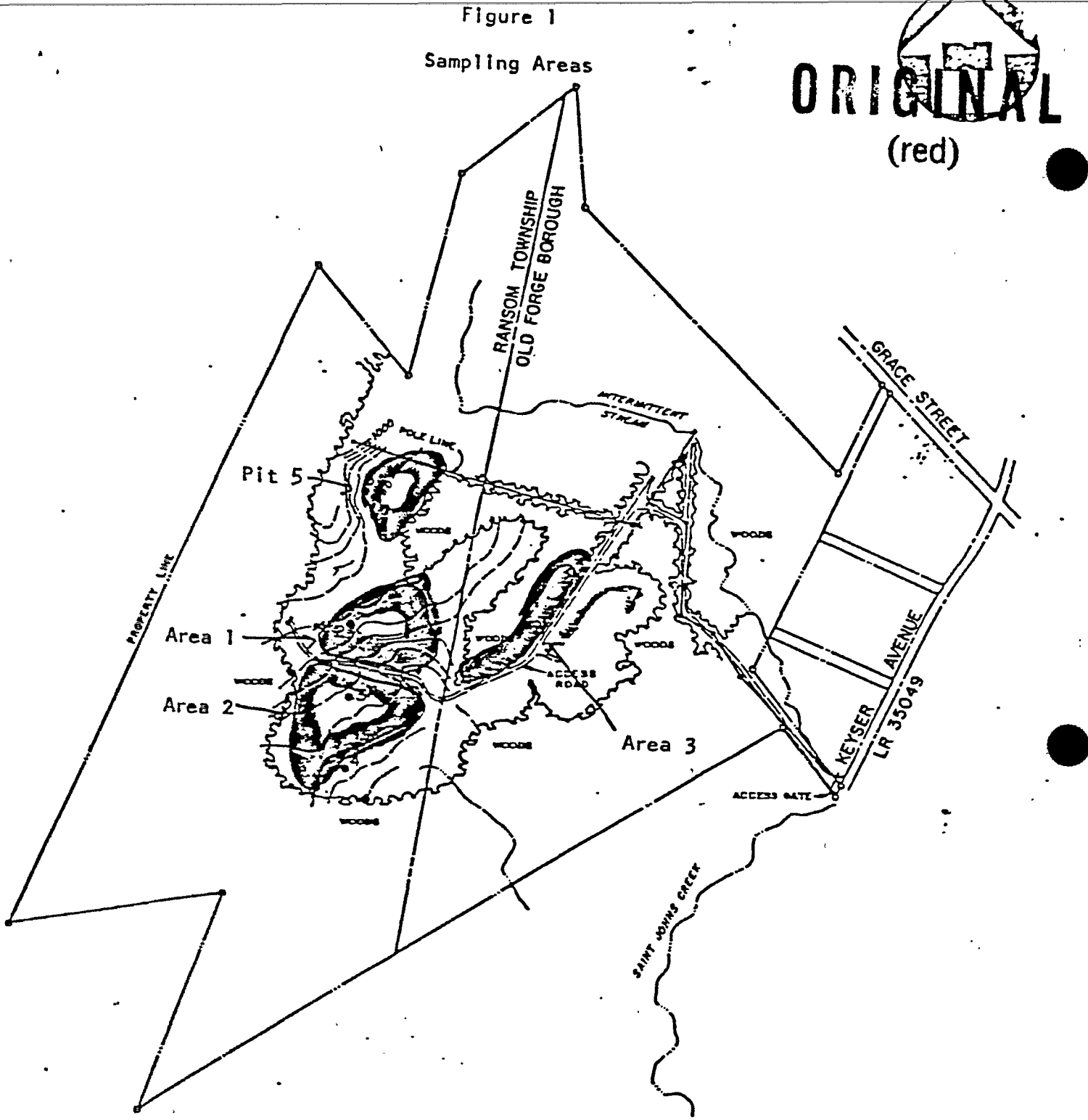
Sampling and analysis of on-site and off-site surface water, as well as on-site soil, show that organic and inorganic contaminants are present. No data are available as to the quality of groundwater in the vicinity of the site.

Figure 1

Sampling Areas

ORIGINAL

(red)



LEGEND

BOREHOLE PIT

SURFACE CONTOUR (CONTOUR INTERVAL = 10')

•4 PIT LOCATION AND IDENTIFICATION

SITE LOCATION MAP

LACKAWANNA REFUSE SITE, OLD FORGE, PA

SCALE: 1" = 800'

AR100428

Table 3. Summary of Terrestrial Sampling.

	Pit 5	Area 1	Area 2	Area 3
	Set	Set	Set	Set
5/21/84	25 small mammal traps 15 cottontail traps	20 small mammal traps 10 cottontail traps	25 small mammal traps 20 cottontail traps	12 small mammal traps 00 cottontail traps
5/22/84	checked & reset 25 checked & reset 15	checked & reset 20 checked & reset 20	checked & reset 25 checked & reset 20	checked & reset 12 ---
	Catch	Catch	Catch	Catch
	1 Peromyscus (alive) 1 Microtus 1 Sylvilagus	2 Peromyscus (alive) 1 Microtus ---	--- --- ---	1 Peromyscus (alive 1 Tamias (alive) 2 Sylvilagus (shot)
5/23/84	checked & pulled 25 checked & pulled 15	checked & pulled 20 checked & pulled 10	checked & pulled 25 checked & pulled 20	checked & pulled 12 ---
	Catch	Catch	Catch	Catch
	2 Microtus (alive) ---	N/C ---	1 Microtus (alive) 1 Sylvilagus (alive)	N/C ---
	Set	Set	Set	Set
5/30/84	25 small mammal traps 15 cottontail traps	22 small mammal traps 10 cottontail traps	25 small mammal traps 20 cottontail traps	12 small mammal traps 00 cottontail traps
5/31/84	checked & reset 28 pulled cottontail traps	checked & reset 22 pulled cottontail traps	checked & reset 25 pulled cottontail traps	checked & reset 24 ---
	Catch	Catch	Catch	Catch
	2 Peromyscus (2 died) 1 Sylvilagus (dead I/T)	1 Peromyscus (died) ---	3 Microtus (1 died) ---	2 Peromyscus (2 died)
6/1/84	checked & pulled 28 1 Peromyscus (alive)	checked & pulled 22 1 Peromyscus (alive)	checked & pulled 25 N/C	checked & pulled 24 N/C
	4 Peromyscus 3 Microtus 2 Sylvilagus	4 Peromyscus 1 Microtus 0 Sylvilagus	0 Peromyscus 4 Microtus 1 Sylvilagus	3 Peromyscus (red) 0 Microtus 2 Sylvilagus

Table A-9. Inorganic Analysis - Results In PPM

ORIGINAL (red)

Rabbit

	Pit 5 11	Area 2 14	Area 3 16
Aluminum	4.60	2.40	3.30
Barium	15.2	1.5	4.70
Chromium	5.60	0.99	0.92
Copper	11.2	5.7	14.2
Iron	428	28	74.7
Lead	0.83	—	—
Manganese	2.90	0.72	1.40
Nickel	1.70	1.8	—
Tin	243	2.6	28.3
Zinc	32.2	10.7	17.2

Mouse

	Pit 5 10	Area 1 12	Area 2 13	Area 3 15
Aluminum	4.70	2.90	3.10	80.2
Barium	2.40	1.40	8.80	1.90
Chromium	0.87	0.59	1.20	1.10
Copper	7.90	6.60	5.90	8.30
Iron	115	23	121	272
Lead	2.0	1.0	3.70	2.70
Manganese	1.30	1.0	3.70	2.70
Silver	0.43	—	—	0.32
Tin	20.0	7.2	20.6	17.8
Zinc	59.9	25.5	38.8	42.2

Fish

Lackawanna River

Aluminum	6.70
Barium	1.40
Chromium	0.67
Copper	5.70
Iron	67.2
Lead	0.98
Manganese	9.00
Mercury	.059
Selenium	0.48
Tin	14.3
Zinc	18.5

Table A-8. Organic Analysis - Biological Samples- Results From [illegible] Priority Pollutant Scan in PPB

ORIGINAL (red)

Rabbit Muscle

	Pit 5	Area 2	Area 3
	11	14	16
Benzene	35	--	--
Ethyl benzene	5.7	--	--
Methylene chloride	784	--	--
Toluene	6.2	4.7	4.7
Styrene	9.8	--	--
Total Xylene	4.6	--	--

Mouse

	10 Pit 5	12 Area 1	13 Area 2	15 Area 3
Phenol	294	297	621	--
Benzyl alcohol	378	--	--	--
4-methyl phenol	--	97	573	--
Butyl benzyl phthalate	--	982	115	3220
Nitro benzene	--	--	188	--
Di-N-butylphthalate	--	--	48	--
Fluoranthene	--	--	47	--
Pyrene	--	--	50	--
Benzoic acid	--	--	--	2340
4,4-DDE	2.38	1.84	2.1	--
Dieldrin	--	--	--	6.24
Arochlor 1260 PCB	--	--	--	--
1,1,1-Trichloro ethane	51.1	53.1	53.4	61.1
Toluene	6.9	6	8.4	6
Styrene	4	4.3	5.1	2.9
Total Xylenes	4.4	--	--	--
2-hexane	--	2.91	--	--

Fish

Lackawanna River

Deldrin	6.43
PCB Arachlor 1260	1690
1,1,1-Trichloro ethane	36.7
Benzene	3.7
Tetrachloro ethane	80.6
Toluene	16.8