116824

Attachment A

DATA SUMMARY FORM: P E S T I C I D E S A N D P C B ' S

Site Name: Occidental Chem. Plant-Pottstown, PA

Case #: 39222 Sampling Date(s): March 4, 1991

5 COE 7-22-91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

CRQL	COMPOUND																							
Sample No.		OXY-LL4S-4			OXY-LL4S-9			FB															
Dilution Factor		1			1			1.25															
% Moisture		27 %			16 %			100 %															
Lab ID ~~Location~~		106954			106955			106959															
								ug/L															
8	alpha-BHC	11	U		10	U		0.06	U														
8	beta-BHC	11	U		10	U		0.06	U														
8	delta-BHC	11	U		10	U		0.06	U														
8	gamma-BHC (Lindane)	11	U		10	U		0.06	U														
8	Heptachlor	11	U		10	U		0.06	U														
8	Aldrin	11	U		10	U		0.06	U														
8	Heptachlor Epoxide	11	U		10	U		0.06	U														
8	Endosulfan I	11	U		10	U		0.06	U														
16	Dieldrin	22	U		19	U		0.13	U														
16	4,4'-DDE	22	U		19	U		0.13	U														
16	Endrin	22	U		19	U		0.13	U														
16	Endosulfan II	22	U		19	U		0.13	U														
16	4,4'-DDD	22	U		19	U		0.13	U														
16	Endosulfan Sulfate	22	U		19	U		0.13	U														
16	4,4'-DDT	22	U		19	U		0.13	U														
80	Methoxychlor	110	U		95	U		0.63	U														
16	Endrin Ketone	22	U		19	U		0.13	U														
80	alpha-Chlordane	110	U		95	U		0.63	U														
80	gamma-Chlordane	110	U		95	U		0.63	U														
160	Toxaphene	220	U		190	U		1.25	U														
80	Aroclor-1016	110	U		95	U		0.63	U														
80	Aroclor-1221	110	U		95	U		0.63	U														
80	Aroclor-1232	110	U		95	U		0.63	U														
80	Aroclor-1242	110	U		95	U		0.63	U														
80	Aroclor-1248	110	U		95	U		0.63	U														
80	Aroclor-1254	220	U		190	U		1.25	U														
80	Aroclor-1260	220	U		190	U		1.25	U														

QL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 07/90

Attachment B

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 106954

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Soil Lab Sample ID: 106954

Sample wt/vol: 30 (g/mL) g Lab File ID: 00315124

Level: (low/med) low Data Received: 3-5-91

% Moisture: not dec. ~~100~~ 27% dec. _____ Data Extracted: 3-7-91

Extraction: (SepF/Cont/Sonc) sonc Data Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: 5.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	11 8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	22 16.0	U
72-55-9	4,4'-DDE	16.0	U
72-20-8	Endrin	16.0	U
33213-65-9	Endosulfan II	16.0	U
72-54-8	4,4'-DDD	16.0	U
1031-07-8	Endosulfan sulfate	16.0	U
50-29-3	4,4'-DDT	16.0	U
72-43-5	Methoxychlor	110 80.0	U
53494-70-5	Endrin ketone	22 16.0	U
5103-71-9	alpha-Chlordane	110 80.0	U
5103-74-2	gamma-Chlordane	110 80.0	U
8001-35-2	Toxaphene	220 160.0	U
12674-11-2	Aroclor-1016	110 80.0	U
11104-28-2	Aroclor-1221	80.0	U
11141-16-5	Aroclor-1232	80.0	U
53469-21-9	Aroclor-1242	80.0	U
12672-29-6	Aroclor-1248	80.0	U
11097-69-1	Aroclor-1254	220 160.0	U
11096-82-5	Aroclor-1260	220 160.0	U

DS 2/27/92

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

106955

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) soil Lab Sample ID: 106955

Sample wt/vol: 30 (g/mL) g Lab File ID: 00315125

Level: (low/med) low Data Received: 3-5-91

% Moisture: not dec. 100 g/g 16% dec. _____ Data Extracted: 3-7-91

Extraction: (SepF/Cont/Sonc) sonc Data Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: 6.00 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	10 8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	20 16.0	U
72-55-9	4,4'-DDE	16.0	U
72-20-8	Endrin	16.0	U
33213-65-9	Endosulfan II	16.0	U
72-54-8	4,4'-DDD	16.0	U
1031-07-8	Endosulfan sulfate	16.0	U
50-29-3	4,4'-DDT	16.0	U
72-43-5	Methoxychlor	100 80.0	U
53494-70-5	Endrin ketone	20 16.0	U
5103-71-9	alpha-Chlordane	100 80.0	U
5103-74-2	gamma-Chlordane	100 80.0	U
8001-35-2	Toxaphene	200 160.0	U
12674-11-2	Aroclor-1016	100 80.0	U
11104-28-2	Aroclor-1221	80.0	U
11141-16-5	Aroclor-1232	80.0	U
53469-21-9	Aroclor-1242	80.0	U
12672-29-6	Aroclor-1248	80.0	U
11097-69-1	Aroclor-1254	200 160.0	U
11096-82-5	Aroclor-1260	200 160.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

106959

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: 106959

Sample wt/vol: 800 (g/mL) mL Lab File ID: 00315137

Level: (low/med) low Date Received: 3-5-91

% Moisture: not dec. 100% dec. _____ Date Extracted: 3-8-91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: 5.05 Dilution Factor: 10/1.25

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.06 0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.12 0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.6 0.50	U
53494-70-5	Endrin ketone	0.12 0.10	U
5103-71-9	alpha-Chlordane	0.6 0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.2 1.00	U
12674-11-2	Aroclor-1016	0.6 0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.2 1.00	U
11096-82-5	Aroclor-1260	1.00	U

DS 2/27/92

Attachment C

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401

Lab Cert. # : NJ 77175
: PA 46-007

Data Package

Client: OCCIDENTAL CHEMICAL

Project No.: 00-4064-13

Project Manager:

Order: 39222

LOCATION	SAMPLE ID	BCM No.	LOCATION	SAMPLE ID	BCM No.	LOCATION	SAMPLE ID	BCM No.
OXY-LL4S-4		106954	OXY-LL4S-9		106955	FIELD BLANK		106959
METHOD BLANK		106960	DUP 106954		106961	SPIKE 106954		106962

This case includes the following packages:

	BCM	Subcontractor
GC/MS Volatiles	[✓]	[ ]
GC/MS Semi-Volatiles	[✓]	[ ]
Metals	[✓]	[ ]
Micro	[ ]	[ ]
WetChem	[✓]	[ ]
GC	[✓]	[ ]

This is the NC package for this case.

Data Package audited by D. Martin Hugh Date 5/9/

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106954 6081CL 506-10ML 56/8 Report No :244.02
MIH FOR CLP PESTS/PCBS ON ADC-14 Page 1
COLUMN DB1/01 30M X 0.53MM 1UM FILM ID# 04930052 INJ 1 250C
P-5 ~5ML/MIN MASS FLOW MAKE UP P-5 FOR TOTAL OF ~/UML/MIN
ECD 300C, RANGE 0, 1ul INJECTION 150C, 1min 5C/min, 2/5C 9MIN

Book/Page :

Peak Processor : Genie Multilevel : False

Instrument : ADC_14 Application : Loop

Calculation : External5TD Quantitation: AreaUnits

Result File : /DATA/EXTRACTS/RESULT/00315124.RES

Run Time : 55.00 Minutes Injected on Sat Mar 16, 1991 10:25:31 am

Sequence File: /DATA/EXTRACTS/SEQUENCE/SEQCLP_031591_14.SEQ

Subseq/Sample: 1/ 24 Bottle no. : /4

Threshold	Min-Ar	Pkwidth	RF_Unknown
3.0	1.0000E+03	.040	0.000E+00

Ref Wdw Abs	Ref-RIW	Non Ref Win Abs	Non Ref-RIW	Ident Level
0.00	1.50	0.00	1.50	1000.00

% Dil-Fact	Smp-Amt	Std-Amt	% Purity	Inj Vol Ratio
1.0000E+04	0.0000E+00	1.0000E+00	100.000	1.000

Run Status : RunStatusOK
EndOffBaseline

Timed Events	Time	Events	Logic	Value	EventUpdate
1	0.00	NegativePeaks	EventOff	-1.00	False
2	.10	ResetBLAllValley	EventOn	-1.00	False

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
1	.49		.0714	124688		0.0000E+00	
2	.70		.0653	20834428		0.0000E+00	
3	.89		.0619	2471188		0.0000E+00	
4	1.11		.0670	381/668		0.0000E+00	
5	1.31	#1.35	.0691	3858/8585		8.98/1E-04	SOLVENT PEAK
6	1.44		.0384	5/4448		0.0000E+00	
7	1.70		.0683	159968		0.0000E+00	
8	1.88		.0461	10858		0.0000E+00	
9	2.06		.0475	2207B8		0.0000E+00	
10	2.15		.0775	19638		0.0000E+00	
11	2.38		.1526	764/B8		0.0000E+00	
12	2.70		.1005	5543B8		0.0000E+00	
13	2.84		.0603	14998		0.0000E+00	
14	2.98		.0755	24808		0.0000E+00	
15	3.39		.0400	25/48		0.0000E+00	
16	3.71		.0857	12108		0.0000E+00	

AR307028

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106954 6081CL 506-10ML 5678 Report No :244.02
MIH FOR CLP PESTS/PCBS ON ADC-14 Page 2

#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
17	3.90		.0850	245088		0.0000E+00	
18	4.28		.1073	1682088		0.0000E+00	
19	4.61		.0853	154688		0.0000E+00	
20	5.15		.1207	2265188		0.0000E+00	
21	5.45		.0988	75188		0.0000E+00	
22	5.81		.1391	982988		0.0000E+00	
23	6.22		.1659	8462968		0.0000E+00	
24	6.73		.1124	525188		0.0000E+00	
25	7.42	7.41	.1319	2494588		6.7757E+02	2,4,5,6-TETRACHLORO-m-XYLEN
26	7.69		.1234	743088		0.0000E+00	
27	8.04		.1223	214188		0.0000E+00	
28	8.27		.1104	295188		0.0000E+00	
29	8.63		.1479	115088		0.0000E+00	
30	8.98		.2168	460188		0.0000E+00	
31	9.64		.1737	366188		0.0000E+00	
32	10.26		.1746	1602888		0.0000E+00	
33	11.48	11.48	.0950	141788		4.2219E-02	~~Heptachlor~~
34	11.66		.1391	899988		0.0000E+00	
35	12.45	12.44	.2041	213088		7.7523E-02	~~Aldrin~~ F
36	13.56	13.62	.1807	1703788		7.8760E-01	~~beta-BHC~~ P
37	13.97		.1435	1330388		0.0000E+00	
38	14.33	14.42	.1395	463188		2.1122E-01	~~delta-BHC~~
39	14.73	14.88	.1913	1268388		4.0583E-01	~~Heptachlor epoxide~~
40	15.62	15.80	.2788	1155988		5.6097E-01	~~Endosulfan I~~
41	16.62	16.64	.1374	208988		1.3926E-01	~~4,4'-DDE~~ F
42	17.47		.2034	363188		0.0000E+00	
43	17.76	17.78	.1563	168588		1.3788E-01	~~Endrin~~
44	18.92		.2364	217588		0.0000E+00	
45	19.38	19.43	.3225	2552388		1.3015E+00	~~4,4'-DDD~~
46	20.09	19.98	.4537	2875088		1.4322E+00	~~4,4'-DDT~~
47	20.50		.1782	755488		0.0000E+00	
48	20.89	20.98	.1212	280388		1.5904E-01	~~Endrin Aldehyde~~
49	21.10		.1306	273288		0.0000E+00	
50	21.53		.1397	145388		0.0000E+00	
51	22.42	#22.41	.2558	5405988		1.0527E+02	Dibutylchlorendate 106 %
52	23.65	23.57	.3086	1288888		4.6243E-01	~~Endrin ketone~~
53	24.37		.1781	539188		0.0000E+00	
54	24.68	25.00	.1582	174788		2.6942E+01	~~CHLOROBENZILATE~~
55	26.46		1.3067	2386688		0.0000E+00	
56	26.86		.1719	177288		0.0000E+00	
57	27.51		.3575	724388		0.0000E+00	
58	27.88		.2198	290988		0.0000E+00	
59	29.68		.3287	144788		0.0000E+00	
60	30.60		.3295	276988		0.0000E+00	
61	31.73		.3882	2915588		0.0000E+00	

Total Area : 9451498 Total AMOUNT : 813.303

Report Time : Mon Mar 25, 1991 1:28:55 pm
Method : /DATA/EXTRACTS/METHOD/MIHCLP_032591_14.MIH

.441
1.440
SOLVENT
4.609
5.447
5.804
6.225
6.729
2,4,5,6-TETRACHLORO-m-XYLENE
10.260
Heptachlor
Aldrin
beta-BHC
13.972
delta-BHC
Heptachlor epoxide
Endosulfan I
4,4'-DDE
Endrin
18.917
4,4'-DDD
4,4'-DDT
20.499
Endrin Aldehyde
21.532
Dibutylchlorendate
Endrin ketone
24.174
CHLOROBENZILATE
26.461
26.864
27.510
27.879
29.676
30.597
31.732

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106954 608TCL 30G-10ML S678 Report No :214.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 1
[redacted]LUMN DB608 30M X 0.543 MM 0.83 UM FILM ID#0331222,INJ T 250
[redacted]RRIER P-5 AT 5PSI, TOTAL FLOW ~70ML/MIN ECD 300C RANGE 0
1ul INJECTION 150C, 1min 5C/min, 275C 9MIN

Book/Page :

Peak Processor : Genie Multilevel : False

Instrument : ADC_13 Application : Loop

Calculation : ExternalSTD Quantitation: AreaUnits

Result File : /DATA/EXTRACTS/RESULT/N0315124.RES

Run Time : 35.00 Minutes Injected on Sat Mar 16, 1991 11:55:59 pm

Sequence File: /DATA/EXTRACTS/SEQUENCE/SEQCLP_031591_13.SEQ

Subseq/Sample: 1/ 24 Bottle no. : 24

Threshold	Min-Ar	Pkwidth	RF_Unknown
2.0	1.0000E+03	.040	0.000E+00

Ref Wdw Abs	Ref-RTW	Non Ref Win Abs	Non Ref-RTW	Ident Level
0.00	1.50	0.00	1.50	1000.00

[redacted]Dil-Fact	Smp-Amt	Std-Amt	% Purity	Inj Vol Ratio
3.3333E+04	0.0000E+00	1.0000E+00	100.000	1.000

Run Status : RunStatusOK
EndOffBaseline

Timed Events	Time	Events	Logic	Value	EventUpdate
1	0.00	NegativePeaks	EventOff	-1.00	False
2	.10	ResetBLAllValley	EventOn	-1.00	False

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
1	.95		.1573	381888		0.0000E+00	
2	1.29		.1341	1745430BB		0.0000E+00	
3	1.52		.0375	48878BB		0.0000E+00	
4	1.69		.0505	9708BB		0.0000E+00	
5	1.87		.0668	311007BB		0.0000E+00	
6	2.05	#1.35	.0894	5007617BS		8.6820E-03	SOLVENT FRONT
7	2.38		.0369	2506BB		0.0000E+00	
8	2.50		.0910	213788B		0.0000E+00	
9	2.80		.0489	1422BB		0.0000E+00	
10	2.97		.0910	9562BB		0.0000E+00	
11	3.22		.1139	51628B		0.0000E+00	
12	3.51		.0885	2530BB		0.0000E+00	
13	3.71		.0737	5992BB		0.0000E+00	
[redacted]4	4.05		.1081	12891BB		0.0000E+00	
[redacted]5	4.47		.1454	11333BB		0.0000E+00	
16	4.84		.1256	7612BB		0.0000E+00	

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106954 608TCL 30G-10ML S678 Report No :214.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 2

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
17	5.24		.1989	5212	BB	0.0000E+00	
18	5.64		.0921	12527	BB	0.0000E+00	
19	5.89		.1226	990358	BB	0.0000E+00	
20	6.32		.0966	4668	BB	0.0000E+00	
21	6.82		.1296	87141	BB	0.0000E+00	
22	7.21		.1236	162765	BB	0.0000E+00	
23	7.48	7.41	.1277	94440	BB	1.3075E+03	2,4,5,6-TETRACHLORO-m-XYLEI
24	8.12		.1234	27486	BB	0.0000E+00	
25	8.56		.1262	6674	BB	0.0000E+00	
26	8.95		.1192	3513	BB	0.0000E+00	
27	9.20		.1275	14201	BB	0.0000E+00	
28	9.58		.2086	11349	BB	0.0000E+00	
29	9.98		.1155	685087	BB	0.0000E+00	
30	10.86		.1572	37049	BB	0.0000E+00	
31	11.31		.1400	1014	BB	0.0000E+00	
32	11.84		.1630	22426	BB	0.0000E+00	
33	12.11		.1425	5903	BB	0.0000E+00	
34	12.44		.2067	1546	BB	0.0000E+00	
35	12.70		.1780	8301	BB	0.0000E+00	
36	13.25	13.09	.1404	8723	BB	2.5316E+00	~~alpha-BHC~~
37	14.03		.3221	1332	BB	0.0000E+00	
38	14.29		.1839	3314	BB	0.0000E+00	
39	14.73	14.84	.1045	1271	BB	3.9842E-01	~~gamma-BHC (Lindane)~~
40	14.95	15.12	.1135	15335	BB	5.5178E+00	~~beta-BHC~~ F
41	15.39		.0633	115	BB	0.0000E+00	
42	15.61		.1965	8106	BB	0.0000E+00	
43	16.30	16.25	.1040	2791	BB	5.6553E-01	~~Heptachlor~~
44	16.61	16.73	.0971	9605	BB	2.6822E+00	~~delta-BHC~~
45	17.13		.1787	2243	BB	0.0000E+00	
46	17.54	17.69	.1505	58068	BB	1.5448E+01	~~Aldrin~~ F
47	18.10		.1170	1765	BB	0.0000E+00	
48	18.45		.1388	6596	BB	0.0000E+00	
49	19.01		.1416	3999	BB	0.0000E+00	
50	19.60		.1402	4475	BB	0.0000E+00	
51	19.85		.1151	1791	BB	0.0000E+00	
52	20.09	20.08	.1186	3507	BB	8.5914E-01	~~Heptachlor epoxide~~
53	20.51		.1202	6364	BB	0.0000E+00	
54	20.92	20.75	.1440	4634	BB	9.9514E-01	~~gamma-Chlordane~~
55	21.15	21.42	.1043	1069	BB	2.2530E-01	~~alpha-Chlordane~~
56	21.53	21.58	.1167	3231	BB	7.5689E-01	~~Endosulfan I~~
57	22.06		.1294	16037	BB	0.0000E+00	
58	22.33	22.43	.1572	15897	BB	4.9208E+00	~~4,4'-DDE~~ F
59	22.82	22.86	.0835	2754	BB	7.7049E-01	~~Dieldrin~~
60	23.20		.1877	2141	BB	0.0000E+00	
61	23.56		.1147	2172	BB	0.0000E+00	
62	23.81		.1173	1061	BB	0.0000E+00	
63	25.09	25.12	.1272	1847	BB	5.2744E-01	~~Endosulfan II~~
64	25.34		.1146	3445	BB	0.0000E+00	
65	25.58		.1739	2957	BB	0.0000E+00	
66	26.15	25.95	.1948	6884	BB	2.2839E+00	~~4,4'-DDT~~ F
67	26.50	26.52	.1620	259195	BB	1.4467E+03	~~Endosulfan sulfate~~
68	26.95		.1490	18934	BB	0.0000E+00	

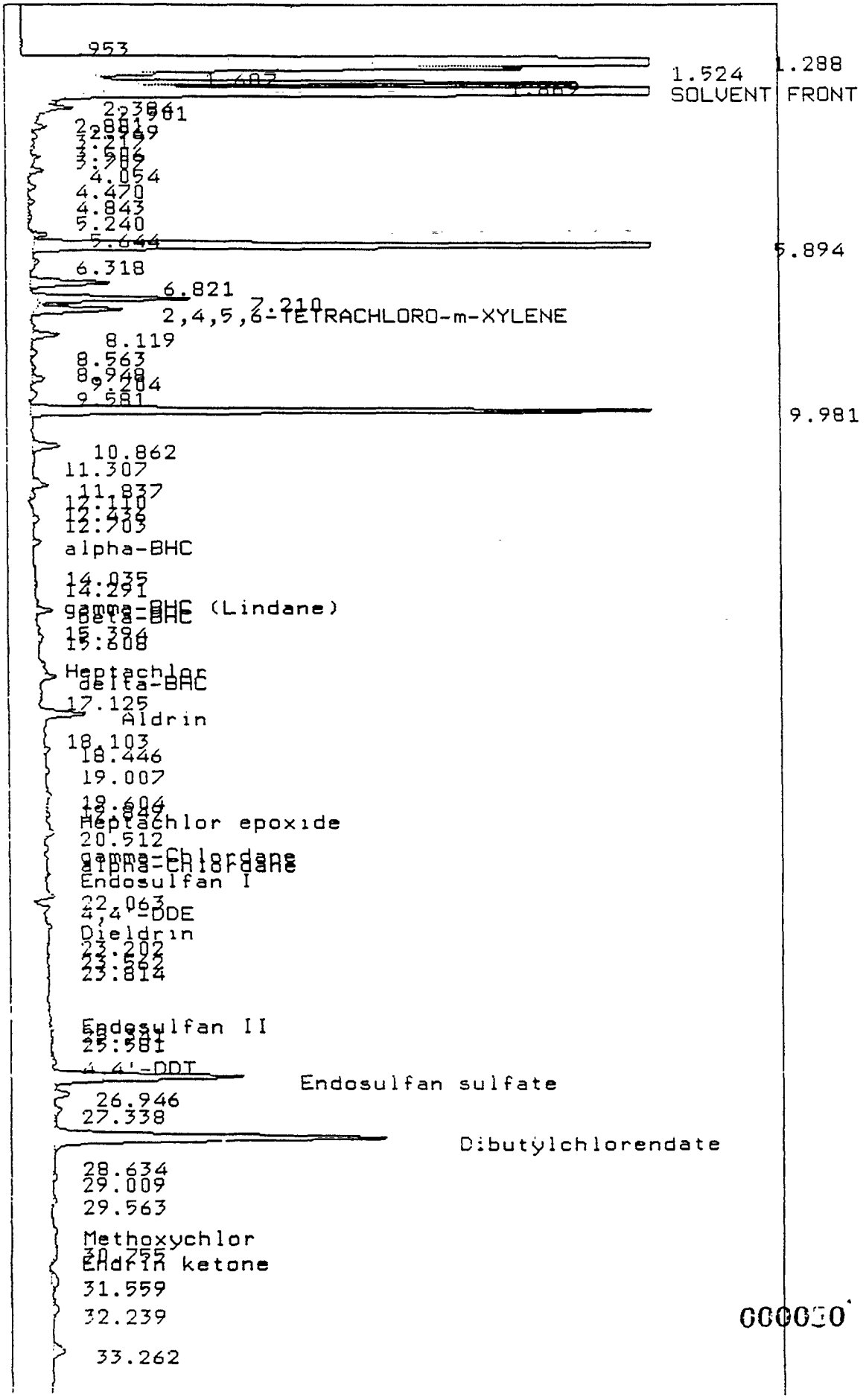
BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106954 608TCL 30G-10ML S678 Report No :214.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 3

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
69	27.34		.1996	11340BB		0.0000E+00	
70	28.01	#28.03	.1753	486941BB		1.5130E+02	Dibutylchlorendate
71	28.63		.1976	1287BB		0.0000E+00	
72	29.01		.1392	3421BB		0.0000E+00	
73	29.56		.1678	6094BB		0.0000E+00	
74	30.31	30.15	.2011	4222BB		2.2503E+00	~~Methoxychlor~~
75	30.76		.1407	1164BB		0.0000E+00	
76	30.95	31.12	.2191	3656BB		8.7727E-01	~~Endrin ketone~~
77	31.56		.3564	18362BB		0.0000E+00	
78	32.24		.2769	11616BB		0.0000E+00	
79	33.26		.2411	24087BB		0.0000E+00	

Total Area : 10443394 Total AMOUNT : 2947.067

Report Time : Sun Mar 17, 1991 12:32:06 am
Method : /DATA/EXTRACTS/METHOD/MTHCLP_031491_13.MTH


953
1.288
1.524
SOLVENT FRONT
2.386
2.961
2.819
3.212
3.506
3.902
4.054
4.470
4.843
5.240
5.644
5.894
6.318
6.821
7.210
2,4,5,6-TETRACHLORO-m-XYLENE
8.119
8.563
8.948
9.204
9.581
9.981
10.862
11.307
11.837
12.110
12.430
12.703
alpha-BHC
14.035
14.291
gamma-BHC (Lindane)
beta-BHC
15.396
15.808
Heptachlor
delta-BHC
17.125
Aldrin
18.103
18.446
19.007
19.604
19.849
Heptachlor epoxide
20.512
gamma-Chlordane
alpha-Chlordane
Endosulfan I
22.063
4,4'-DDE
Dieldrin
23.202
23.625
23.814
Endosulfan II
25.581
4,4'-DDT
Endosulfan sulfate
26.946
27.338
Dibutylchlorendate
28.634
29.009
29.563
Methoxychlor
30.255
Endrin ketone
31.559
32.239
33.262

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

106955

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Soil Lab Sample ID: 106955

Sample wt/vol: 30 (g/mL) g Lab File ID: 00315125

Level: (low/med) low Data Received: 3-5-91

% Moisture: not dec. ~~100~~ 16% dec. _____ Data Extracted: 3-7-91

Extraction: (SepF/Cont/Sonc) sonc Data Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: 6.00 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	10 8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	20 16.0	U
72-55-9	4,4'-DDE	16.0	U
72-20-8	Endrin	16.0	U
33213-65-9	Endosulfan II	16.0	U
72-54-8	4,4'-DDD	16.0	U
1031-07-8	Endosulfan sulfate	16.0	U
50-29-3	4,4'-DDT	16.0	U
72-43-5	Methoxychlor	100 ~~80.0~~	U
53494-70-5	Endrin ketone	20 ~~16.0~~	U
5103-71-9	alpha-Chlordane	100 80.0	U
5103-74-2	gamma-Chlordane	100 80.0	U
8001-35-2	Toxaphene	200 ~~160.0~~	U
12674-11-2	Aroclor-1016	100 80.0	U
11104-28-2	Aroclor-1221	80.0	U
11141-16-5	Aroclor-1232	80.0	U
53469-21-9	Aroclor-1242	80.0	U
12672-29-6	Aroclor-1248	80.0	U
11097-69-1	Aroclor-1254	200 160.0	U
11096-82-5	Aroclor-1260	200 160.0	U

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106955 60811LL 300-10ML 56/8 Report No :245.02
MIH FOR CLP PESTS/PCBS ON ADC-14 Page 1
COLUMN DB1/01 30M X 0.53MM 1UM FILM ID# 0493052 INJ 1 250C
P-5 ~5ML/MIN MASS FLOW MAKE UP P-5 FOR TOTAL OF ~/0ML/MIN
ECD 300C, RANGE 0, 1ul INJECTION 150C, 1min 5C/min, 270C 9MIN

Book/Page :

Peak Processor : Genie Multilevel : False

Instrument : ADC_14 Application : Loop

Calculation : External STD Quantitation: AreaUnits

Result File : /DATA/EXTRACTS/RESULT/00315125.RES

Run Time : 55.00 Minutes Injected on Sat Mar 16, 1991 11:04:01 am

Sequence File: /DATA/EXTRACTS/SEQUENCE/SEQCLP_031591_14.SEQ

Subseq/Sample: 1/ 25 Bottle no. : 75

Threshold	Min-Ar	Pkwidth	Rf_Unknown
5.0	1.0000E+05	.040	0.000E+00

Ref Wdw Abs	Ref-RIW	Non Ref Win Abs	Non Ref-RIW	Ident Level
0.00	1.50	0.00	1.50	1000.00

% Dil-Fact	Smp-Amt	Std-Amt	% Purity	Inj Vol Ratio
1.0000E+04	0.0000E+00	1.0000E+00	100.000	1.000

Run Status : RunStatusOK
EndOffBaseline

Timed Events	Time	Events	Logic	Value	EventUpdate
1	0.00	NegativePeaks	EventOff	-1.00	False
2	.10	ResetBLAllValley	EventOn	-1.00	False

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
1	.71		.0645	18428235		0.0000E+00	
2	.89		.0681	2942488		0.0000E+00	
3	1.10		.0705	659635BB		0.0000E+00	
4	1.31	#1.35	.0737	41040485		9.5584E-04	SOLVENT PEAK
5	1.44		.0476	695038B		0.0000E+00	
6	1.59		.0548	51926BB		0.0000E+00	
7	1.70		.0579	149508B		0.0000E+00	
8	1.90		.0962	554988B		0.0000E+00	
9	2.05		.0487	29683		0.0000E+00	
10	2.15		.0701	54198B		0.0000E+00	
11	2.37		.0787	74485B		0.0000E+00	
12	2.63		.0820	81248B		0.0000E+00	
13	2.85		.0729	28658B		0.0000E+00	
14	2.99		.0648	43918B		0.0000E+00	
15	3.20		.0715	166118B		0.0000E+00	
16	3.39		.0626	30688B		0.0000E+00	

AR307036

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106955 6U81CL 5UG-1UML S6/8 Report No :245.02
MIH FOR CLP PESTS/PCBS ON ADC-14 Page 2

k#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
17	3.73		.0698	148888		0.00000E+00	
18	3.87		.0795	5894BB		0.00000E+00	
19	4.27		.1250	2663188		0.00000E+00	
20	4.62		.1010	1234488		0.00000E+00	
21	4.90		.1044	503977B		0.00000E+00	
22	5.14		.1215	8850388B		0.00000E+00	
23	5.47		.1268	1506188		0.00000E+00	
24	5.85		.1580	20830888		0.00000E+00	
25	6.22		.1577	9003868B		0.00000E+00	
26	6.88		.1121	63828B		0.00000E+00	
27	7.08		.1383	138188		0.00000E+00	
28	7.43	7.41	.1453	417948B		1.13552E+03	2,4,5,6-TETRACHLORO-m-XYLE
29	7.67		.0965	67508B		0.00000E+00	
30	7.97		.1074	8587BB		0.00000E+00	
31	8.27		.1272	790948B		0.00000E+00	
32	8.59		.1255	78328B		0.00000E+00	
33	8.82		.1167	526688		0.00000E+00	
34	9.40	9.37	.0993	24828B		8.7731E-02	~~alpha-BHC~~ F
35	9.62		.1544	87628B		0.00000E+00	
36	10.25		.1400	1153388		0.00000E+00	
37	10.58		.1482	22458B		0.00000E+00	
38	10.85	10.80	.1676	848088		5.6531E-01	~~gamma-BHC (Lindane)~~ F
39	11.25		.0904	154988		0.00000E+00	
40	11.49	11.48	.0832	20208B		6.0188E-02	~~Heptachlor~~
41	11.66		.0946	57618B		0.00000E+00	
42	11.81		.1014	5776BB		0.00000E+00	
43	12.42	12.44	.1778	516688		1.8799E-01	~~Aldrin~~ F
44	12.67		.1162	140688		0.00000E+00	
45	13.54	13.62	.1269	502628B		1.5990E+00	~~beta-BHC~~
46	13.96		.1452	4511518B		0.00000E+00	
47	14.33	14.42	.1464	516288		2.3544E-01	~~delta-BHC~~ F
48	14.71	14.88	.2083	166328B		5.3219E-01	~~Heptachlor epoxide~~
49	15.85	15.80	.2426	23758BB		7.417E-01	~~Endosulfan I~~ F
50	16.87	16.64	.1366	238988		1.5924E-01	~~4,4'-DDE~~
51	17.17	17.11	.1394	108988		4.0238E-02	~~Dieldrin~~
52	17.50		.1961	239188		0.00000E+00	
53	17.72	17.78	.1207	141488		1.1565E-01	~~Endrin~~
54	18.77		.2572	1423688		0.00000E+00	
55	19.18	19.43	.5141	599718B		2.0382E+00	~~4,4'-DDD~~ F
56	20.49		.2293	5776588B		0.00000E+00	
57	21.17	20.98	.1912	101988		9.7794E-02	~~Endrin Aldehyde~~
58	22.41	#22.41	.2802	6862928B		1.3111E+02	Dibutylchlorendate 135%
59	22.88		.1784	296888		0.00000E+00	
60	23.66	23.57	.1043	298488		1.0705E-01	~~Endrin ketone~~
61	24.38		.1453	57288B		0.00000E+00	
62	25.67		.3055	15017BB		0.00000E+00	
63	26.24		.4259	186088		0.00000E+00	
64	26.57		.2006	136088		0.00000E+00	
65	26.97		.2260	550288		0.00000E+00	
66	27.46		.2169	289588		0.00000E+00	
67	27.85		.2029	113988		0.00000E+00	
68	29.73		.3683	55758B		0.00000E+00	

AR307037

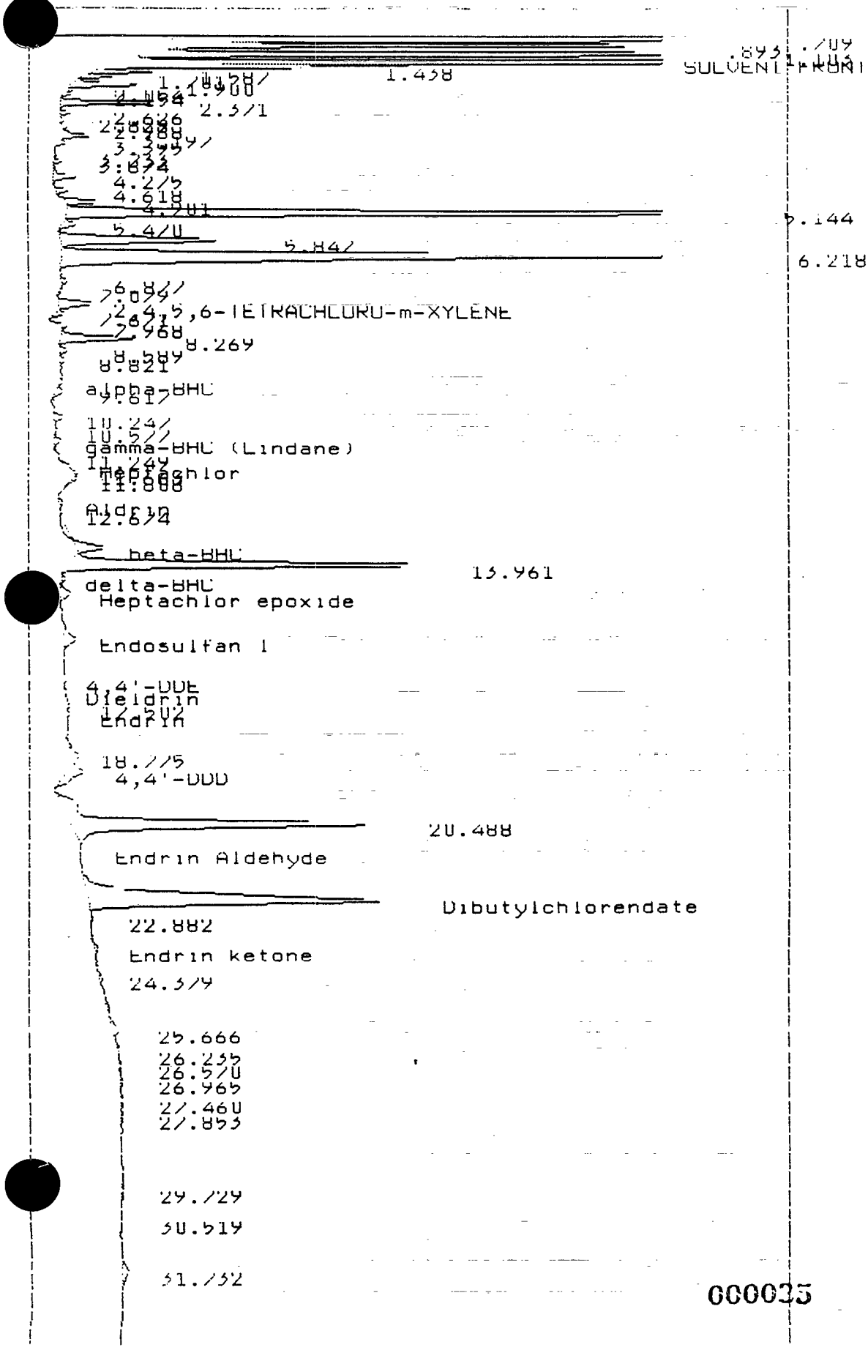
BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106955 6081CL 506-10ML 568 Report No :245.02
MIH FOR CLP PESTS/PCBS ON ADC-14 Page 5

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
69	50.52		.2850	189488		0.0000E+00	
8	51.75		.4544	2241988		0.0000E+00	

Total Area : 11380944 Total AMOUNT : 1272.405

Report Time : Mon Mar 25, 1991 1:54:43 pm
Method : /DATA/EXTRACTS/METHOD/MIHCLP_032591_14.MIH


SOLVENT FRONT
1.438
2.371
5.144
6.218
8.269
alpha-BHC
gamma-BHC (Lindane)
Heptachlor
Aldrin
beta-BHC
13.961
delta-BHC
Heptachlor epoxide
Endosulfan I
4,4'-DDE
Dieldrin
Endrin
4,4'-DDD
20.488
Endrin Aldehyde
Dibutylchlorendate
22.882
Endrin ketone
24.379
25.666
26.255
26.570
26.969
27.460
27.853
29.729
30.519
31.752

AR307039

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106955 608TCL 30G-10ML S678 Report No :215.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 1
COLUMN DB608 30M X 0.543 MM 0.83 UM FILM ID#0331222,INJ T 250
CARRIER P-5 AT 5PSI, TOTAL FLOW ~70ML/MIN ECD 300C RANGE 0
1ul INJECTION 150C, 1min 5C/min, 275C 9MIN

Book/Page :

Peak Processor : Genie Multilevel : False

Instrument : ADC_13 Application : Loop

Calculation : ExternalSTD Quantitation: AreaUnits

Result File : /DATA/EXTRACTS/RESULT/N0315125.RES

Run Time : 35.00 Minutes Injected on Sun Mar 17, 1991 12:34:25 am

Sequence File: /DATA/EXTRACTS/SEQUENCE/SEQCLP_031591_13.SEQ

Subseq/Sample: 1/ 25 Bottle no. : 25

Threshold	Min-Ar	Pkwidth	RF_Unknown
2.0	1.0000E+03	.040	0.000E+00

Ref Wdw Abs	Ref-RTW	Non Ref Win Abs	Non Ref-RTW	Ident Level
0.00	1.50	0.00	1.50	1000.00

% Dil-Fact	Smp-Amt	Std-Amt	% Purity	Inj Vol Ratio
3.3333E+04	0.0000E+00	1.0000E+00	100.000	1.000

Run Status : RunStatusOK
EndOffBaseline

Timed Events	Time	Events	Logic	Value	EventUpdate
1	0.00	NegativePeaks	EventOff	-1.00	False
2	.10	ResetBLAllValley	EventOn	-1.00	False

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
1	1.30		.1264	14813168	BB	0.0000E+00	
2	1.53		.0642	991188	BB	0.0000E+00	
3	1.89		.0761	4488018	BB	0.0000E+00	
4	2.05	#1.35	.0928	50978918	BS	8.8385E-03	SOLVENT FRONT
5	2.50		.0473	107858	BB	0.0000E+00	
6	2.59		.0455	153148	BB	0.0000E+00	
7	2.82		.0720	91498	BB	0.0000E+00	
8	2.97		.0866	408878	BB	0.0000E+00	
9	3.21		.0914	150128	BB	0.0000E+00	
10	3.39		.0489	10178	BB	0.0000E+00	
11	3.50		.0862	20798	BB	0.0000E+00	
12	3.71		.0963	758178	BB	0.0000E+00	
13	4.05		.1577	188998	BB	0.0000E+00	
14	4.46		.1443	190928	BB	0.0000E+00	
15	4.87		.0954	230048	BB	0.0000E+00	
16	5.04		.0695	24198	BB	0.0000E+00	

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106955 608TCL 30G-10ML S678 Report No :215.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 2

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
[illegible]	5.28		.1262	10392	BB	0.0000E+00	
[illegible]	5.65		.0879	13717	BB	0.0000E+00	
19	5.90		.1262	1116152	BB	0.0000E+00	
20	6.31		.0948	3049	BB	0.0000E+00	
21	6.63		.0846	834	BB	0.0000E+00	
22	6.82		.1226	99212	BB	0.0000E+00	
23	7.22		.1241	236155	BB	0.0000E+00	
24	7.49	7.41	.1292	847878	BB	1.1738E+03	2,4,5,6-TETRACHLORO-m-XYLEN
25	8.12		.1485	243596	BB	0.0000E+00	
26	8.54		.1607	1300	BB	0.0000E+00	
27	8.80		.1261	873	BB	0.0000E+00	
28	9.21		.1355	1930	BB	0.0000E+00	
29	9.58		.2198	1806	BB	0.0000E+00	
30	9.99		.1171	762648	BB	0.0000E+00	
31	10.67		.0970	309	BB	0.0000E+00	
32	10.87		.1302	3386	BB	0.0000E+00	
33	11.14		.1082	1046	BB	0.0000E+00	
34	11.86		.2025	4761	BB	0.0000E+00	
35	12.11		.1231	1464	BB	0.0000E+00	
36	12.64		.1271	10056	BB	0.0000E+00	
37	13.25	13.09	.1230	1089	BB	3.1630E+00	~~alpha-BHC~~ F
38	13.46		.1283	778	BB	0.0000E+00	
39	13.89		.1457	2027	BB	0.0000E+00	
40	14.22		.1024	137	BB	0.0000E+00	
41	14.38		.1059	844	BB	0.0000E+00	
[illegible]	14.95	14.84	.1217	1754	BB	5.4962E+00	~~gamma-BHC (Lindane)~~ F
[illegible]	15.62		.2189	1881	BB	0.0000E+00	
44	16.00		.1439	237	BB	0.0000E+00	
45	16.29	16.25	.1292	933	BB	1.8919E+00	~~Heptachlor~~
46	16.62	16.73	.1382	2470	BB	6.8985E+00	~~delta-BHC~~ F
47	17.14		.1598	205	BB	0.0000E+00	
48	17.54	17.69	.1912	10396	BB	2.7657E+01	~~Aldrin~~ F
49	18.10		.1053	116	BB	0.0000E+00	
50	18.60		.0640	177	BB	0.0000E+00	
51	18.75		.1148	195	BB	0.0000E+00	
52	19.05		.1147	681	BB	0.0000E+00	
53	19.61		.1584	581	BB	0.0000E+00	
54	19.87		.1142	331	BB	0.0000E+00	
55	20.10	20.08	.1315	370	BB	9.0711E-01	~~Heptachlor epoxide~~
56	20.38		.0960	175	BB	0.0000E+00	
57	20.50		.1003	155	BB	0.0000E+00	
58	20.92	20.75	.1219	248	BB	5.3348E-01	~~gamma-Chlordane~~
59	21.26	21.42	.1093	268	BB	5.6573E-01	~~alpha-Chlordane~~
60	21.53	21.58	.1300	320	BB	7.5172E-01	~~Endosulfan~~ I F
61	21.79		.1238	363	BB	0.0000E+00	
62	22.07		.1018	1287	BB	0.0000E+00	
63	22.35	22.43	.1752	1978	BB	6.1243E+00	~~4,4'-DDE~~
64	22.82	22.86	.0455	117	BB	3.2959E-01	~~Dieldr~~in
65	23.00		.1135	458	BB	0.0000E+00	
66	23.39		.1961	1505	BB	0.0000E+00	
[illegible]	23.79		.1158	195	BB	0.0000E+00	
[illegible]	24.64	24.71	.1941	395	BB	~~1.4901E+00~~	~~4,4'-DDD~~ F

73	26.15	25.95	.1062						
74	26.50	26.46	.1410						
75	26.95	26.52	.1201						
76	27.54		.0991						
77	28.01	#28.03	.1640						
78	28.62		.1455						
79	29.60		.1390						
80	30.28		.1705						
81	30.56	30.15	.2467						
82	30.94		.1327						
83	31.40	31.12	.2134						
84	32.26		.1832						
85	33.27		.2035						
	34.10		.1904						
			.2342						
			.2211						
			.4694						

Total Area : 11969780

Report Time : Sun Mar 17, 1991 1:10:34 am

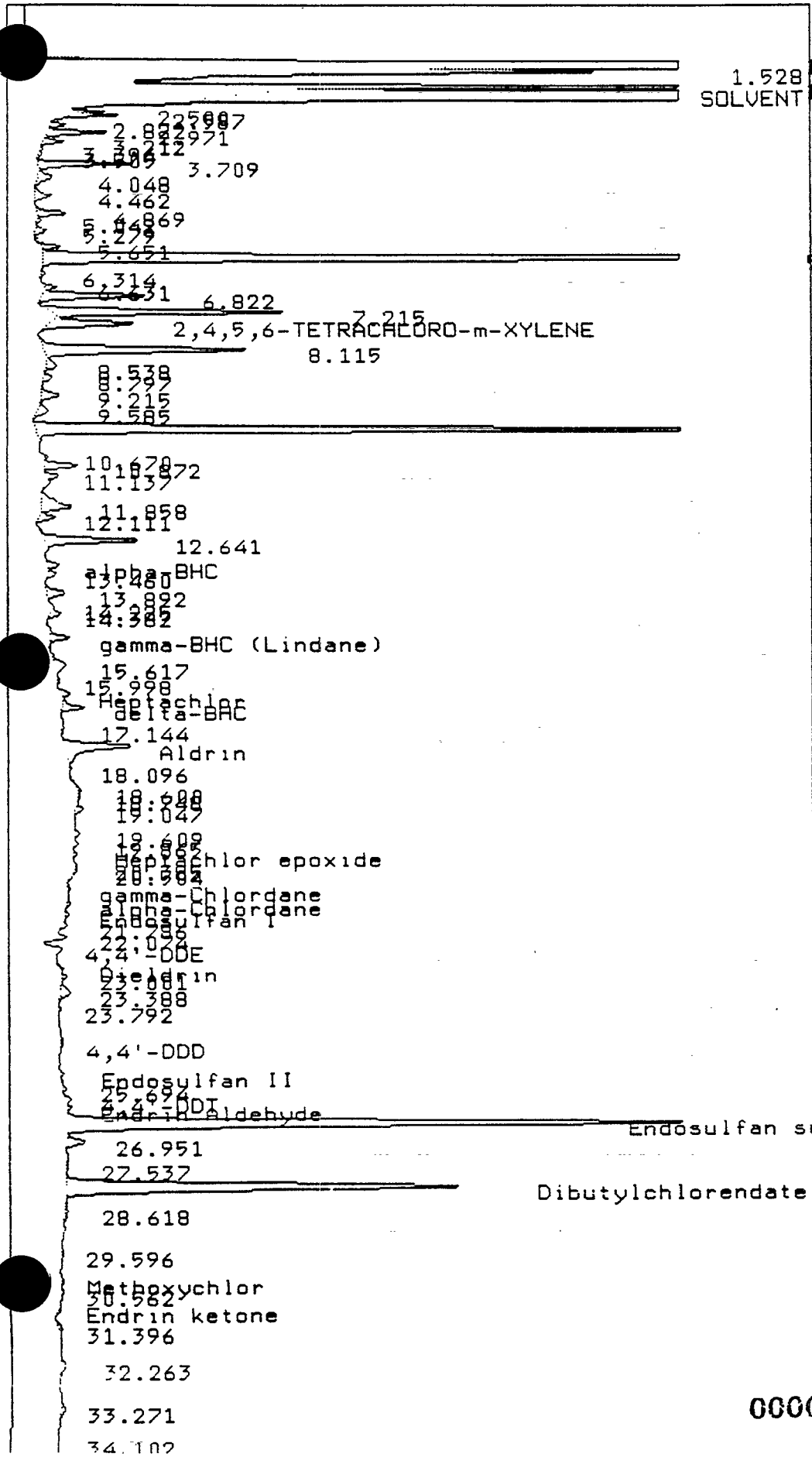
Method : /DATA/EXTRACTS/METHOD/MTHCLP_031491_13.MTH

...idth ...-13 ...UML ...edium_Area Form S678

Report No :215.

Area Code	AMOUNT	Name
3130BB	8.9391E-01	~~Endosulfan II~~
4485BB	0.0000E+00	
4858BB	1.6116E+00	~~4,4'-DDT~~
3171BB	1.0472E+00	~~Endrin Aldehyde~~
819274BB	4.5727E+03	~~Endosulfan sulfate~~
20279BB	0.0000E+00	
1194BB	0.0000E+00	
539213BB	1.6754E+02	Dibutylchlorendate
5340BB	0.0000E+00	
2354BB	0.0000E+00	
2829BB	1.5077E+00	~~Methoxychlor~~
2271BB	0.0000E+00	
2288BB	5.4908E-01	~~Endrin ketone~~
4414BB	0.0000E+00	
9584BB	0.0000E+00	
8151BB	0.0000E+00	
2125BB	0.0000E+00	

Total AMOUNT : 5975.486


1.528
1.301
SOLVENT FRONT
2.822
2.971
3.709
4.048
4.462
5.279
5.651
5.900
6.314
6.822
7.215
2,4,5,6-TETRACHLORO-m-XYLENE
8.115
8.538
9.215
9.586
9.986
10.678
11.139
11.858
12.111
12.641
alpha-BHC
13.460
13.892
14.382
gamma-BHC (Lindane)
15.617
15.998
Heptachlor
delta-BHC
17.144
Aldrin
18.096
19.047
Heptachlor epoxide
gamma-Chlordane
alpha-Chlordane
Endosulfan I
22.026
4,4'-DDE
Dieldrin
23.081
23.388
23.792
4,4'-DDD
Endosulfan II
25.696
4,4'-DDT
Endrin aldehyde
Endosulfan sulfate
26.951
27.537
Dibutylchlorendate
28.618
29.596
Methoxychlor
30.582
Endrin ketone
31.396
32.263
33.271
34.102

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 106959

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: 106959

Sample wt/vol: 800 (g/mL) mL Lab File ID: 00315137

Level: (low/med) low Date Received: 3-5-91

% Moisture: not dec. 100% dec. _____ Date Extracted: 3-8-91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: 5.05 Dilution Factor: ~~1.0~~ 1.25

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L		Q
319-84-6	alpha-BHC		0.06 ~~0.05~~	U
319-85-7	beta-BHC		0.05	U
319-86-8	delta-BHC		0.05	U
58-89-9	gamma-BHC (Lindane)		0.05	U
76-44-8	Heptachlor		0.05	U
309-00-2	Aldrin		0.05	U
1024-57-3	Heptachlor epoxide		0.05	U
959-98-8	Endosulfan I		0.05	U
60-57-1	Dieldrin		0.12 ~~0.10~~	U
72-55-9	4,4'-DDE		0.10	U
72-20-8	Endrin		0.10	U
33213-65-9	Endosulfan II		0.10	U
72-54-8	4,4'-DDD		0.10	U
1031-07-8	Endosulfan sulfate		0.10	U
50-29-3	4,4'-DDT		0.10	U
72-43-5	Methoxychlor	0.6	~~0.06~~ 0.50	U
53494-70-5	Endrin ketone		0.12 ~~0.10~~	U
5103-71-9	alpha-Chlordane	0.6	~~0.06~~ 0.50	U
5103-74-2	gamma-Chlordane	0.6	0.50	U
8001-35-2	Toxaphene		1.2 ~~1.0~~	U
12674-11-2	Aroclor-1016		0.6 0.50	U
11104-28-2	Aroclor-1221		0.50	U
11141-16-5	Aroclor-1232		0.50	U
53469-21-9	Aroclor-1242		0.50	U
12672-29-6	Aroclor-1248		0.50	U
11097-69-1	Aroclor-1254		1.2 1.00	U
11096-82-5	Aroclor-1260		1.00	U

DS
2/27/92

	34.555

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106999 60816L 800ML-10ML W680 Report No :257.02
MTH FOR CLP PESTS/PCBS ON ADC-14 Page 1
COLUMN DB1/01 30M X 0.53MM 1UM FILM ID# 0493052 INJ 1 250C
P-5 ~5ML/MIN MASS FLOW MAKE UP P-5 FOR TOTAL OF ~/0ML/MIN
ECD 300C, RANGE 0, 1ul INJECTION 150C, 1min 5C/min, 2/5C 9MIN

Book/Page :

Peak Processor : Genie Multilevel : False

Instrument : ADC_14 Application : Loop

Calculation : ExternalSTD Quantitation: AreaUnits

Result File : /DATA/EXTRACTS/RESULT/00315137.RES

Run Time : 35.00 Minutes Injected on Sat Mar 16, 1991 6:45:45 pm

Sequence File: /DATA/EXTRACTS/SEQUENCE/SEQCLP_031591_14.SEQ

Subseq/Sample: 1/ 3/ Bottle no. : 8/

Threshold	Min-Ar	Pkwidth	RF_Unknown
3.0	1.00000E+03	.040	0.0000E+00

Ref Wdw Abs	Ref-RTW	Non Ref Win Abs	Non Ref-RTW	Ident Level
0.00	1.50	0.00	1.50	1000.00

% Dil-Fact	Smp-Amt	Std-Amt	% Purity	Inj Vol Ratio
1.2500E+03	0.0000E+00	1.0000E+00	100.000	1.000

Run Status : RunStatusOK
EndOffBaseline

Timed Events	Time	Events	Logic	Value	EventUpdate
1	0.00	NegativePeaks	EventOff	-1.00	False
2	.10	ResetBLAllValley	EventOn	-1.00	False

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
1	.71	#1.35	.076	1047036BB		9.1446E-06	SOLVENT PRINT
2	1.14		.0804	951BBB		0.0000E+00	
3	1.40		.0755	41377BB		0.0000E+00	
4	1.50		.0781	1416OBB		0.0000E+00	
5	1.68		.0572	17659BB		0.0000E+00	
6	2.06		.0596	4663BB		0.0000E+00	
7	2.39		.0621	10808B		0.0000E+00	
8	2.67		.0977	11738B		0.0000E+00	
9	2.98		.1585	37228B		0.0000E+00	
10	3.32		.1342	82697B		0.0000E+00	
11	3.88		.0841	18259B		0.0000E+00	
12	4.60		.1199	18748B		0.0000E+00	
13	5.14		.1179	182725BB		0.0000E+00	
14	5.44		.0942	22318B		0.0000E+00	
15	6.22		.1630	1118565BB		0.0000E+00	
16	6.72		.1099	56618B		0.0000E+00	

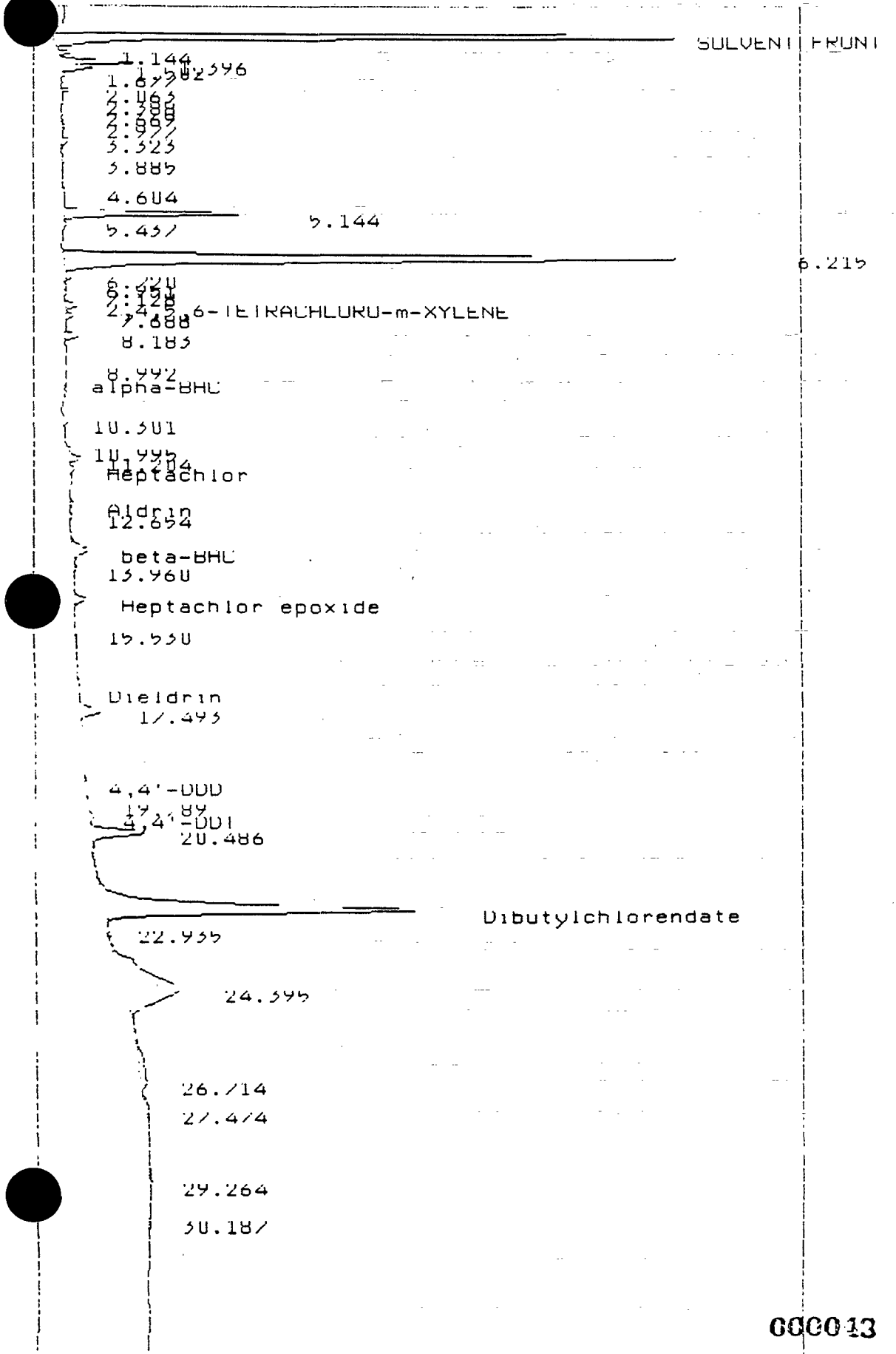
BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106999 6081CL 8UUML-1UML W68U Report No :297.02
MIH FOR CLP PESTS/PCBS ON ADC-14 Page 2

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
17	6.95		.0943	131188		0.00000E+00	
18	7.13		.1086	150788		0.00000E+00	
19	7.42	7.41	.1280	1524988		1.5532E+01	2,4,5,6-TETRACHLORO-m-XYLE
20	7.69		.1353	845888		0.00000E+00	
21	8.18		.1363	1711188		0.00000E+00	
22	8.99		.1818	280588		0.00000E+00	
23	9.32	9.37	.1589	121688		1.6116E-03	alpha-BHC
24	10.30		.1630	666388		0.00000E+00	
25	11.00		.0940	129188		0.00000E+00	
26	11.20		.1351	1145288		0.00000E+00	
27	11.47	11.48	.1575	67168B		7.5026E-03	Heptachlor
28	12.33	12.44	.1759	496288		6.7711E-03	Aldrin
29	12.65		.1429	278288		0.00000E+00	
30	13.53	13.62	.2413	513758B		5.4390E-02	beta-BHC
31	13.96		.1587	54708B		0.00000E+00	
32	14.75	14.88	.1683	1608188		1.9297E-02	Heptachlor epoxide
33	15.53		.1786	167488		0.00000E+00	
34	16.98	17.11	.1860	104788		1.4514E-03	Dieldrin
35	17.49		.1955	337128B		0.00000E+00	
36	19.25	19.43	.8057	284488		5.4378E-03	4,4'-DDD
37	19.79		.1952	232688		0.00000E+00	
38	20.10	19.98	.1618	666388		1.2447E-02	4,4'-DDT
39	20.49		.1888	8881688		0.00000E+00	
40	22.41	#22.41	.2555	6837368B		4.8982E+00	Dibutylchlorendate
41	22.94		.1443	111188		0.00000E+00	
42	24.40		.8222	38419688		0.00000E+00	
43	26.71		1.0275	5108488		0.00000E+00	
44	27.47		.5157	134078B		0.00000E+00	
45	29.26		.3611	48678B		0.00000E+00	
46	30.19		.3247	12778B		0.00000E+00	
47	34.35		.3370	152588		0.00000E+00	

Total Area : 38563697 Total AMOUNT : 20.339

Report Time : Mon Mar 25, 1991 2:44:20 pm
Method : /DATA/EXTRACTS/METHOD/MTHCLP_030591_14.MTH


SOLVENT FRONT
5.144
6.215
2,4,5,6-TETRACHLORO-m-XYLENE
alpha-BHC
Heptachlor
Aldrin
beta-BHC
Heptachlor epoxide
Dieldrin
4,4'-DDD
4,4'-DDT
Dibutylchlorendate

BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106959 608TCL 800ML-10ML W680 Report No :227.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 1
COLUMN DB608 30M X 0.543 MM 0.83 UM FILM ID#0331222,INJ T 250
CARRIER P-5 AT 5PSI, TOTAL FLOW ~70ML/MIN ECD 300C RANGE 0
1ul INJECTION 150C, 1min 5C/min, 275C 9MIN

Book/Page :

Peak Processor : Genie Multilevel : False

Instrument : ADC_13 Application : Loop

Calculation : ExternalSTD Quantitation: AreaUnits

Result File : /DATA/EXTRACTS/RESULT/N0315137.RES

Run Time : 35.00 Minutes Injected on Sun Mar 17, 1991 8:16:20 am

Sequence File: /DATA/EXTRACTS/SEQUENCE/SEQCLP_031591_13.SEQ

Subseq/Sample: 1/ 37 Bottle no. : 37

Threshold	Min-Ar	Pkwidth	RF_Unknown
2.0	1.0000E+03	.040	0.000E+00

Ref Wdw Abs	Ref-RTW	Non Ref Win Abs	Non Ref-RTW	Ident Level
0.00	1.50	0.00	1.50	1000.00

% Dil-Fact	Smp-Amt	Std-Amt	% Purity	Inj Vol Ratio
1.2500E+03	0.0000E+00	1.0000E+00	100.000	1.000

Run Status : RunStatusOK
EndOffBaseline

Timed Events	Time	Events	Logic	Value	EventUpdate
1	0.00	NegativePeaks	EventOff	-1.00	False
2	.10	ResetBLAllValley	EventOn	-1.00	False

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
1	1.73		.0904	1514BB		0.0000E+00	
2	1.88		.0534	2276BB		0.0000E+00	
3	2.08		.0403	1391BB		0.0000E+00	
4	2.17		.0490	3842BB		0.0000E+00	
5	2.26	#1.35	.0504	6163BB		4.0072E-07	SOLVENT FRONT
6	2.39		.0469	8012BB		0.0000E+00	
7	2.51		.0874	9058BB		0.0000E+00	
8	2.92		.1552	1296BB		0.0000E+00	
9	3.23		.1286	5845BB		0.0000E+00	
10	3.71		.1171	1680BB		0.0000E+00	
11	4.06		.1501	6632BB		0.0000E+00	
12	4.50		.1683	3174BB		0.0000E+00	
13	4.89		.1349	1364BB		0.0000E+00	
14	5.44		.1701	1260BB		0.0000E+00	
15	5.67		.0785	1071BB		0.0000E+00	
16	5.91		.1344	185981BB		0.0000E+00	

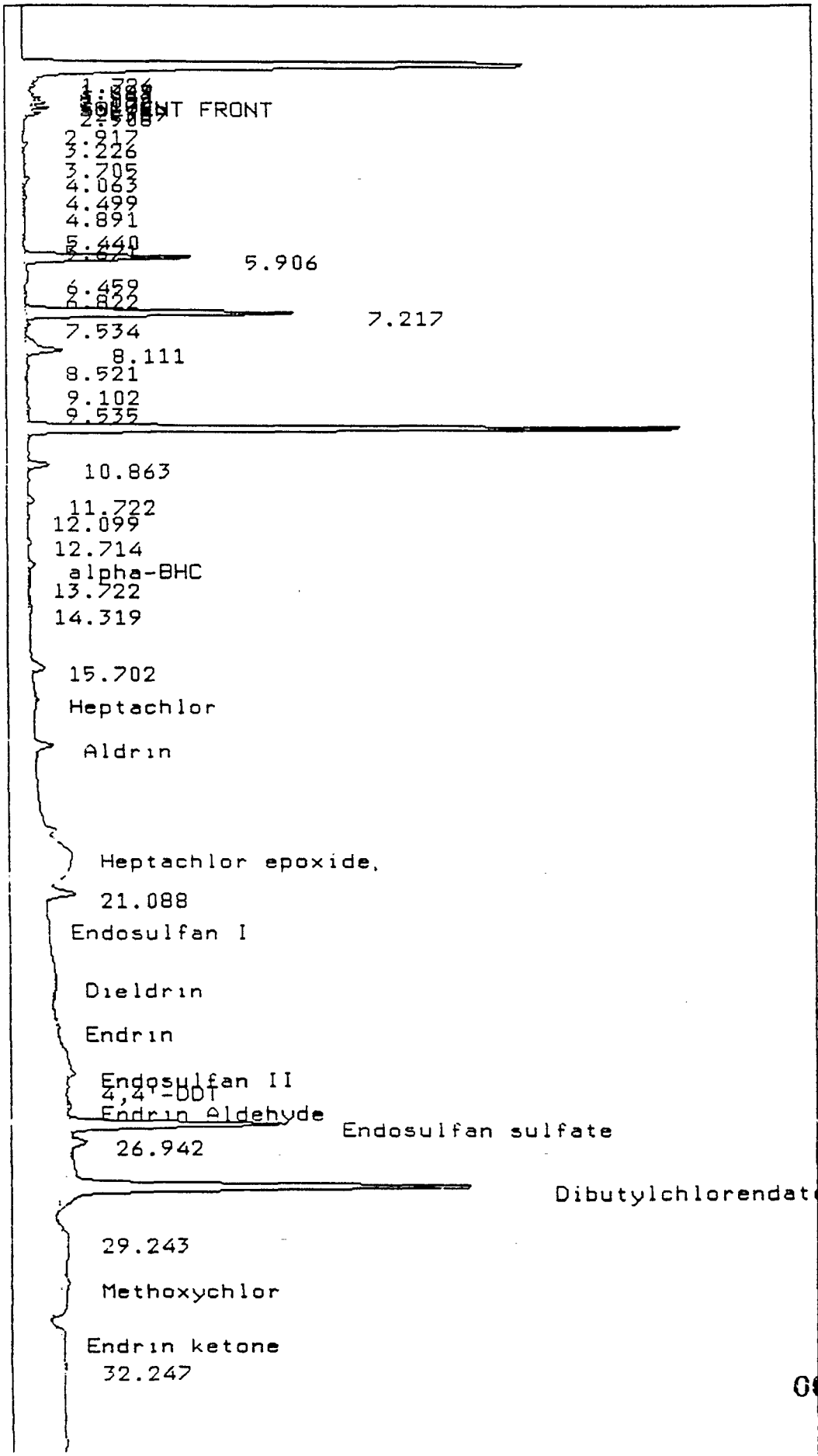
BCM LABORATORIES Report - GENIE Medium_Area Form

Sample Name : 106959 608TCL 800ML-10ML W680 Report No :227.00
MTH FOR CLP PESTS/PCBS ON ADC-13 Page 2

Pk#	RT	ID-tm	PeakWidth	Area	Code	AMOUNT	Name
17	6.46		.0867	12398B		0.0000E+00	
18	6.82		.1507	16678B		0.0000E+00	
19	7.22		.1380	299603BB		0.0000E+00	
20	7.53		.1198	3303BB		0.0000E+00	
21	8.11		.1796	50969BB		0.0000E+00	
22	8.52		.2323	3716BB		0.0000E+00	
23	9.10		.1474	1061BB		0.0000E+00	
24	9.53		.1421	2968BB		0.0000E+00	
25	9.99		.1202	743450BB		0.0000E+00	
26	10.86		.1303	222188B		0.0000E+00	
27	11.72		.1352	7836BB		0.0000E+00	
28	12.10		.1629	2237BB		0.0000E+00	
29	12.71		.1482	5722BB		0.0000E+00	
30	13.23	13.09	.1365	72188B		7.8557E-02	alpha-BHC
31	13.72		.1469	1306BB		0.0000E+00	
32	14.32		.2709	6558BB		0.0000E+00	
33	15.70		.1743	19717BB		0.0000E+00	
34	16.47	16.25	.1772	4928BB		3.7447E-02	Heptachlor
35	17.54	17.69	.1785	26810BB		2.6746E-01	Aldrin
36	20.17	20.08	.7635	122336BB		1.1239E+00	Heptachlor epoxide
37	21.09		.1465	28949BB		0.0000E+00	
38	21.85	21.58	.1607	1752BB		1.5392E-02	Endosulfan I
39	23.19	22.86	.4488	8326BB		8.7351E-02	Dieldrin
40	24.26	24.39	.1300	2496BB		3.5041E-02	Endrin
41	25.33	25.12	.4382	31450BB		3.3685E-01	Endosulfan II
42	25.64	25.95	.1325	1174BB		1.4602E-02	4,4'-DDT
43	26.12	26.46	.1834	6121BB		7.5794E-02	Endrin Aldehyde
44	26.50	26.52	.1641	280793BB		5.8770E+01	Endosulfan sulfate
45	26.94		.1464	18331BB		0.0000E+00	
46	28.00	#28.03	.1908	648039BB		7.5510E+00	Dibutylchlorendate
47	29.24		.4172	19501BB		0.0000E+00	
48	30.30	30.15	1.1167	55290BB		1.1050E+00	Methoxychlor
49	31.58	31.12	.5394	12301BB		1.1070E-01	Endrin ketone
50	32.25		.1859	3363BB		0.0000E+00	

Total Area : 2693309 Total AMOUNT : 69.609

Report Time : Sun Mar 17, 1991 8:52:19 am
Method : /DATA/EXTRACTS/METHOD/MTHCLP_031491_13.MTH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3.705
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4.499
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5.906
6.459
7.217
7.534
8.111
8.521
9.102
9.535
9.985
10.863
11.722
12.099
12.714
alpha-BHC
13.722
14.319
15.702
Heptachlor
Aldrin
Heptachlor epoxide,
21.088
Endosulfan I
Dieldrin
Endrin
Endosulfan II
4,4'-DDT
Endrin Aldehyde
Endosulfan sulfate
26.942
Dibutylchlorendate
29.243
Methoxychlor
Endrin ketone
32.247

AR307050

BCM

Section 3

Surrogate Recovery Form

2E

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (DBC) #	OTHER
01	MBlank	125	
02	SPK	142	
03	DUP	132	
04	MSPIKE	12	
05	106959	134	
06			
07			
08			
09			
10			
11			
12			
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29			
30			

ADVISORY QC LIMITS (24-154)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogates diluted out

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: BCM Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.:

Level: (low/med) low

	EPA SAMPLE NO.	S1 (DBC) #	OTHER
1	106960 MB	114	
2	106962 SPK	113	
3	106961 DUP	119	
4	M SPIKE	24	
5	106954	106	
6	106955	135	
7			
8			
9			
10			
11			
12			
13			
14			
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17			
18			
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22			
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24			
25			
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27			
28			
29			
30			

ADVISORY QC LIMITS (24-150)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

BCM

Section 4

Matrix Spike/Spike Duplicate Form

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: DI water

SPK

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	0.20	0.00	0.21	105	56-123
Heptachlor	0.20	0.00	0.18	90	40-131
Aldrin	0.20	0.00	0.20	100	40-120
Dieldrin	0.50	0.00	0.45	90	52-126
Endrin	0.50	0.00	0.94	188*	56-121
4,4'-DDT	0.50	0.00	0.46	92	38-127

DUP

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	0.20	0.20	100	5	15	56-123
Heptachlor	0.20	0.18	90	0	20	40-131
Aldrin	0.20	0.19	95	5	22	40-120
Dieldrin	0.50	0.43	86	5	18	52-126
Endrin	0.50	0.89	178*	6	21	56-121
4,4'-DDT	0.50	0.43	86	7	27	38-127

Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 2 out of 12 outside limits

COMMENTS: _____

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: 106954 Level: (low/med) low

106954MS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC. #	QC. LIMITS REC.
gamma-BHC (Lindane)	6.7	0.00	4.9	73	46-12
Heptachlor	6.7	0.00	5.8	86	35-13
Aldrin	6.7	0.00	5.0	75	34-13
Dieldrin	16.7	0.00	11.0	66	31-13
Endrin	16.7	0.00	23.9	143*	42-13
4,4'-DDT	16.7	0.00	13.0	78	23-13

106954 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	6.7	4.8	72	1	50	46-12
Heptachlor	6.7	5.6	84	2	31	35-13
Aldrin	6.7	5.2	78	3	43	34-13
Dieldrin	16.7	10.8	65	1	38	31-13
Endrin	16.7	24.0	144*	0	45	42-13
4,4'-DDT	16.7	12.7	76	2	50	23-13

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 2 out of 12 outside limits

COMMENTS: _____

BCM

Section 5

Method Blanks

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Lab Sample ID: M Blank Lab File ID: 0031527

Matrix: (soil/water) Water Level: (low/med) low

Date Extracted: 3-8-91 Extraction: (SepF/Cont/Sonc) Sep F

Date Analyzed (1): 3-16-91 Date Analyzed (2): 3-17-91

Time Analyzed (1): 12:21 Time Analyzed (2): 1:51

Instrument ID (2): ADC-14 Instrument ID (2): ADC-13

GC Column ID (1): 0.53mm GC Column ID (1): 0.53mm

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SPK		3-16-91	3-17-91
02	DUP		3-16-91	3-17-91
03	MSPIKE		3-16-91	3-17-91
04	106959		3-16-91	3-17-91
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

M. Blank

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: M. Blank

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 00315127

Level: (low/med) low Date Received: _____

% Moisture: not dec. 100% dec. _____ Date Extracted: 3-8-91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Lab Sample ID: 106960MB Lab File ID: 00315119

Matrix: (soil/water) Soil Level: (low/med) low

Date Extracted: 3-7-91 Extraction: (SepF/Cont/Sonc) Sonc

Date Analyzed (1): 3-16-91 Date Analyzed (2): 3-16-91

Time Analyzed (1): 4:08 Time Analyzed (2): 20:43

Instrument ID (2): ADC-14 Instrument ID (2): ADC-13

GC Column ID (1): 0.53mm GC Column ID (1): 0.53mm

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	106954MS	106962SPK	3-16-91	3-16-91
02	106954MSD	106961DUP	3-16-91	3-16-91
03	MSPIKE		3-16-91	3-16-91
04	106954		3-16-91	3-16-91
05	106955		3-16-91	3-17-91
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

106960

Lab Name: BCM LAB Contract: Occidental

Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) soil Lab Sample ID: 106960 MB

Sample wt/vol: 30 (g/mL) g Lab File ID: 0931S119

Level: (low/med) low Data Received: 3-5-91

% Moisture: not dec. 100 % dec. _____ Data Extracted: 3-7-91

Extraction: (SepF/Cont/Sonc) sonc Data Analyzed: 3-16-91

Florisil Clean up (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16.0	U
72-55-9	4,4'-DDE	16.0	U
72-20-8	Endrin	16.0	U
33213-65-9	Endosulfan II	16.0	U
72-54-8	4,4'-DDD	16.0	U
1031-07-8	Endosulfan sulfate	16.0	U
50-29-3	4,4'-DDT	16.0	U
72-43-5	Methoxychlor	80.0	U
53494-70-5	Endrin ketone	16.0	U
5103-71-9	alpha-Chlordane	80.0	U
5103-74-2	gamma-Chlordane	80.0	U
8001-35-2	Toxaphene	160.0	U
12674-11-2	Aroclor-1016	80.0	U
11104-28-2	Aroclor-1221	80.0	U
11141-16-5	Aroclor-1232	80.0	U
53469-21-9	Aroclor-1242	80.0	U
12672-29-6	Aroclor-1248	80.0	U
11097-69-1	Aroclor-1254	160.0	U
11096-82-5	Aroclor-1260	160.0	U

0000.0

BCM

Section 6

Internal Standards Summary Forms

8D
PESTICIDE EVALUATION STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-14 GC Column ID: 0.53 mm

Dates of Analyses: 3-15-91 to 3-18-91

Evaluation Check for Linearity

PESTICIDE	CALIBRATION FACTOR EVAL MIX A	CALIBRATION FACTOR EVAL MIX B	CALIBRATION FACTOR EVAL MIX C	%RSD (</= 10.0%)	
Aldrin	9435200	9246350	10238800	5.4	
Endrin	10623400	10214350	11058050	4.0	
4,4'-DDT	6913750	7078725	8044300	8.3	(1)
DBC	7337900	6901870	6840380	3.9	

(1) If > 10.0% RSD, plot a standard curve and determine the ng for each sample in that set from the curve.

Evaluation Check for 4,4'-DDT/Endrin Breakdown
(percent breakdown expressed as total degradation)

		DATE ANALYZED	TIME ANALYZED	ENDRIN	4,4'-DDT	COMBINED (2)
	INITIAL	3-15-91	17:10	3.2	0.4	1.6
01	EVAL MIX B	3-16-91	9:47	4.1	2.0	2.9
02	EVAL MIX B	3-16-91	17:28	1.8	5.3	3.9
03	EVAL MIX B					
04	EVAL MIX B					
05	EVAL MIX B					
06	EVAL MIX B					
07	EVAL MIX B					
08	EVAL MIX B					
09	EVAL MIX B					
10	EVAL MIX B					
11	EVAL MIX B					
12	EVAL MIX B					
13	EVAL MIX B					
14	EVAL MIX B					

(2) See Form instructions.

8D

PESTICIDE EVALUATION STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Accidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-13 GC Column ID: 0.53mm

Dates of Analyses: 3-16-91 to 3-18-91

Evaluation Check for Linearity

PESTICIDE	CALIBRATION FACTOR EVAL MIX A	CALIBRATION FACTOR EVAL MIX B	CALIBRATION FACTOR EVAL MIX C	%RSD (</= 10.0%)	
Aldrin	7466200	9832000	9043775	14	
Endrin	6581500	8694800	74227800	14	
4,4'-DDT	5164400	7436575	6941700	18	(1)
DBC	7884760	10179710	8486995	13	

(1) If > 10.0% RSD, plot a standard curve and determine the ng for each sample in that set from the curve.

Evaluation Check for 4,4'-DDT/Endrin Breakdown (percent breakdown expressed as total degradation)

		DATE ANALYZED	TIME ANALYZED	ENDRIN	4,4'-DDT	COMBINED (2)
	INITIAL	3-16-91	9:47	4.0	3.6	3.7
01	EVAL MIX B	3-16-91	23:17	3.9	4.4	4.2
02	EVAL MIX B	3-17-91	6:59	8.7	7.1	7.7
03	EVAL MIX B					
04	EVAL MIX B					
05	EVAL MIX B					
06	EVAL MIX B					
07	EVAL MIX B					
08	EVAL MIX B					
09	EVAL MIX B					
10	EVAL MIX B					
11	EVAL MIX B					
12	EVAL MIX B					
13	EVAL MIX B					
14	EVAL MIX B					

(2) See Form instructions.

8E

PESTICIDE EVALUATION STANDARDS SUMMARY

Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-14 GC Column ID: 0.53 mm

Dates of Analyses: 3-15-91 to 3-18-91

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	% D	*
01	EVALA		3-15-91	16:31	0.00	
02	EVALB		3-15-91	17:10	0.00	
03	EVALC		3-15-91	17:49	0.04	
04	INDA		3-15-91	18:27	0.00	
05	INDB		3-15-91	19:06	0.04	
06	Toxaphene		3-15-91	19:44	0.00	
07	AR1016		3-15-91	20:23	0.04	
08	AR1221		3-15-91	21:01	0.04	
09	AR1232		3-15-91	21:40	0.00	
10	AR1242		3-15-91	22:18	0.00	
11	AR1248		3-15-91	22:57	0.04	
12	AR1254		3-15-91	23:35	0.04	
13	AR1260		3-16-91	00:14	0.04	
14	Chlordane		3-16-91	00:52	0.04	
15	106960	106960MB	3-16-91	4:08	0.04	
16	106954MS	106962SPK	3-16-91	4:46	0.00	
17	106954MSD	106961DUP	3-16-91	5:25	0.00	
18	MSPIKE		3-16-91	9:08	0.13	
19	EVALB2		3-16-91	9:47	0.13	
20	106954		3-16-91	10:25	0.04	
21	106955		3-16-91	11:04	0.00	
22	MBIK	MBIK	3-16-91	12:21	0.04	
23	SPK	SPK	3-16-91	12:59	0.04	
24	INDA2		3-16-91	13:38	0.04	
25	DUP	DUP	3-16-91	14:16	0.04	
26	MSPIKE		3-16-91	14:55	0.04	
27	EVALB3		3-16-91	17:28	0.00	
28	106959		3-16-91	18:45	0.00	
29	INDA3		3-18-91	14:58	0.22	
30	INDB2		3-18-91	15:37	0.22	
31						
32						
33						
34						
35						
36						
37						
38						

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)

8E

PESTICIDE EVALUATION STANDARDS SUMMARY

Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-13 GC Column ID: 0.53 mm

Dates of Analyses: 3-16-91 to 3-18-91

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	% D	*
01	EVALA		3-16-91	4:08	0.00	
02	EVAL B		3-16-91	4:47	0.00	
03	EVALC		3-16-91	10:25	0.00	
04	INDA		3-16-91	11:04	0.00	
05	INDB		3-16-91	11:42	0.00	
06	Toxaphene		3-16-91	12:21	0.00	
07	AR1016		3-16-91	12:59	0.04	
08	AR1221		3-16-91	13:38	0.04	
09	AR1232		3-16-91	14:16	0.04	
10	AR1242		3-16-91	14:55	0.04	
11	AR1248		3-16-91	15:33	0.04	
12	AR1254		3-16-91	16:12	0.04	
13	AR1260		3-16-91	16:50	0.04	
14	Chlordane		3-16-91	17:28	0.04	
15	106960	106960MB	3-16-91	20:43	0.04	
16	106954MS	106962SPK	3-16-91	21:21	0.00	
17	106954MSD	106961DUP	3-16-91	22:00	0.00	
18	MSPIKE		3-16-91	22:38	0.04	
19	EVALB2		3-16-91	23:17	0.00	
20	106954		3-16-91	23:55	0.04	
21	106955		3-17-91	00:34	0.04	
22	MBLK	MBLK	3-17-91	1:51	0.04	
23	SPK	SPK	3-17-91	2:29	0.04	
24	INDA2		3-17-91	3:08	0.04	
25	DUP	DUP	3-17-91	3:46	0.07	
26	MSPIKE		3-17-91	4:25	0.04	
27	EVALB3		3-17-91	6:59	0.07	
28	106959		3-17-91	8:16	0.07	
29	INDA3		3-18-91	14:58	0.18	
30	INDB2		3-18-91	15:37	0.18	
31						
32						
33						
34						
35						
36						
37						
38						

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-14 GC Column ID: 0.53 mm

DATE(S) OF ANALYSIS FROM: _____ TO: _____

TIME(S) OF ANALYSIS FROM: _____ TO: _____

DATE OF ANALYSIS 3-16-91

TIME OF ANALYSIS 13:38

EPA SAMPLE NO. (STANDARD) INDA2

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	9.37	9.28	9.46	9429700				
beta-BHC	13.62	13.48	13.76	7210600				
delta-BHC	14.42	14.28	14.56	7308700				
gamma-BHC	10.80	10.69	10.91	7739300	10.80	7408806		4.2
Heptachlor	11.48	11.37	11.59	11188900	11.48	10981950		1.8
Aldrin	12.44	12.32	12.56	9159600	12.49	8989300		1.8
Hept. epoxide	14.88	14.73	15.03	10417150	14.88	10320300		1.0
Endosulfan I	15.80	15.64	15.96	10673750	15.99	10448700		2.1
Dieldrin	17.11	16.94	17.28	9019100	17.10	8759950		2.9
4,4'-DDE	16.64	16.47	16.81	7687350				
Endrin	17.78	17.60	17.96	8149150				
Endosulfan II	19.33	19.33	19.73	8015725	19.53	7379850		7.9
4,4'-DDD	19.43	19.24	19.62	6537050				
Endo. sulfate	22.06	21.84	22.28	2515050				
4,4'-DDT	19.98	19.78	20.18	6691150	19.98	6124125		8.5
Methoxychlor	22.15	21.93	22.37	2244440	22.15	1981845		12
Endrin ketone	23.37	23.14	23.50	9290200				
a. Chlordane	16.24	16.08	16.40	3497750				
g. Chlordane	16.06	15.96	16.22	3285550				
Toxaphene	20.27	20.07	20.47	625944				
Aroclor-1016	8.27	8.19	8.35	2033910				
Aroclor-1221	7.52	7.44	7.60	614380				
Aroclor-1232	11.22	11.11	11.33	1457490				
Aroclor-1242	12.45	12.33	12.57	2689830				
Aroclor-1248	14.70	14.55	14.85	2727372				
Aroclor-1254	16.86	16.70	17.03	2910790				
Aroclor-1260	19.36	19.17	19.55	4342444				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-14 GC Column ID: 0.53 mm

DATE(S) OF ANALYSIS FROM: _____ TO: _____
TIME(S) OF ANALYSIS FROM: _____ TO: _____
DATE OF ANALYSIS 3-18-91
TIME OF ANALYSIS 14:58
EPA SAMPLE NO. (STANDARD) INDA3

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	9.37	9.28	9.46	9429700				
beta-BHC	13.62	13.48	13.76	7210600				
delta-BHC	14.42	14.28	14.56	7308700				
gamma-BHC	10.80	10.69	10.91	7739300	10.85	5265800		32
Heptachlor	11.48	11.37	11.59	11188900	11.54	6968450		38
Aldrin	12.44	12.32	12.56	9159600	12.50	4702800		49
Hept. epoxide	14.88	14.73	15.03	10417150	14.94	6401650		38
Endosulfan I	15.80	15.64	15.96	10673750	15.86	5409600		49
Dieldrin	17.11	16.94	17.28	9019100	17.16	4528650		50
4,4'-DDE	16.64	16.47	16.81	7687350				
Endrin	17.78	17.60	17.96	8149150				
Endosulfan II	19.33	19.33	19.73	8015725	19.59	3422700		57
4,4'-DDD	19.43	19.24	19.62	6537050				
Endo. sulfate	22.06	21.84	22.28	25180S0				
4,4'-DDT	19.98	19.78	20.18	6691150	20.03	3135775		53
Methoxychlor	22.15	21.93	22.37	2244440	22.21	1185290		47
Endrin ketone	23.37	23.14	23.50	9290200				
a. Chlordane	16.24	16.08	16.40	3497750				
g. Chlordane	16.06	15.96	16.22	3285550				
Toxaphene	20.27	20.07	20.47	625944				
Aroclor-1016	8.27	8.19	8.35	2033910				
Aroclor-1221	7.52	7.44	7.60	614380				
Aroclor-1232	11.22	11.11	11.33	1457490				
Aroclor-1242	12.45	12.33	12.57	2689830				
Aroclor-1248	14.70	14.55	14.85	2727372				
Aroclor-1254	16.86	16.70	17.03	2910790				
Aroclor-1260	19.36	19.17	19.55	4342444				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-14 GC Column ID: 0.53 mm

DATE(S) OF ANALYSIS FROM: _____ TO: _____

TIME(S) OF ANALYSIS FROM: _____ TO: _____

DATE OF ANALYSIS 3-18-91

TIME OF ANALYSIS 15:37

EPA SAMPLE NO. (STANDARD) INDB2

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	9.37	9.28	9.46	9429700	9.34	9278200		1.6
beta-BHC	13.62	13.48	13.76	7210600	13.58	7560950		4.8
delta-BHC	14.42	14.28	14.56	7308700	14.38	7873500		7.7
gamma-BHC	10.80	10.69	10.91	7737300				
Heptachlor	11.48	11.37	11.59	11188900				
Aldrin	12.44	12.32	12.56	9159600	12.39	9632850		5.2
Hept. epoxide	14.88	14.73	15.03	10417150				
Endosulfan I	15.80	15.64	15.96	10673750				
Dieldrin	17.11	16.94	17.28	9019100				
4,4'-DDE	16.64	16.47	16.81	7687350	16.60	8039850		4.6
Endrin	17.78	17.60	17.96	8149150	17.74	8389500		2.9
Endosulfan II	19.53	19.33	19.73	8015725				
4,4'-DDD	19.43	19.24	19.62	6537050	19.39	6911675		2.7
Endo. sulfate	22.06	21.84	22.28	2518050	22.02	2744250		9.0
4,4'-DDT	19.98	19.78	20.18	6691150				
Methoxychlor	22.15	21.93	22.37	2244440				
Endrin ketone	23.37	23.14	23.50	9290200	23.32	9014475		3.0
a. Chlordane	16.24	16.08	16.40	3497750	16.20	3611450		3.2
g. Chlordane	16.06	15.90	16.22	3285550	16.02	2780 9300		17
Toxaphene	20.27	20.07	20.47	625944				
Aroclor-1016	8.27	8.19	8.35	2033910				
Aroclor-1221	7.52	7.44	7.60	614380				
Aroclor-1232	11.22	11.11	11.33	1457490				
Aroclor-1242	12.45	12.33	12.57	2689830				
Aroclor-1248	14.70	14.55	14.85	2727372				
Aroclor-1254	16.86	16.70	17.03	2910790				
Aroclor-1260	19.36	19.17	19.55	4342444				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-13 GC Column ID: 0.53mm

DATE(S) OF ANALYSIS FROM: 3-16-91 TO: 3-16-91
TIME(S) OF ANALYSIS FROM: 9:08 TO: 16:50
DATE OF ANALYSIS 3-17-91
TIME OF ANALYSIS 3:08
EPA SAMPLE NO. (STANDARD) INDA2

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	13.08	12.95	13.21	6522100				
beta-BHC	15.11	14.96	15.26	5906650				
delta-BHC	16.72	16.55	16.89	7094900				
gamma-BHC	14.83	14.68	14.98	6648500	14.82	5718200		14
Heptachlor	16.24	16.08	16.40	10335250	16.23	8913700		14
Aldrin	17.68	17.50	17.86	7879650	17.67	6737650		14
Hept. epoxide	20.07	19.87	20.27	8663450	20.06	7545700		13
Endosulfan I	21.56	21.34	21.78	9135550	21.55	7829250		14
Dieldrin	22.85	22.62	23.08	7450450	22.83	6442100		14
4,4'-DDE	22.42	22.20	22.64	7031000				
Endrin	24.38	24.14	24.62	5461150				
Endosulfan II	25.10	24.85	25.35	7377950	25.09	6320725		14
4,4'-DDD	24.70	24.45	24.95	5558425				
Endo. sulfate	26.95	26.68	27.22	9367800				
4,4'-DDT	25.94	25.68	26.20	5922500	25.93	4883400		17
Methoxychlor	30.13	29.83	30.43	3936005	30.11	3317245		16
Endrin ketone	31.10	30.79	31.41	9095173				
a. Chlordane	21.41	21.20	21.62	10288200				
g. Chlordane	20.74	20.53	20.95	10400750				
Toxaphene	24.80	24.65	25.05	902088				
Aroclor-1016	12.90	12.73	13.03	2194426				
Aroclor-1221	8.85	8.76	8.94	878890				
Aroclor-1232	14.73	14.58	14.88	1268654				
Aroclor-1242	16.28	16.12	16.44	2193028				
Aroclor-1248	20.09	19.89	20.29	1795224				
Aroclor-1254	23.11	22.88	23.34	2792404				
Aroclor-1260	25.93	25.67	26.19	2912372				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADG-13 GC Column ID: 0.53mm

DATE(S) OF ANALYSIS FROM: 3-16-91 TO: 3-16-91
TIME(S) OF ANALYSIS FROM: 9:08 TO: 16:50
DATE OF ANALYSIS 3-18-91
TIME OF ANALYSIS 14:58
EPA SAMPLE NO. (STANDARD) INDA3

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	13.08	12.95	13.21	6522100				
beta-BHC	15.11	14.96	15.26	5906650				
delta-BHC	16.72	16.55	16.89	7094900				
gamma-BHC	14.83	14.68	14.98	6648500	14.79	4196400		37
Heptachlor	16.24	16.08	16.40	10335250	16.20	6471400		37
Aldrin	17.68	17.50	17.86	7879650	17.64	4769550		40
Hept. epoxide	20.09	19.87	20.27	8663450	20.03	5246200		39
Endosulfan I	21.56	21.34	21.78	9135550	21.52	5306150		40
Dieldrin	22.85	22.62	23.08	7450450	22.80	4505350		40
4,4'-DDE	22.42	22.20	22.64	7031000				
Endrin	24.38	24.14	24.62	5461150				
Endosulfan II	25.10	24.85	25.35	7377950	25.06	4356025		41
4,4'-DDD	24.70	24.45	24.95	5558425				
Endo. sulfate	26.95	26.68	27.22	9367800				
4,4'-DDT	25.94	25.68	26.20	5922500	25.90	3446425		42
Methoxychlor	30.13	29.83	30.43	3936005	30.07	2367905		40
Endrin ketone	31.10	30.79	31.41	9095175				
a. Chlordane	21.41	21.20	21.62	16288200				
g. Chlordane	20.74	20.53	20.95	10400750				
Toxaphene	24.80	24.65	25.05	902088				
Aroclor-1016	12.90	12.73	13.03	2194426				
Aroclor-1221	8.85	8.76	8.94	878890				
Aroclor-1232	14.73	14.58	14.88	1268654				
Aroclor-1242	16.28	16.12	16.44	2193028				
Aroclor-1248	20.09	19.89	20.29	1795224				
Aroclor-1254	23.11	22.88	23.34	2792404				
Aroclor-1260	25.93	25.67	26.19	2912372				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: BCM Lab Contract: Occidental

Lab Code: BCM Case No.: 39222 SAS No.: _____ SDG No.: _____

Instrument ID: ADC-13 GC Column ID: 0.53mm

DATE(S) OF ANALYSIS FROM: 3-16-91 TO: 3-16-91

TIME(S) OF ANALYSIS FROM: 9:08 TO: 16:50

DATE OF ANALYSIS 3-18-91

TIME OF ANALYSIS 15:37

EPA SAMPLE NO. (STANDARD) INDB2

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	13.08	12.95	13.21	6522100	13.04	7253900		11
beta-BHC	15.11	14.96	15.26	5906650	15.07	5613200		5.0
delta-BHC	16.72	16.55	16.89	7094900	16.68	6962950		4.7
gamma-BHC	14.83	14.68	14.98	6648500				
Heptachlor	16.24	16.08	16.40	10335250				
Aldrin	17.68	17.50	17.86	7879650	17.63	9361050		19
Hept. epoxide	20.09	19.87	20.27	8663450				
Endosulfan I	21.56	21.34	21.78	9135550				
Dieldrin	22.85	22.62	23.08	7450450				
4,4'-DDE	22.42	22.20	22.64	7031000				
Endrin	24.38	24.14	24.62	5461150	24.33	5459100		.04
Endosulfan II	25.10	24.85	25.35	7377950				
4,4'-DDD	24.70	24.45	24.95	5558425	24.66	5436325		2.2
Endo. sulfate	26.95	26.68	27.22	9367800	26.90	8870750		5.3
4,4'-DDT	25.94	25.68	26.20	5922500				
Methoxychlor	30.13	29.83	30.43	3936005				
Endrin ketone	31.10	30.79	31.41	9095175	31.93	8525125		6.3
a. Chlordane	21.41	21.20	21.62	10288200	21.37	9748700		5.2
g. Chlordane	20.74	20.53	20.95	10400750	20.69	9571750		8.0
Toxaphene	24.80	24.65	25.05	902088				
Aroclor-1016	12.90	12.73	13.03	2194426				
Aroclor-1221	8.85	8.76	8.94	878890				
Aroclor-1232	14.73	14.58	14.88	1268654				
Aroclor-1242	16.28	16.12	16.44	2193028				
Aroclor-1248	20.09	19.89	20.29	1795224				
Aroclor-1254	23.11	22.88	23.34	2792404				
Aroclor-1260	25.93	25.67	26.19	2912372				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

TRILLIUM INC.

DATA VALIDATION REPORT FOR

OCCIDENTAL CHEMICAL CORPORATION

INORGANIC ANALYSIS DATA

Samples Collected:

3/4-5/91

Chemical Analyses Performed By

BCM

July 22, 1991

By

Trillium, Inc.
7A Grace's Drive
Coatesville, PA 19320

TRILLIUM INC.

EXECUTIVE SUMMARY

Arsenic and selenium results were qualified as biased low. The value for silver in the method blank was corrected to less than 5.0 ug/L. Results for barium, cadmium, calcium, chromium, iron, lead, magnesium, and vanadium were qualified estimated. All zinc results except LL5S-4 were qualified as less than the reported values. Copper results were rejected. Total organic carbon results were acceptable.

Validation of inorganic laboratory data is conducted in conformance with the checklist in SOP No. HW-2, (SOP Revision X), Feb 1990, "Evaluation of Metals Data for the Contract Laboratory Program (CLP)," based on SOW 7/88, Rev. 2/89 as modified by USEPA Region III. This checklist is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the USEPA's Contract Laboratory Program (CLP) and assumes that the data package is presented in accordance with the CLP requirements. In addition, the data package is assumed to represent the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation. As stated in the laboratory case narrative, the laboratory report was based on the 3/90 SOW, and, consequently, validation procedures were modified somewhat to accommodate the new guidelines.

Results of analyses are reported by the laboratory as either qualified or unqualified. Unqualified results mean that the reported values may be used without reservations. Qualified results indicate a non-routine (with respect to CLP procedures) situation occurred during the course of analysis. Various qualifier codes associated with the numerical results are used by the laboratory to denote specific information regarding the analytical results. During the process of validation, laboratory qualified and unqualified data are verified against supporting documentation. Based on the supporting documentation, qualifier codes may be added, deleted, or modified by the data validator. Final results are either qualified or unqualified. Unqualified results still mean that the reported values may be used without reservations. Validator qualified results are annotated with the codes shown the Glossary of Data Qualifier Codes (Inorganic) in accordance with the USEPA Region III guidelines.

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

U - Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) - Confirmed identification.

B - Not detected substantially above the level reported in laboratory or field blanks.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J - Analyte present. Reported value may not be accurate or precise.

K - Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L - Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] - Analyte present. As values approach the IDL, the quantitation may not be accurate.

UJ - Not detected, quantitation limit may be inaccurate or imprecise or imprecise.

UL - Not detected, quantitation limit is probably higher.

OTHER CODES

Q - No analytical result.

Samples validated in this report are noted below:

Client ID	Lab ID	Date of Collection
OXY-LL1S-4	106779	3/4/91
OXY-LL1S-6	106780	3/4/91
OXY-LL2S-4	106781	3/4/91
OXY-LL3S-4	106782	3/4/91
OXY-LL3S-4A	106783	3/4/91
OXY-LL3S-10	106784	3/4/91
FIELD BLANK	106786	3/4/91
METHOD BLANK	106787	
OXY-LL1S-4D	106788	3/4/91
OXY-LL1S-4S	106789	3/4/91
OXY-LL4S-4	106954	3/5/91
OXY-LL4S-9	106955	3/5/91
OXY-LL5S-4	106956	3/5/91
OXY-LL5S-10	106957	3/5/91
FIELD BLANK	106959	3/5/91

TRILLIUM INC.

Inorganic Data Validation

for

Occidental Chemical Corporation

Samples Collected:

3/4-5/91

Case Narrative

This group contained twelve soil samples, including one duplicate and one matrix spike, and three aqueous samples including a method blank and two field blanks. All samples were analyzed for total TAL metals and total organic carbon.

Samples validated in this report are noted below:

Client ID	Lab ID	Date of Collection
OXY-LL1S-4	106779	3/4/91
OXY-LL1S-6	106780	3/4/91
OXY-LL2S-4	106781	3/4/91
OXY-LL3S-4	106782	3/4/91
OXY-LL3S-4A	106783	3/4/91
OXY-LL3S-10	106784	3/4/91
FIELD BLANK	106786	3/4/91
METHOD BLANK	106787	
OXY-LL1S-4D	106788	3/4/91
OXY-LL1S-4S	106789	3/4/91
OXY-LL4S-4	106954	3/5/91
OXY-LL4S-9	106955	3/5/91
OXY-LL5S-4	106956	3/5/91
OXY-LL5S-10	106957	3/5/91
FIELD BLANK	106959	3/5/91

Laboratory identification numbers, instead of the client identification numbers, were used on the Cover Sheet as well as the Form I's.

The areas reviewed during validation are listed below.

CLP Inorganics Data Validation

I. Holding Times

II. Calibrations

III. Blanks

IV. ICP Interference Check Sample

V. Laboratory Control Sample

VI. Duplicate Analysis

VII. Matrix Spike

VIII. Method of Standard Additions

IX. Serial Dilution

X. Sample Verification

XI. Other QC

XII. Overall Assessment

I. Holding Times

All metals analyses were conducted within acceptable holding times.

II. Calibrations

Calibrations for metals were satisfactory.

III. Blanks

No metals calibration blanks had values above the CRDL's nor less than the negative CRDL's. However, some metals had responses above the IDL or less than the negative IDL. A CCB for silver was 8.9 ug/L (IDL = 5.0 ug/L). A CCB for vanadium at -15.4 ug/L was less than the negative IDL of 13.0 ug/L. These discrepancies had no effect on the data.

The preparation blank yielded a response for chromium (7.8 ug/L) above the IDL (6.0 ug/L) as well as responses less than the negative IDL for arsenic (-1.3 ug/L (IDL=1.2 ug/L)) and selenium (-0.85 ug/L (IDL=0.7 ug/L)). Chromium data were not qualified since reported results were considerably higher than the preparation blank value. Arsenic and selenium data were qualified as biased low.

The value of 5.0 ug/L for silver reported for the method blank was not supported by the raw data. The reported concentration for silver was corrected to a value of less than 5.0 ug/L.

One of the field blanks contained copper, iron, silver, and zinc while the other field blank contained copper, iron, manganese, and zinc. Since none of these metals were found in the method blank, contamination of the field blanks was assumed to have occurred in the field. Data for samples associated with specific field blanks were qualified as less than their reported values for concentrations that were less than five times the field blank value.

IV. ICP Interference Check Sample

Interference check sample results were satisfactory.

V. Laboratory Control Sample

Laboratory control sample results were satisfactory.

VI. Duplicate Analysis

Duplicate analyses for metals were out of acceptable limits for cadmium (26%), chromium (28%), iron (23%), lead (27%), and vanadium (41%). Results for cadmium, chromium, iron, lead, and vanadium were qualified estimated.

VII. Matrix Spike

Matrix spike recoveries were out of acceptable limits for lead (73%) and selenium (17%) but the post-digest spike recoveries were satisfactory. Lead results were not qualified. Selenium results were qualified as biased low.

VIII. Method of Standard Additions

No MSA analyses were conducted.

IX. Serial Dilution

Serial dilution results were out of acceptable limits for barium (16%), calcium (85%), chromium (19%), copper (>40,000%), and magnesium (15%). All barium, calcium, chromium, and magnesium results were qualified estimated; copper results were rejected.

X. Sample Verification

Calculations were performed correctly.

The value of 5.0 ug/L for silver reported for the method blank was not supported by the raw data. The concentration should be less than 5.0 ug/L.

XI. Other QC

CRDL standards were out of acceptable limits for copper (57%, 59%), silver (141%, 123%), and zinc (890%, 773%). No qualifications of data were made since data were already qualified due to other discrepancies.

Selenium analytical spike recoveries were out of acceptable limits for LL2S-4 (63%), LL3S-4A (52%), LL3S-10 (43%), LL4S-4 (75%), LL5S-10 (42%), and LL1S-6 (84%). The result for LL1S-6 was not qualified; other samples noted above were qualified as biased low..

XII. Overall Assessment

Data were considered valid with the following exceptions:

Selenium results were qualified as biased low due to poor analytical spike and matrix spike recoveries.

The value for silver in the method blank was corrected to less than 5.0 ug/L.

Results for cadmium, chromium, iron, lead, and vanadium were qualified estimated due to poor duplication.

All zinc results except LL5S-4 were qualified as less than the reported values due to field blank contamination.

Based on serial dilution results, all barium, calcium, chromium, and magnesium values were qualified estimated. Copper results were rejected.

Arsenic data were qualified as biased low based on preparation blank results.

Attachment A

DATA SUMMARY FORM: INORGANICS

Site Name: Pottstown

SOIL SAMPLES
(mg/Kg)

Case #: 39222 Sampling Date(s): 3/4-5/91

Revised March 11, 1992

Sample No.		LL1S-4		LL1S-6		LL2S-4		LL3S-4		LL3S-4A		LL3S-10		F BLANK		LL4S-4		LL4S-9		LL5S-4	
Dilution Factor																					
% Solids		89.3		85.4		88.8		72.2		76.4		79.1		0		73.2		84.2		70.6	
Location		106779		106780		106781		106782		106783		106784		106786		106954		106955		106956	
CRDL																					
40.0	Aluminum	13600		12000		27100		27900		27600		17600				24300		14900		18200	
12	Antimony																				
2	*Arsenic	4.3	L	4.8	L	3.1	L	3.8	L	1.6	L	5.9	L			1.4	L	5.0	L	11.1	L
40	Barium	73.0	J	64.8	J	98.6	J	221	J	228	J	139	J			179	J	114	J	112	J
1	Beryllium	0.66		0.62		0.98		2.0		1.9		0.6				1.9		1.1		1.9	
1	*Cadmium	9.9	J	9.2	J	13.0	J	13.4	J	11.0	J	6.0	J	3.0	U	9.8	J	9.3	J	9.6	J
1000	Calcium	884	J	780	J	968	J	2580	J	2160	J	2970	J			981	J	1240	J	1650	J
2	*Chromium	29.3	J	26.0	J	39.2	J	38.9	J	37.6	J	31.1	J	6.0	U	33.5	J	27.0	J	47.2	J
10	Cobalt	14.9		13.8		18.8		14.7		18.1		8.9				16.4		11.8		21.3	
5	Copper		R		R		R		R		R		R	8.1			R		R		R
20	Iron	32000	J	31000	J	39700	J	41600	J	33700	J	18100	J	16.9		25500	J	30700	J	26000	J
0.6	*Lead	21.6	J	15.2	J	20.0	J	24.5	J	19.5	J	10.7	J	24.0	U	18.9	J	16.5	J	86.3	J
1000	Magnesium	2280	J	2150	J	3260	J	3130	J	3170	J	2780	J			3290	J	2710	J	2330	J
3	Manganese	602		619		782		561		853		287				503		396		613	
0.2	Mercury							0.14								0.41				0.71	
8	*Nickel	19.0		18.5		26.6		25.1		26.4		21.3				26.6		25.0		28.1	
1000	Potassium	1530		1370		2620		1930		2110		944				1740		1210		1640	
1	Selenium	0.78	UL	0.82	UL	0.16	UL	0.97	UL	0.18	UL	0.18	UL	0.70	U	0.19	UL	0.83	UL	0.99	UJ
2	Silver													7.4							
1000	Sodium					101		160				333						[121]			
2	Thallium																				
10	Vanadium	40.3	J	45.5	J	43.2	J	33.0	J	32.7	J	11.7	J	13.0	U	28.9	J	21.9	J	23.3	J
4	Zinc	51.6	B	47.4	B	68.0	B	110	B	107	B	76.0	B	25.7		112	B	76.1	B	175	
2	*Cyanide	N/R		N/R		N/R		N/R		N/R		N/R		N/R		N/R		N/R		N/R	

*Action Level Exists

N/R = Not Requi

DATA SUMMARY FOR INORGANICS

SOIL SAMPLES
(mg/Kg)

Site Name: Pottstown

Case #: 39222 Sampling Date(s): 3/4-5/91

Sample No.		LL5S-10		F BLANK													
Dilution Factor																	
% Solids		81.4		0													
Location		106957		106959													
CRDL																	
40.0	Aluminum	16400															
12	Antimony																
2	*Arsenic	4.9	L														
40	Barium	135	J														
1	Beryllium	0.84															
1	*Cadmium	8	J	3.0	U												
1000	Calcium	1150	J														
2	*Chromium	25.4	J	6	U												
10	Cobalt	11.5															
5	Copper		R	8.8													
20	Iron	22200	J	180													
0.6	*Lead	12.8	J	24.0	U												
1000	Magnesium	3350	J														
3	Manganese	400		2.5													
0.2	Mercury																
8	*Nickel	21.3															
1000	Potassium	1370															
1	Selenium	0.17	UL	0.7	U												
2	Silver																
1000	Sodium																
2	Thallium																
10	Vanadium	23.7	J	13	U												
4	Zinc	78.1	B	30.4													
2	*Cyanide	N/R		N/R													

*Action Level Exists

N/R = Not Required

Attachment B

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

106780

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Lab Sample ID: 106780MG/K

Level (low/med): LOW Date Received: 03/04/91

% Solids: 85.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12000			P
7440-36-0	Antimony	6.3	U		P
7440-38-2	Arsenic	4.8			F
7440-39-3	Barium	64.8			P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	9.2		*	P
7440-70-2	Calcium	780	B		P
7440-47-3	Chromium	26.0		*	P
7440-48-4	Cobalt	13.8			P
7440-50-8	Copper	14.0			P
7439-89-6	Iron	31000		*	P
7439-92-1	Lead	15.2		N*	P
7439-95-4	Magnesium	2150			P
7439-96-5	Manganese	619			P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	18.5			P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	0.82	U	NW	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	100	U		P
7440-28-0	Thallium	0.26	U		F
7440-62-2	Vanadium	45.5		*	P
7440-66-6	Zinc	47.4			P
	Cyanide				

Color Before: TAN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

000008

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

10678

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Lab Sample ID: 106786FB-

Level (low/med): LOW Date Received: 03/04/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	48.0	U		P
7440-36-0	Antimony	27.0	U		P
7440-38-2	Arsenic	1.2	U		F
7440-39-3	Barium	19.0	U		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	3.0	U	*	P
7440-70-2	Calcium	839	U		P
7440-47-3	Chromium	6.0	U	*	P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	8.1	B		P
7439-89-6	Iron	16.9	B	*	P
7439-92-1	Lead	24.0	U	N*	P
7439-95-4	Magnesium	609	U		P
7439-96-5	Manganese	0.90	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	696	U		P
7782-49-2	Selenium	0.70	U	N	F
7440-22-4	Silver	7.4	B		P
7440-23-5	Sodium	428	U		P
7440-28-0	Thallium	1.1	U		F
7440-62-2	Vanadium	13.0	U	*	P
7440-66-6	Zinc	25.7			P
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Attachment C

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

SOW No.: 3/90

Sample No.	Lab Sample ID.
106779	106779MG/K
106779D	106788MG/K
106779S	106789MG/K
106780	106780MG/K
106781	106781MG/K
106782	106782MG/K
106783	106783MG/K
106784	106784MG/K
106786	106786FB-
106787	106787MB-
106954	106954MG/K
106955	106955MG/K
106956	106956MG/K
106957	106957MG/K
106959	106959FB-

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes, were raw data generated before application of background corrections? Yes/No YES

Comments:

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

106780

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Lab Sample ID: 106780MG/K

Level (low/med): LOW Date Received: 03/04/91

% Solids: 85.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12000			P
7440-36-0	Antimony	6.3	U		P
7440-38-2	Arsenic	4.8			F
7440-39-3	Barium	64.8			P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	9.2		*	P
7440-70-2	Calcium	780	B		P
7440-47-3	Chromium	26.0		*	P
7440-48-4	Cobalt	13.8			P
7440-50-8	Copper	14.0			P
7439-89-6	Iron	31000		*	P
7439-92-1	Lead	15.2		N*	P
7439-95-4	Magnesium	2150			P
7439-96-5	Manganese	619			P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	18.5			P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	0.82	U	NW	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	100	U		P
7440-28-0	Thallium	0.26	U		F
7440-62-2	Vanadium	45.5		*	P
7440-66-6	Zinc	47.4			P
	Cyanide				

Color Before: TAN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

000008

AR307091

FORM I - IN

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

106786

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Lab Sample ID: 106786FB-

Level (low/med): LOW Date Received: 03/04/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	48.0	U		P
7440-36-0	Antimony	27.0	U		P
7440-38-2	Arsenic	1.2	U		F
7440-39-3	Barium	19.0	U		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	3.0	U	*	P
7440-70-2	Calcium	839	U		P
7440-47-3	Chromium	6.0	U	*	P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	8.1	B		P
7439-89-6	Iron	16.9	B	*	P
7439-92-1	Lead	24.0	U	N*	P
7439-95-4	Magnesium	609	U		P
7439-96-5	Manganese	0.90	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	696	U		P
7782-49-2	Selenium	0.70	U	N	F
7440-22-4	Silver	7.4	B		P
7440-23-5	Sodium	428	U		P
7440-28-0	Thallium	1.1	U		F
7440-62-2	Vanadium	13.0	U	*	P
7440-66-6	Zinc	25.7			P
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	10135.00	101.4	10000.0	9780.80	97.8	9803.30	98.0	P
Antimony	3000.0	3092.70	103.1	3000.0	3011.50	100.4	2885.20	96.2	P
Arsenic	18.1	16.70	92.3	18.1	17.75	98.1	18.20	100.6	F
Barium	10000.0	9888.00	98.9	10000.0	9566.60	95.7	9428.10	94.3	P
Beryllium	250.0	252.90	101.2	250.0	243.40	97.4	247.00	98.8	
Cadmium	2500.0	2499.70	100.0	2500.0	2429.90	97.2	2403.80	96.2	
Calcium	25000.0	24771.00	99.1	25000.0	23939.00	95.8	24220.00	96.9	P
Chromium	1000.0	1034.00	103.4	1000.0	997.80	99.8	1010.10	101.0	P
Cobalt	2500.0	2575.90	103.0	2500.0	2500.60	100.0	2481.10	99.2	P
Copper	1250.0	1176.50	94.1	1250.0	1152.40	92.2	1145.50	91.6	P
Iron	5000.0	5063.60	101.3	5000.0	4915.40	98.3	4934.50	98.7	P
Lead	2250.0	2309.10	102.6	2250.0	2268.50	100.8	2196.50	97.6	P
Magnesium	25000.0	24761.00	99.0	25000.0	23992.00	96.0	23968.00	95.9	P
Manganese	2250.0	2350.40	104.5	2250.0	2319.60	103.1	2297.30	102.1	P
Mercury	4.0	3.80	95.0	4.0	3.90	97.5	3.90	97.5	CV
Nickel	2500.0	2582.00	103.3	2500.0	2472.10	98.9	2442.70	97.7	P
Potassium	25000.0	26018.00	104.1	25000.0	25126.00	100.5	25467.00	101.9	P
Selenium	32.5	31.90	98.2	32.5	29.95	92.2	31.90	98.2	F
Silver	250.0	260.60	104.2	250.0	249.60	99.8	266.90	106.8	P
Sodium	25000.0	22588.00	90.4	25000.0	23080.00	92.3	23373.00	93.5	P
Thallium	38.3	36.85	96.2	38.3	39.85	104.0	39.70	103.7	F
Vanadium	2500.0	2536.10	101.4	2500.0	2447.80	97.9	2450.00	98.0	P
Zinc	2500.0	2593.50	103.7	2500.0	2496.40	99.9	2525.50	101.0	P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-11

ENVIROFORMS/INORGANIC CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	9880.40	98.8	9938.60	99.4	P
Antimony				3000.0	2952.50	98.4	2892.70	96.4	P
Arsenic				18.1	19.15	105.8	18.20	100.6	F
Barium				10000.0	9146.40	91.5	10137.00	101.4	P
Beryllium				250.0	247.80	99.1	256.50	102.6	P
Cadmium				2500.0	2384.80	95.4	2493.80	99.8	P
Calcium				25000.0	24660.00	98.6	24684.00	98.7	P
Chromium				1000.0	1028.10	102.8	1019.20	101.9	P
Cobalt				2500.0	2440.30	97.6	2601.30	104.1	P
Copper				1250.0	1145.10	91.6	1145.60	91.6	P
Iron				5000.0	4960.30	99.2	5030.10	100.6	P
Lead				2250.0	2193.00	97.5	2192.10	97.4	P
Magnesium				25000.0	23884.00	95.5	24539.00	98.2	P
Manganese				2250.0	2336.30	103.8	2277.80	101.2	P
Mercury				4.0	3.40	85.0	4.20	105.0	CV
Nickel				2500.0	2402.30	96.1	2598.70	103.9	P
Potassium				25000.0	26350.00	105.4	24509.00	98.0	P
Selenium				32.5	33.60	103.4	34.40	105.8	F
Silver				250.0	264.70	105.9	264.30	105.7	P
Sodium				25000.0	23256.00	93.0			P
Thallium				38.3	39.15	102.2	40.50	105.7	F
Vanadium				2500.0	2474.80	99.0	2508.40	100.3	P
Zinc				2500.0	2581.00	103.2	2554.10	102.2	P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				38.3	40.00	104.4			F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-11

ENVIROFORMS/INORGANIC CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium	32.5	33.30	102.5	32.5	29.55	90.9	31.30	96.3	F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				32.5	30.95	95.2			F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

	CRDL Standard for AA			CRDL Standard for ICP				
					Initial			Found
Analyte	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0	380.10	95.0	419.50	104.9
Antimony				120.0	113.20	94.3	139.50	116.2
Arsenic	10.0	9.15	91.5					
Barium				400.0	379.40	94.8	419.10	104.8
Beryllium				10.0	9.20	92.0	10.00	100.0
Cadmium				10.0	9.80	98.0	9.30	93.0
Calcium				10000.0	10637.00	106.4	10823.00	108.2
Chromium				20.0	23.00	115.0	19.20	96.0
Cobalt				100.0	99.30	99.3	106.90	106.9
Copper				50.0	28.40	56.8	29.70	59.4
Iron				200.0	164.60	82.3	206.00	103.0
Lead				100.0	94.40	94.4	114.00	114.0
Magnesium				10000.0	10673.00	106.7	10889.00	108.9
Manganese				30.0	28.10	93.7	27.80	92.7
Mercury	0.2	0.20	100.0					
Nickel				80.0	82.50	103.1	84.40	105.5
Potassium				10000.0	11358.00	113.6	10363.00	103.6
Selenium	5.0	5.80	116.0					
Silver				20.0	28.10	140.5	24.50	122.5
Sodium				10000.0	9152.30	91.5	9009.90	90.1
Thallium	10.0	9.50	95.0					
Vanadium				100.0	85.20	85.2	100.80	100.8
Zinc				40.0	35.60	89.0	30.90	77.2

REVISED DATA
RESUBMITTED BY LABORATORY

INSERTED BY DLM (SIGNATURE) 7/25 (DATE)

000026

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found	%R
Aluminum				400.0	380.10	95.0	419.50	104.9
Antimony				120.0	113.20	94.3	139.50	116.2
Arsenic	10.0	9.15	91.5					
Barium				400.0	379.40	94.8	419.10	104.8
Beryllium				10.0	9.20	92.0	10.00	10[illegible]
Cadmium				10.0	9.80	98.0	9.30	9[illegible]
Calcium				10000.0	10637.00	106.4	10823.00	108.2
Chromium				20.0	23.00	115.0	19.20	96.0
Cobalt				100.0	99.30	99.3	106.90	106.9
Copper				50.0	28.40	56.8	29.70	59.4
Iron				200.0	164.60	82.3	206.00	103.0
Lead				100.0	94.40	94.4	114.00	114.0
Magnesium				10000.0	10673.00	106.7	10889.00	108.9
Manganese				30.0	28.10	93.7	27.80	92.7
Mercury	0.2	0.20	100.0					
Nickel				80.0	82.50	103.1	84.40	105.5
Potassium				10000.0	11358.00	113.6	10363.00	103.6
Selenium	5.0	5.80	116.0					
Silver				20.0	28.10	140.5	24.50	122.5
Sodium				10000.0	9152.30	91.5	9009.90	90.1
Thallium	20.0	9.50	47.5					
Vanadium				100.0	85.20	85.2	100.80	100.8
Zinc				4.0	35.60	890.0	30.90	772.5

DATA VOID
DAM 7/25/91
SIGNATURE DATE

000028 AR307099

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.30	106.0					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	48.0	U	48.0	U	48.0	U	48.0	U	48.000	U	P
Antimony	27.0	U	27.0	U	27.0	U	27.0	U	27.000	U	P
Arsenic	1.2	U	-1.5	B	-2.1	B	1.2	U	-1.300	B	F
Barium	19.0	U	19.0	U	19.0	U	19.0	U	19.000	U	P
Beryllium	-0.5	B	0.4	U	0.4	U	0.4	U	0.400	U	
Cadmium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	
Calcium	839.0	U	839.0	U	839.0	U	839.0	U	839.000	U	P
Chromium	6.0	U	6.0	U	6.0	U	6.0	U	7.800	B	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Copper	-3.1	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Iron	-46.6	B	11.0	U	11.0	U	11.0	U	11.000	U	P
Lead	24.0	U	24.0	U	24.0	U	24.0	U	24.000	U	P
Magnesium	609.0	U	609.0	U	609.0	U	609.0	U	609.000	U	P
Manganese	-1.7	B	0.9	U	0.9	U	0.9	U	0.900	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Potassium	696.0	U	696.0	U	696.0	U	696.0	U	696.000	U	P
Selenium	0.7	U	-0.7	B	0.7	U	-1.2	B	-0.850	B	F
Silver	5.0	U	5.0	U	8.9	B	5.0	U	5.000	U	P
Sodium	428.0	U	428.0	U	428.0	U	428.0	U	428.000	U	P
Thallium	1.1	U	1.1	U	1.1	U	1.1	U	1.100	U	F
Vanadium	13.0	U	13.0	U	13.0	U	-15.4	B	13.000	U	P
Zinc	6.0	U	6.0	U	6.0	U	6.0	U	6.000	U	P
Cyanide											

3
BLANKS

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			48.0	U							P
Antimony			27.0	U							P
Arsenic			-1.2	B							F
Barium			19.0	U							P
Beryllium			0.4	U							P
Cadmium			3.0	U							P
Calcium			839.0	U							P
Chromium			6.0	U							P
Cobalt			10.0	U							P
Copper			3.0	U							P
Iron			11.0	U							P
Lead			24.0	U							P
Magnesium			609.0	U							P
Manganese			0.9	U							P
Mercury			0.1	U							CV
Nickel			10.0	U							P
Potassium			696.0	U							P
Selenium			-1.2	B							F
Silver			5.0	U							P
Sodium											
Thallium			1.1	U	1.1	U					F
Vanadium			13.0	U							P
Zinc			6.0	U							P
Cyanide											

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium	0.7	U	0.7	U	-1.2	B	0.7	U			F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/INORGANIC CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: JY50 ICS Source: IV

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	479270	465660.0	93.1	458400	466230.0	93.2
Antimony			-17	-36.9		8	-35.8	
Arsenic								
Barium		500	19	439.7	87.9	19	490.5	98.1
Beryllium		500	0	443.2	88.6	1	476.1	95.2
Cadmium		1000	62	956.6	95.7	65	1018.6	101.9
Calcium	500000	500000	477810	462910.0	92.6	456460	469080.0	93.8
Chromium		500	77	467.4	93.5	79	468.8	93.8
Cobalt		500	4	417.8	83.6	-2	445.6	89.1
Copper		500	-5	425.9	85.2	-5	424.3	84.9
Iron	200	200	178550	176140.0	*****	169520	178870.0	*****
Lead		1000	-16	806.1	80.6	-10	840.0	84.0
Magnesium	500	500	463560	466930.0	*****	438910	472140.0	*****
Manganese		500	33	452.1	90.4	32	442.3	88.5
Mercury								
Nickel		1000	9	844.2	84.4	-1	902.8	90.3
Potassium			-338	-328.1		34	-129.4	
Selenium								
Silver		1000	4	1057.4	105.7	1	1049.7	105.0
Sodium			458	193.8		408	162.5	
Thallium								
Vanadium		500	-7	459.0	91.8	-16	478.3	95.7
Zinc		1000	31	918.4	91.8	31	913.4	91.3

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AR307104

ENVIROFORMS/INORGANIC CLP

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.
106779S

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 89.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	85.7850		6.0470	U	111.98	76.6		P
Arsenic	75-125	12.2396		4.2889		8.96	88.7		F
Barium	75-125	436.8869		72.9630		447.93	81.2		P
Beryllium	75-125	10.0461		0.6619	B	11.20	83.8		P
Cadmium	75-125	21.5901		9.8971		11.20	104.4		P
Calcium									NR
Chromium	75-125	75.5767		29.3404		44.79	103.2		P
Cobalt	75-125	108.7200		14.9149		111.98	83.8		P
Copper	75-125	59.0336		15.0616		55.99	78.5		[redacted]
Iron									[redacted]
Lead	75-125	103.6338		21.5812		111.98	73.3	N	P
Magnesium									NR
Manganese		724.8824		602.4412		111.98	109.3		P
Mercury	75-125	0.8959		0.0560	U	1.12	80.0		CV
Nickel	75-125	114.4905		18.9810		111.98	85.3		P
Potassium									NR
Selenium	75-125	0.3695	B	0.7839	U	2.24	16.5	N	F
Silver	75-125	11.9843		1.1198	U	11.20	107.0		P
Sodium									NR
Thallium	75-125	10.6383		0.2464	U	11.20	95.0		F
Vanadium	75-125	144.8936		40.2587		111.98	93.4		P
Zinc	75-125	158.0067		51.5789		111.98	95.0		P
Cyanide									NR

Comments:

ENVIROFORMS/INORGANIC CLP

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

106779A

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead		482.94		96.36		500.0	77.3		P
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium		9.60		-0.70	B	10.0	103.0		F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

ENVIROFORMS/INORGANIC CLP

6
DUPLICATES

SAMPLE NO.
106779D

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 89.3 % Solids for Duplicate: 89.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		13613.6610		16356.1030		18.3		P
Antimony		6.0470	U	7.0652	B	200.0		P
Arsenic	2.2	4.2889		3.9866		7.3		F
Barium	44.8	72.9630		75.9955		4.1		P
Beryllium		0.6619	B	0.8741	B	27.6		P
Cadmium		9.8971		12.9003		26.3	*	P
Calcium		883.6282	B	1063.8298	B	18.5		P
Chromium		29.3404		38.9384		28.1	*	
Cobalt	11.2	14.9149		15.7951		5.7		
Copper	5.6	15.0616		16.7514		10.6		P
Iron		32004.4790		40255.3190		22.8	*	P
Lead		21.5812		28.4211		27.4	*	P
Magnesium	1119.8	2280.1792		2809.9664		20.8		P
Manganese		602.4412		664.4009		9.8		P
Mercury		0.0560	U	0.0560	U			CV
Nickel	9.0	18.9810		20.4289		7.3		P
Potassium	1119.8	1525.5319		1842.1053		18.8		P
Selenium		0.7839	U	0.7839	U			F
Silver		1.1198	U	1.3328	B	200.0		P
Sodium		95.8567	U	95.8567	U			P
Thallium		0.2464	U	0.2464	U			F
Vanadium	11.2	40.2587		61.1747		41.2	*	P
Zinc		51.5789		62.4110		19.0		P
Cyanide								

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ENVIROFORMS/INORGANIC CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

Solid LCS Source: ERA

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				11000.0	8831.0		2000.0	35000.0	80.3
Antimony				40.0	40.5		16.0	64.0	101.2
Arsenic				170.0	160.0		68.0	272.0	94.1
Barium				98.0	98.1		39.0	157.0	100.1
Beryllium				22.0	20.3		10.0	35.0	92.3
Cadmium				129.0	106.3		51.0	206.0	82.4
Calcium				2900.0	1997.5		1100.0	4600.0	68.9
Chromium				307.0	214.7		123.0	491.0	69.9
Cobalt				88.0	102.4		35.0	140.0	116.4
Copper				298.0	191.1		119.0	475.0	64.1
Iron				23400.0	19419.0		18300.0	28000.0	83.0
Lead				41.0	40.6		16.0	66.0	99.0
Magnesium				4500.0	4027.9		1800.0	7200.0	89.5
Manganese				165.0	99.1		66.0	264.0	60.1
Mercury				32.0	15.0		13.0	51.0	46.9
Nickel				286.0	200.6		114.0	458.0	70.1
Potassium				1750.0	2081.5		700.0	2800.0	118.9
Selenium				40.0	38.0		16.0	64.0	95.0
Silver				23.0	23.1		9.2	37.0	100.4
Sodium				110.0	94.8	B	44.0	176.0	86.2
Thallium				29.0	15.5		12.0	46.0	53.4
Vanadium				40.0	33.9		16.0	64.0	84.8
Zinc				420.0	412.3		168.0	672.0	98.2
Cyanide									

ENVIROFORMS/INORGANIC CLP

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: JY50 Date: 03/21/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.07		200.0	48.0	P
Antimony	206.83		60.0	27.0	P
Arsenic			10.0		
Barium	233.53		200.0	19.0	P
Beryllium	313.04		5.0	0.4	P
Cadmium	226.50		5.0	3.0	P
Calcium	317.93		5000.0	839.0	P
Chromium	267.72		10.0	6.0	P
Cobalt	228.62		50.0	10.0	P
Copper	324.75		25.0	3.0	P
Iron	259.94		100.0	11.0	P
Lead	220.35		3.0	24.0	P
Magnesium	279.08		5000.0	609.0	P
Manganese	257.61		15.0	0.9	P
Mercury			0.2		
Nickel	231.60		40.0	10.0	P
Potassium	766.49		5000.0	696.0	P
Selenium			5.0		
Silver	328.07		10.0	5.0	P
Sodium	589.59		5000.0	428.0	P
Thallium			10.0		
Vanadium	310.23		50.0	13.0	P
Zinc	231.86		20.0	6.0	P

Comments:

ENVIROFORMS/INORGANIC CLP

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: Date: 01/14/91

Flame AA ID Number:

Furnace AA ID Number: 2100

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BD	3.0	0.7	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		

Comments:

ENVIROFORMS/INORGANIC CLP

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: Date: 03/20/91

Flame AA ID Number:

Furnace AA ID Number: 5100

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony	217.60	BZ	60.0	5.0	F
Arsenic	193.70	BZ	10.0	1.2	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	0.3	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BZ	5.0	0.7	F
Silver			10.0		
Sodium			5000.0		
Thallium	276.80	BZ	10.0	1.1	F
Vanadium			50.0		
Zinc			20.0		

Comments:

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ENVIROFORMS/INORGANIC CLP

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: Date: 03/11/91

Flame AA ID Number: 2380

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		0.2	0.1	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		

Comments:

ENVIROFORMS/INORGANIC CLP

11A

ICP INTERELEMENT CORRECTION FACTORS (Annually)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: JY50 Date: 01/02/91

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	CU
Aluminum	308.22					
Antimony	206.83					
Arsenic						
Barium	233.53					
Beryllium	313.04					
Cadmium	226.50					
Calcium	317.93					
Chromium	267.72					
Cobalt	228.62					
Copper	324.75	0.0033000				
Iron	259.94					
Lead	220.35	0.0005500				
Magnesium	279.08					
Manganese	257.61					
Mercury						
Nickel	231.60					
Potassium	766.49					
Selenium						
Silver	328.07					
Sodium	589.59					
Thallium						
Vanadium	310.23					
Zinc	213.86					0.0100000

Comment:

ENVIROFORMS/INORGANIC CLP

11B

ICP INTERELEMENT CORRECTION FACTORS (Annually)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: JY50 Date: 01/02/91

Analyte	Wave-length (nm)	Interelement Correction Factors for: CR	V	NI		
Aluminum	308.22		0.0252000			
Antimony	206.83	0.0080000				
Arsenic						
Barium	233.53					
Beryllium	313.04		0.0010400			
Cadmium	226.50					
Calcium	317.93					
Chromium	267.72					
Cobalt	228.62	0.0006000				
Copper	324.75					
Iron	259.94					
Lead	220.35					
Magnesium	279.08					
Manganese	257.61					
Mercury						
Nickel	231.60					
Potassium	766.49					
Selenium						
Silver	328.07					
Sodium	589.59					
Thallium						
Vanadium	310.23					
Zinc	213.86			0		

Comment:

ENVIROFORMS/INORGANIC CLP

12

ICP LINEAR RANGE (QUARTERLY)

Lab Name: BCM LABORATORY DIVISION Contract: OXYCHEM

Lab Code: BCM Case No.: 39222 SAS No.: SDG No.: A39222

ICP ID Number: JY50 Date: 01/04/91

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	5.00	198000.0	P
Antimony	5.00	61800.0	P
Arsenic			
Barium	5.00	189000.0	P
Beryllium	5.00	50200.0	P
Cadmium	5.00	20000.0	P
Calcium	5.00	240000.0	P
Chromium	5.00	50700.0	P
Cobalt	5.00	20300.0	P
Copper	5.00	47700.0	P
Iron	5.00	101000.0	P
Lead	5.00	48000.0	P
Magnesium	5.00	243000.0	P
Manganese	5.00	48500.0	P
Mercury			
Nickel	5.00	20600.0	P
Potassium	5.00	523000.0	P
Selenium			
Silver	5.00	4920.0	
Sodium	5.00	492000.0	P
Thallium			
Vanadium	5.00	51200.0	P
Zinc	5.00	50200.0	P

Comment:

		49.744	0.0000	9.7320	40.012	39.661 PPM
$Be	313.042	2.3160	1.3360	0.0000	0.98000	0.56674 PPM
		2.2960	1.3400	0.0000	0.95600	0.52058 PPM
		2.2960	1.3540	0.0000	0.94200	0.49365 PPM
$Ca	317.933	43.590	0.0000	0.0000	43.590	662.30 PPM
		43.928	0.0000	0.0000	43.928	668.17 PPM
		43.838	0.0000	0.0000	43.838	666.61 PPM
$Cu	324.754	3.4140	2.0080	0.0000	1.4060	11.972 PPM
		3.4280	2.0080	0.0000	1.4200	12.104 PPM
		3.3980	2.0200	0.0000	1.3780	11.709 PPM
$Ag	328.068	8.1420	0.0000	0.0000	8.1420	-0.45365 PPM
		8.2380	0.0000	0.0000	8.2380	-0.14696 PPM
		8.1500	0.0000	0.0000	8.1500	-0.42810 PPM
$K	766.490	11.896	7.1780	0.0000	4.7180	1143.0 PPM
		11.972	7.1940	0.0000	4.7780	1161.1 PPM
		12.058	7.1520	0.0000	4.9060	1199.8 PPM

----- 11:10:47 3/22/91 ----- Method: CLP WITHOUT RATIO

Sample 106780MG/KG- - 1 #MEAS.= 3 for Seq., #MEAS.= or Simul.

EL	CONC/	sigma	EL	CONC/	sigma	EL	CONC/	sigma	EL	CONC/	sigma
	<5.4			40.4			13.0			7.83	
$Sb	-2.0904/	160%	$Zn	40.439/	2.7%	$Pb	13.007/	40%	$Cd	7.8324/	7.7%
	11.8			15.8			55.4			529	
$Co	11.762/	4.0%	$Ni	15.830/	7.1%	$Ba	55.350/	0.22%	$Mn	528.80/	0.72%
	OVER CAL			22.2			1640			10,300	
~~$Fe~~	23596/	0.53%	$Cr	22.246/	1.6%	$Mg	1837.8/	0.62%	$Al	10280/	0.78%
	38.9			527			666			11.9	
$V	38.879/	2.4%	$Be	0.52699/	7.0%	$Ca	665.70/	0.46%	$Cu	11.929/	1.7%
	< 1.0			1170							
$Ag	-0.34290/	50%	$K	1168.0/	2.5%						

Measurements for 106781MG/KG- - 1

Elements of SIMULTANEOUS

$Sb	206.833	3.6540	0.0000	3.5760	0.07800	4.4315 PPM
		3.7180	0.0000	3.6380	0.08000	4.5606 PPM
		3.6500	0.0000	3.6240	0.02600	1.0756 PPM
$Zn	213.856	5.8640	0.0000	0.96200	4.9020	59.236 PPM
		6.0560	0.0000	0.96000	5.0960	61.761 PPM
		5.9420	0.0000	0.96400	4.9780	60.225 PPM
$Pb	220.353	5.9680	4.9500	0.0000	1.0180	29.532 PPM
		5.8420	4.7740	0.0000	1.0680	31.068 PPM
		5.9100	4.9880	0.0000	0.92200	26.583 PPM
$Cd	226.502	2.6580	0.0000	1.8720	0.78600	11.926 PPM
		2.6720	0.0000	1.9040	0.76800	11.652 PPM
		2.6620	0.0000	1.9360	0.72600	11.012 PPM
$Co	228.616	2.9020	0.0000	2.0100	0.89200	16.494 PPM
		2.9260	0.0000	2.0220	0.90400	16.712 PPM
		2.9220	0.0000	2.0080	0.91400	16.895 PPM
$Ni	231.604	3.7960	0.0000	2.6880	1.1080	23.006 PPM
		3.8080	0.0000	2.6660	1.1420	23.738 PPM
		3.8500	0.0000	2.6860	1.1640	24.212 PPM
$Ba	233.527	9.6880	0.0000	1.4920	8.1960	86.570 PPM
		9.8720	0.0000	1.5200	8.3520	88.213 PPM
		9.8340	0.0000	1.5180	8.3160	87.834 PPM
$Mn	257.610	164.63	0.0000	2.2580	162.37	689.28 PPM
		166.64	0.0000	2.2580	164.38	697.81 PPM
		166.25	0.0000	2.2640	163.99	696.15 PPM
$Fe	259.940	3913.1	0.0000	0.0000	3913.1	31052 PPM

		3955.7	0.0000	0.0000	3955.7	31391	PPM
$Cr	267.716	2.4060	1.4500	0.0000	0.95600	34.449	PPM
		2.4040	1.4620	0.0000	0.94200	33.940	PPM
		2.4500	1.4520	0.0000	0.99800	35.978	PPM
$Mg	279.079	23.506	2.3600	2.7380	20.957	2861.8	PPM
		23.810	2.4100	2.7320	21.239	2900.3	PPM
		23.916	2.4160	2.7740	21.321	2911.6	PPM
$Al	308.215	1190.6	0.0000	0.0000	1190.6	23887	PPM
		1207.0	0.0000	0.0000	1207.0	24219	PPM
		1206.5	0.0000	0.0000	1206.5	24209	PPM
$V	310.230	49.006	0.0000	10.032	38.974	37.116	PPM
		49.904	0.0000	10.196	39.708	38.915	PPM
		49.824	0.0000	10.056	39.768	39.062	PPM
$Be	313.042	2.4740	1.3600	0.0000	1.1140	0.82446	PPM
		2.4980	1.3640	0.0000	1.1340	0.86293	PPM
		2.5100	1.3480	0.0000	1.1620	0.91678	PPM
$Ca	317.933	54.570	0.0000	0.0000	54.570	852.96	PPM
		55.120	0.0000	0.0000	55.120	862.51	PPM
		55.154	0.0000	0.0000	55.154	863.10	PPM
$Cu	324.754	4.1760	2.0940	0.0000	2.0820	18.322	PPM
		4.2600	2.0940	0.0000	2.1660	19.111	PPM
		4.2580	2.1000	0.0000	2.1580	19.036	PPM
$Ag	328.068	8.1940	0.0000	0.0000	8.1940	-0.28753	PPM
		8.2400	0.0000	0.0000	8.2400	-0.14057	PPM
		8.2360	0.0000	0.0000	8.2360	-0.15335	PPM
$K	766.490	15.790	7.1240	0.0000	8.6660	2335.4	PPM
		15.826	7.1580	0.0000	8.6680	2336.0	PPM
		15.762	7.1740	0.0000	8.5880	2311.8	PPM

----- 11:15:06 3/22/91 ----- Method: CLP WITHOUT RATIO

Sample 106781MG/KG- - 1 #MEAS.= 3 for Seq., #MEAS.= 3 for Simul.

EL	CONC/	sigma	EL	CONC/	sigma	EL	CONC/	sigma	EL	CONC/	sigma
	<5.4			60.4			17.7			11.5	
$Sb	3.1820/	62%	$Zn	60.407/	2.1%	$Pb	17.732/	13%	$Cd	11.530/	4.1%
	16.7			23.7			87.5			694	
$Co	16.700/	1.2%	$Ni	23.652/	2.6%	$Ba	87.539/	0.98%	$Mn	694.42/	0.65%
~~$Fe~~	OVERCAL			34.8			2890			24,100	
	31311/	0.73%	$Cr	34.789/	3.0%	$Mg	2891.2/	0.90%	$Al	24105/	0.78%
	38.4			.868			860			18.8	
$V	38.365/	2.8%	$Be	0.86806/	5.3%	$Ca	859.53/	0.66%	$Cu	18.823/	2.3%
	<1.0			2330							
$Ag	-0.19381/	42%	$K	2327.7/	0.59%						

Measurements for 106782MG/KG- - 1

Elements of SIMULTANEOUS

$Sb	206.833	3.4580	0.0000	3.3760	0.08200	4.6897	PPM
		3.3280	0.0000	3.3800	-0.05200	-3.9583	PPM
		3.3020	0.0000	3.3380	-0.03600	-2.9257	PPM
$Zn	213.856	7.3600	0.0000	0.93400	6.4260	79.066	PPM
		7.4300	0.0000	0.96200	6.4680	79.612	PPM
		7.4180	0.0000	0.96200	6.4560	79.456	PPM
$Pb	220.353	5.6700	4.8340	0.0000	0.83600	23.941	PPM
		5.7720	4.7200	0.0000	1.0520	30.577	PPM
		5.7100	4.7760	0.0000	0.93400	26.952	PPM
$Cd	226.502	2.5040	0.0000	1.8700	0.63400	9.6102	PPM
		2.5060	0.0000	1.8340	0.67200	10.189	PPM
		2.5140	0.0000	1.9100	0.60400	9.1531	PPM
$Co	228.616	2.5880	0.0000	1.9680	0.62000	11.531	PPM

Audit Date: 5/7/91
Audited By: PJK
Order #: 39222

ECM LABORATORY
INORGANIC HOLDING TIMES

Client: Occidental Chemic
Job#: 00-4064-B
Matrix: SOLID

SAMPLE Number	Samp Coll Date	metals DIGEST Date	Days Held	Hg DIGEST Date	Days Held	Hg Date	Days Held	Note
106779	3/4/91	3/16/91	12	3/22/91	18	3/22/91	18	
106780								
106781								
106782								
106783								
106784								
106786								
106787								
106788								
106789	↓		↓		↓		↓	
106954	3/5/91		11		17		17	
106955								
106956								
106957								
106959	↓	↓	↓	↓	↓	↓	↓	

Comments:

* Indicates analysis data exceeds holding time.

BCM LABORATORY
DUPLICATE SAMPLE ANALYSIS

Audit Date: 5/7/91
Audited By: DAK
Order #: 39222
Units: mg/kg
Client: Occidental Chemical
Job #: 00-406443
Matrix: Solid

Analysis	Sample 106779	Dup. 106788	%RPD	NOTES
Ag	<1.0	1.19	200 %	*
Al	12,200	14,600	18.0 %	
Asat	3.83	3.55	8.0 %	
B	65.2	67.9	4.0 %	
Be	0.591	0.781	28.0 %	
Ca	789	950	19.0 %	
Cd	8.84	11.5	26.0 %	
Co	13.3	14.1	6.0 %	
Cr	26.2	34.8	28.0 %	
Cu	13.4	15.0	11.0 %	
Fe	28,600	36,900	23.0 %	
Hg	<0.10	<0.10	0.0 %	
K	1360	1640	19.0 %	
Mg	2040	2570	21.0 %	
Mn	538	593	10.0 %	
Na	<85.6	<85.6	0.0	
Ni	17.0	18.2	7.0 %	
Pb	19.3	25.4	27.0 %	
Sb	<5.4	6.31	200 %	*
Se	<1.0	<1.0	0.0	
Tl	<0.20	<0.2	0.0	
V	36.0	54.6	41.0 %	*
Zn	46.1	55.7	19 %	

Comments:

* Indicates analysis exceeds QC criteria

%RPD = (|S-D|)/((S+D)/2) X 100 Max %RPD Solid +/-35%, Liquid +/-20%

BCM LABORATORY
SPIKE SAMPLE ANALYSIS

Audit Date: 5/7/91
Audited By: PAK
Order #: 39222
Units: mg/Kg
Client: Occidental Chemical
Job #: DD-4004-13
Matrix: SOLID

Analysis	Spike 106789	Sample 106779	Amt. Spiked	%R
Ag	10.7	<1.0	10	107%
Al	—	12,200	—	NR
Asgf	10.91	3.83	8.0	89%
Ba	390	65.2	400	81%
Be	8.97	0.591	10	84%
Ca	—	789	—	NR
Cd	19.3	8.84	10.0	105%
Co	92.1	13.3	100.0	54%
Cr	67.5	26.2	40.	103%
Cu	52.7	13.4	50	79%
Fe	—	28,600	—	NR
Hg	0.0016	<0.10	0.002	80%
K	—	1360	—	NR
Mg	—	2040	—	NR
Mn	647	538	100	109%
Na	—	<85.6	—	NR
Ni	102	17.0	100	85%
Pb	96.6	19.3	100	77%
Sb	76.6	<5.4	100	77%
Se	0.0017	<1.0	0.01	17% *
Tl	0.0475	<0.2	0.05	95%
V	129	36.0	100	93%
Zn	141	46.1	100	95%

Comments:

* Indicates Analysis exceed QC criteria

%R = (Spike - Sample)/Amt. Spiked x 100 Range: %R = 75-125%

BCM Laboratory
Blank Analysis Results

Type	Conc	Matrix	Sample #	H2O Source	Contaminant	Conc/Detection Limit
			106787	BCM	Ag	0.005 mg/l / <0.005 mg/l
					Al	NONE found / <0.048 mg/l
					Ass't	NONE found / <0.001 mg/l
					Ba	0.0019 mg/l / <0.019 mg/l
					Be	0.00006 mg/l / <0.0004 mg/l
					Ca	0.0038 mg/l / <0.839 mg/l
					Cd	NONE found / <0.003 mg/l
					Co	0.002 mg/l / <0.01 mg/l
					Cr	0.002 mg/l / <0.006 mg/l
					Cu	NONE found / <0.003 mg/l
					Fe	0.00043 mg/l / <0.011 mg/l
					Hg	NONE found / <0.0002 mg/l
					K	0.05 mg/l / <0.696 mg/l
					Mg	0.00024 mg/l / <0.609 mg/l
					Mn	NONE found / <0.001 mg/l
					Na	0.142 mg/l / <0.428 mg/l
					Ni	NONE found / <0.01 mg/l
					Pb	NONE found / <0.024 mg/l
					Sb	0.0015 mg/l / <0.027 mg/l
					Se	NONE found / <0.001 mg/l
					Tl	0.0007 mg/l / <0.001 mg/l
					V	NONE found / <0.013 mg/l
					Zn	NONE found / <0.006 mg/l

COMMENTS:

BCM Laboratory
Detection Limits Results

Detection limits were reported for all samples analyzed: Yes ✓ No __

Exceptions:

Analysis	Date	Sample #