

Polymer Laboratories



Polymer Laboratories Ltd
Essex Road, Church Stretton, Shropshire SY6 6AX, UK
Tel (+44) 01694 723581, Fax (+44) 01694 722171
Email PL@polymerlabs.com www.polymerlabs.com

Miss K E Rose Environmental Health Officer South Shropshire District Council Stone House Corve Street Ludlow Shrops SY8 1DG

23 May 2001

Dear Miss Rose

Re: Remediation at Polymer Laboratories Ltd New Site

Further to your letter of 27 April we have prepared a Remediation Statement for the above site.

The evaluation of the site has just been completed and we are now able to file a final remediation report. Please note in the report that the remediation under the link building will be dealt with in the same manner as the main building site ie by excavation and disposal.

I trust this report will satisfy your requirements. I would appreciate your confirmation that the remediation and the report are acceptable to SSDC. If you have any questions please do not hesitate to contact Neil Hall or myself.

Yours sincerely

Dr Frank P Warner

Chairman

Enc

Background.

Polymer Laboratories Limited(PLL) has occupied the current Essex Road site since 1979. The site was developed by COSIRA for industrial start up units and Polymer Laboratories eventually purchased the whole of the site. Prior to this the site was owned by British Railways and was used as a goods yard and engineering works going back to the start of the railway system.

In 1998 Polymer Laboratories decided to enlarge the capacity of their production and research facility by the addition of a new building on the north end of the site. This area consisted of an old stone building (previously owned by British Rail), and an area of wasteland, which was undeveloped. Baart Harries Newall (BHN) were employed by PLL as architects on the new facility and plans were submitted for planning approval in 1999. In accordance with the wishes of the council an environmental impact statement was submitted with the planning application and approved by all relevant authorities. These plans were then passed by South Shropshire District Council later that year. Trial pits were dug as part of the initial design under the instruction of the civil engineers: Carroll and Williams Ltd. No problems were encountered at this stage and therefore construction of the facility was undertaken, starting in August 1999. At this time the legislation regarding the redevelopment of contaminated land had not been implemented as part of the planning procedure.

During a routine inspection of the site by the building control dept of SSDC, a layer in the subsoil was noted to be black. As it had no odour the building control officer advised the Builders (Frank Galliers Limited (FGL)) to proceed with caution and investigate if the layer changed in odour.

Later that week the site was inspected by Miss K E Rose of the Environment and Development Department of SSDC. Miss Rose was concerned that under new regulations (brought in after our initial planning application) the site should be tested for contamination, and in particular the black layer. It was pointed out by SSDC that if this layer fell above the threshold levels for contamination then it might have to be removed from the site retrospectively, as the floor slab was about to be laid the following week.

Actions by PLL.

(i) Main Building Remediation

A decision was made that given the risk of being asked to remove the black layer after the floor slabs had been poured, PLL had no option other than to instruct that the layer was removed and the area backfilled with fresh stone. The material removed was sent by FGL for disposal in a registered site. Section 62-transport documentation was retained by FGL and PLL to show that the correct procedure had been followed. Copies of these documents are given in the appendix. This was completed at a cost to PLL in excess of £50,000.

(ii) Contaminant Analysis

A sample of the layer was retained for testing by Enviros Technos Ltd, of Walford Nr Shrewsbury. The results of this test were passed onto SSDC. Tests on the sample showed the level of hydrocarbons in the soil entrained in this layer to be just above the threshold levels for industrial use. Visual examination of the layer and investigation into the previous use of the site concluded that the black layer consisted of granite aggregate from the track, which may be contaminated with biodegraded oils and greases mixed with coal dust originating from the site's previous use as an off-loading yard for a gas works. A copy of this analysis is given in the appendix. It should be noted that the evaluation of the sample was based on the entrapped soil within the aggregate mixture and did not take into account the whole composite soil/aggregate matrix. Clearly had this been accounted for then the contamination would have been substantially lower than the threshold level.

(iii) Analysis of soil below the Contaminated Layer

After the contaminated layer had been removed and the backfilling started a further visit was made to the site by SSDC on 24 November 1999. A discussion as to the removal of the layer took place and PLL was asked to sample the soil below the black layer to ensure that this was not contaminated. Again PLL employed the services of Enviros Technos to sample the layer below the black layer.

The result of these tests showed that the soil under the black layer had no, or very little contamination by hydrocarbons. It was felt therefore that the black layer, although shown to be contaminated with hydrocarbons, was stable and that no leaching had taken place. A copy of this report and a location map showing the location of the test points is given in the appendix.

(iv) Remediation - Main Site

PLL has removed the black layer from under all foundations of buildings being constructed on the site, and in the immediate locality of all pipes and trenches running through the site where ground was being disturbed.

However, due to the fact that the layer has shown no signs of leaching over at least 25 years it was concluded that it would be environmentally most effective to leave the black layer in place under all other areas on the site. These consist of the roadway, car parking spaces and peripheral ground around the site. We felt that to remove the layer from these areas would not be of benefit to the local environment and may indeed be more harmful environmentally by removing it to another site where it would become exposed.

During construction of the foundations for the electricity sub-station and generator, it was found that the contaminated layer did not continue to the west side of the site but stopped at the edge of the old roadway. It was therefore unnecessary to remove any soil from this part of the site.

(v) Future Remediation - Link Building

The construction project has two main phases, the first being the construction of the new building, which is nearly complete, and the second phase being the

Remediation Statement on Polymer Laboratories Ltd, Essex Road Site

refurbishment of the existing building, and the construction of a link between the two buildings. The same criteria will be applied by PLL for construction of the link. That is to say the soil including the black layer will be removed from site and disposed of as special waste in the same manner as the main building. The area will then be back filled with fresh stone.

Conclusion.

PLL therefore believes that it has complied with the requests of SSDC in a constructive and environmentally sound manner. In spite of the late discovery of the contaminated layer it has acted in such a way that the risk of this contaminant causing environmental harm has been effectively dealt with comprehensively.

As a company PLL has always acted in a responsible manner and will continue to do so in the future; we feel that our record to date bears this out. We will continue to liaise with all relevant authorities and hope that the new facility will improve our environmental performance. We have designed the facility in such a way as to be in keeping with the locality and to minimise any environmental impact.

F P Warner - Chairman A N Hall – Chemical Engineer



SAMPLE 1 AWALYSIS.

ALcontrol Geochem

FACSIMILE MESSAGE

Date

: 16 November, 2000

Page 1 of 7

Our Ref

: 00/07620/02/01

To

: Technos Limited

P00198001A

Attention

: Chris White

Fax No

: 01939 262222

Originator

; Sarah Cowling

Email

: sarah.cowling@geochem.com

Subject

: Geochem Results

MESSAGE:

Dear Chris.

Please find attached the results for your job.

If you have any questions please do not hesitate to contact me.

Regards,

Sarah Cowling

FAX OPERATOR: Picase deliver this document immediately to addressee. If he/she is not available, please telephone the originator. Please telephone our fax room on (01244) 671121 if any document is illegible or if any pages are not received. Thank you.

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R1070 363373

חטכב ממז

Geochem Analytical Services

Polychlorinated Biphenyls by GCMS

Sample Matrix: Soil

Our Reference: 00/07620/02/01

Date Sample Received: 10/11/00
Date Extracted/Prepared: 14/11/00
Extraction procedure: Microwave

Column Extraction: No

Date Analysed: 16/11/00 GC-MS Mode: SIM Internal Standard: External

	Sample No.	001			
1	Client Ref.	TP1			
	P.Q.L.	1			
CAS Number	Units	μg/kg			
12674-11-2	Aroclor 1016		"		
11104-28-2	Aroclor 1221				
11141-16-5	Aroclor 1232	1			
53469-21-9	Aroclor 1242				
12672-29-6	Aroclor 1248				
11097-69-1	Aroclor 1254				
11096-82-5	Aroclor 1260				
	Total	<1			

Calculated against Aroclor 1254.

Approved by

47 KINI 188 44.45

64070 00000

ALcontrol Geochem Analytical Services

Semivolatile Organic Compounds

Sample Identity - 200007620-001/TP 1 Client / Sample matrix - TECHNOS LTD/SOIL Date Acquired - 15/Nov/2000 Units - µg/kg

CAS Number	Compound	Çoncn.	CAS Number	Compound	Concn.
108-95-2	Phenol	<100	207-08-9	Benzo(k)fluoranthrene	649
95-57-8	2-Chloraphenal	<100	50-32-8	Benzo(a)pyrene	724
95-48-7	2-Methylphenal	<100	193-39-5	Indeno(1,2,3-cd)pyrene	529
106-44-5	4-Methylphenol	<100	53-70-3	Dibenzo(a,h)anthracene	113
88-75-5	2-Nitrophenol	<100	191-24-2	Benzo(ghi)perylene	405
100-02-7	4-Nitrophenol	<100	91-58-7	2-Chloronaphthalene	<100
120-83-2	2,4-Dichlorophenol	<100	91-57-6	2-Methylnaphthalene	<100
105-67-9	2,4-Dimethylphenol	<100	86-74-8	Carbazole	<100
59-50-7	4-Chloro-3-methylphenol	<100	78-59-1	Isophorone	<100
88-06-2	2,4,6-Trichlorophenol	<100	132-64-9	Dibenzofuran	<100
95-95-4	2,4,5-Trichlorophenol	<100	131-11-3	Dimethyl phthalate	<100
87-86-5	Pentachlorophenol	<100	84-66-2	Diethyl phthalate	<100
541-73-1	1,3-Dichlorobenzene	<100	84-74-2	Di-n-butylphthalate	401
106-46-7	1,4-Dichlorabenzene	<100	117-84-0	Oi-n-octylphthalate	<100
95-50-1	1,2-Dichlorobenzene	<100	117-81-7	Bis(2-ethylhexyl)phthalate	<100
120-82-1	1,2,4-Trichlorobenzene	<100	85-68-7	Butylbenzylphthalate	<100
98-95-3	Nitrobenzene	<100	106-47-8	4-Chloroanili∩e	<100
103-33-3	Azobenzene	<100	88-74-4	2-Nitroanaline	<100
118-74-1	Hexachlorobenzene	<100	99-09-2	3-Nitroaniline	<100
91-20-3	Naphthalene	<100	100-01-6	4-Nitroaniline	<100
208-96-8	Acenaphthylene	<100	121-14-2	2,4-Dinitrotoluene	<100
83-32-9	Acenaphthene	<100	606-20-2	2,6-Dinitrotoluene	<100
86-73-7	Flourene	<100	111-44-4	Bis(2-chloroethyl)ether	<100
85-01-8	Phenanthrene	237	101-55-3	4-Bromophenylphenylether	<100
120-12-7	Anthracene	106	7005-72-3	4-Chlorophanylphenylether	<100
205-44-0	Fluoranthrene	625	67-72-1	Hexachloroethane	<100
129-00-0	Pyrene	926	87-68-3	Hexachlorobutadiene	<100
56-55-3	Benzo(a)anthracene	489	77-47-4	Hexchlorocyclopentadiene	<100
218-01-9	Chrysene	634	111-91-1	Bis(2-chloroethoxy)methane	<100
205-99-2	Benzo(b)fluoranthrene	628	621-64-7	N-nitrosodi-n-propylamine	<100



ALCONTROL GEOCHEM ANALYTICAL SERVICES

Tentatively Identified Compounds

by GCMS

Method - Semi-volatile Analysis

Mode - Full scan

Matrix - soil

Sample No. - 7620-001

Sample ID \ Depth - TP 1

Peak No.	Compound Identification	RetentionTime min	Concentration µg/kg
	C10-30 Hydrocarbons	-	97800

Report written by	:	- SM
Report checked by	:	

Gasoline Range Organics by GC

Job Number: 00/07620/02/01

Client: Technos Limited

Ref:

Sample Type : SOIL

Units: µg/kg

Sample No	Sample Identity	Depth	Total Volatiles
			C ₄ to C ₁₃
7	TP 1		< 10
	_	-	
			-
 			

BTEX Analysis by GC

Job Number: 00/07620/02/01

Client: Technos Limited

Ref:

Sample Type : SOIL

Units: µg/kg

Sample No	Sample Identity	Depth	Beazene	Toluene	Ethyl Benzene	Total Xylene
7	тр 1		< 10	< 10	< 10	< 10
 +						

Diesel Range Organics by GC

Job Number: 00/07620/02/01

Client: Technos Limited

Ref:

Sample Type: SOIL

Units : mg/kg

Sample No	Sample Identity	Depth	Diesel Range Hydrocarbons	,
1	TP I		1290	Biodegraded Diesel/Caboxylic Acids/Lube oil
		 		
			+	
			+	
		+		
		+		
			_	
		+	_	

** TX CONFIRMATION REPORT ** AS OF 20 NOV '00 16:12 PAGE.01

POLYMER LABORATORIES

DATE TIME TO/FROM 01 11/20 16:10 01743364944

TO/FROM MODE MIN/SEC PGS CMD# STATUS 01743364944 EC--S 02"08 09 OK

NVIROSTECHNOS

knowledge innovation solutions

SAMPLES 2-6 ANALYSIS.

For the Attention of

Mr N Hall

Polymer Laboratories Ltd

Essex Road

Church Stretton

Shropshire

SY6 6AX

Your ref:

Our ref:

PO0198001A/gdh

If calling

please ask for Glynn Hobson

Direct Dial:

01939 262355

Direct Fax:

01939 238355

e-mail:

glynn.hobson@enviros.com

Date:

18 December 2000

Dear Neil

Re: Laboratory Analysis

Please find enclosed a faxed copy of the soil sample laboratory analysis and a copy of the A1 drawing. provided by yourselves, indicating the sample locations taken on the 29th November 2000 from your construction site. The analysis values are fairly low. I will post the final Alcontrol Geochem report once received. If you have any queries, please contact me.

Yours sincerely for Technos Limited

Glynn Hobson EnviScan Manager



FACSIMILE MESSAGE

Date

: 6 December, 2000

Page 1 of 15

Our Ref

: 00/08359/02/01

To

: Technos Limited

Attention

: Chris White

Fax No

: 01939 262222

Originator

: Sarah Cowling

Email

: sarah.cowling@geochem.com

Subject

: Geochem Results

MESSAGE:

Dear Chris,

Please find attached the results for your job Poo198001A.

If you have any questions please do not hesitate to contact me.

Regards.

Sarah Cowling

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Diesel Range Organics by GC

Job Number: 00/08359/02/01

Client: Technos Limited

Ref : P00198001A

Sample Type : SOIL

Units : mg/kg

Sample No	Sample Identity	Depth	Diesel Range Hydrocarbons	Interpretation	
i I	S2		37	Korona D. Li	
3	S3		54	Kcrosene Residues/Biodegraded diesel/Lube Oil	
5	S4			Kerosene Residues/Heavy n-alkanes	
7	\$5		50	Kerosene Residues/Biodegraded diesel/Heavy n-alkanes.	
9	S6		35	Kerosene Residues/Biodegraded diesel/Lube Oil	
				Kerosene Residues/Biodegraded diesel/Lube Oil	
\rightarrow					

Gasoline Range Organics by GC

Job Number: 00/08359/02/01

Client: Technos Limited

Ref: P00198001A

Sample Type : SOIL

Units: µg/kg

Sample No	Sample Identity	Depth	Total Volati
2	S2		C ₄ to C ₁₃
4	\$3		< 10
6	S4		< 10
8	S5		< 10
10	S6		< 10
			< 10
		$\overline{}$	
			
		-	
		_	
		-	

BTEX Analysis by GC

Job Number: 00/08359/02/01

Client: Technos Limited

Ref: P00198001A

Sample Type: SOIL

Units ; µg/kg

Sample No	Sample Identity	Depth	Benzene	Toluene	Ethyl Benzene	To Xyl
2	S2		< 10	£10		
4	S3		< 10	< 10	< 10	<]
6	S4		< 10	<10	< 10	< 1
8	S5		< 10	< 10	< 10	<1
10	S6			< 10	< 10	< 1
			< 10	< 10	< 10	< 1
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		-				

ALcontrol Geochem Analytical Services

Semivolatile Organic Compounds

Sample Identity - 200008359-001/S2
Client / Sample matrix - techno /soil
Date Acquired - 2/Dec/2000
Units - µg/kg

CAS Num	Dilbodild	Concn.	CAS	Numbe	or Compound	
108-95-	2 Phenol	<100		7-08-9	Sompound	Concr
95-57-8	2-Chlorophenol	<100	77 W	0-32-8	Benzo(k)fluoranthrene	<100
95-48-7	2-Methylphenol	<100	11	3-39-5	Benzo(a)pyrene	<100
106-44-	5 4-Methylphenol	<100	11	3-70-3	Indeno(1,2,3-cd)pyrene	
88-75-5	2-Nitrophenol	<100	10	1-24-2	Dibenzo(a,h)anthracene	<100
100-02-7		<100	10	-58-7	Benzo(ghi)perylene	<100
120-83-2		<100	N D		2-Chloronaphthalene	<100
105-67-9		<100		-57-6	2-Methylnaphthalene	<100
59-50-7	4-Chloro-3-methylphenol	<100	10	-74-8	Carbazole	<100
88-06-2	2,4,6-Trichlorophenol	<100	4.0	-59-1	Isophorone	<100
95-95-4	2,4,5-Trichlorophenol	<100	ll II	-64-9	Dibenzofuran	<100
87-86-5	Pentachlorophenol		0 11	-11-3	Dimethyl phthalate	<100
541-73-1	1,3-Dichlorobenzene	<100	1 1	66-2	Diethyl phthalate	<100
106-46-7	1,4-Dichlorobenzene	<100	1 11	74-2	Di-n-butylphthalate	<100
95-50-1	1,2-Dichlorobenzene	<100	l II	84-0	Di-n-octylphthalate	<100
120-82-1	1,2,4-Trichlorobenzene	<100	V.	81-7	Bis(2-ethylhexyl)phthalate	<100
98-95-3		<100	85-6		Butylbenzylphthalate	<100
103-33-3	Nitrobenzene	<100	106-	47-8	4-Chloroanlline	<100
118-74-1	Azobenzene	<100	88-7	4-4	2-Nitroanaline	<100
91-20-3	Hexachlorobenzene	<100	99-0	9-2	3-Nitroaniline	<100
208-96-8	Naphthalene	<100	100-0	1-6	4-Nitroaniline	<100
83-32-9	Acenaphthylene	<100	121-1	4-2	2,4-Dinitrotoluene	<100
	Acenaphthene	<100	606-2	0-2	2,6-Dinitrotoluene	<100
86-73-7	Flourene	<100	111-4	4-4	Bis(2-chloroethyl)ether	<100
35-01-8	Phenanthrene	<100	101-5	5-3 4	-Bromophenylphenylether	<100
20-12-7	Anthracene	<100	7005-7		-Chlorophenylphenylether	<100
06-44-0	Fluoranthrene	<100	67-72		Hexachloroethane	
29-00-0	Pyrene	<100	87-68	.3	Hexachlorobutadiene	<100
6-55-3	Benzo(a)anthracene	<100	77-47	4 H	lexchlorocyclopentadiene	<100
8-01-9	Chrysene	<100	111-91	- 1	s(2-chloroethoxy)methane	<100
5-99-2	Benzo(b)fluoranthrene	<100	621-64		-nitrosodi-n-propylamine	<100
					The propyramine	<100



ALCONTROL GEOCHEM ANALYTICAL SERVICES Tentatively Identified Compounds

by **GCMS**

Method - Semi-volatile Analysis

Mode - Full scan

Matrix - soil

Sample No. - 8359-001

Sample ID \ Depth - S2

Peak No.	Compound Identification	RetentionTime	Concentration
		min	μg/kg
	benzene dicarboxylic acid Esters	-	1520
	,		

NB: the Extracted Blank has been subtracted

Report written by	:	
Report checked by	:	

70015 [9038 ON YG\YT] 15.00 Time 99' 01'50

ALcontrol Geochem Analytical Services

Semivolatile Organic Compounds

Sample Identity - 200008359-003/S3
Client / Sample matrix - techno /soil
Date Acquired - 2/Dec/2000
Units - µg/kg

	CAS Numbe	or Compound	Conen		C46 ::			
	108-95-2	Phenol		4	CAS Nur	Tompound	Conc	n.
	95-57-8	2-Chlorophenol	<100		207-08-	- Surgo(k)/indofattin/ene	<100	
1	95-48-7	1	<100	N	50-32-	Benzo(a)pyrene	<100	.
- 1	106-44-5	2-Methylphenol	<100		193-39-	5 Indeno(1,2,3-cd)pyrene	<100	,
1	88-75-5	4-Methylphenol	<100		53-70-3		1	1
I	100-02-7	2-Nitrophenol	<100		191-24-2		<100	- 1
1	120-83-2	4-Nitrophenol	<100		91-58-7		<100	l l
	105-67-9	2,4-Dichlorophenol	<100		91-57-6		<100	1
1	_	2,4-Dimethylphenol	<100	II	86-74-8	Carbazole	<100	
1	59-50-7	4-Chloro-3-methylphenol	<100	II	78-59-1	Isophorone		
ı	88-06-2	2,4,6-Trichlorophenol	<100		132-64-9		<100	ı
	95-95-4	2,4,5-Trichlorophenol	<100	11	131-11-3	Dimethyl phthalate	<100	
1	87-86-5	Pentachlorophenol	<100		84-66-2	Diethyl phthalate	<100	
K	541-73-1	1,3-Dichlorobenzene	<100		84-74-2	Di-n-butylphthalate	<100	
g	106-46-7	1,4-Dichlorobenzene	<100	Н	117-84-0	Di-n-octylphthalate	<100	1
1	95-50-1	1,2-Dichlorobenzene	<100		117-81-7	Bis(2-ethylhexyl)phthalate	<100	
1	20-82-1	1,2,4-Trichlorobenzene	<100		85-68-7		<100	l
	98-95-3	Nitrobenzene	<100		106-47-B	Butylbenzylphthalate	<100	
1	03-33-3	Azobenzene	<100		88-74-4	4-Chloroaniline	<100	1
1	18-74-1	Hexachlorobenzene	<100	H	99-09-2	2-Nitroanaline	<100	1
9	1-20-3	Naphthalene	<100		100-01-6	3-Nitroaniline	<100	I
2	DB-96-8	Acenaphthylene	<100			4-Nitroaniline	<100	
8	3-32-9	Acenaphthene	<100	K	121-14-2	2,4-Dinitrotoluene	<100	
8	6-73-7	Flourene		1	606-20-2	2,6-Dinitrotaluene	<100	
8	5-01-8	Phenanthrene	<100	1	111-44-4	Bis(2-chloroethyl)ether	<100	ı
12	0-12-7	Anthracene	<100		101-55-3	4-Bromophenylphenylether	<100	
N .	6-44-0	1	<100	7	005-72-3	4-Chlorophenylphenylether	<100	
l .	9-00-0	Fluoranthrene	<100		67-72-1	Hexachloroethane	<100	
	-55-3	Pyrene Banzo(a) cotto	<100	ı	87-68-3	Hexachlorobutadiene	<100	
	3-01-9	Benzo(a)anthracene	<100	7	77-47-4	Hexchlorocyclopentadiene	<100	
	1	Chrysene	<100	1	11-91-1	Bis(2-chloroethoxy)methane	<100	
20;	1-35-7	Benzo(b)fluoranthrene	<100	5	21-64-7	N-nitrosodi-n-propylamine	<100	



ALCONTROL GEOCHEM ANALYTICAL SERVICES

Tentatively Identified Compounds

by **GCMS**

Method - Semi-volatile Analysis

Mode - Full scan

Matrix - soil

Sample No. - 8359-003

Sample ID \ Depth - S3

Peak No.	Compound Identification		
		RetentionTime	Concentration
	No Communication	min	μg/kg
	No Compounds Detected		<100
			
		+	
		+	
		+	

NB: the Extracted Blank has been subtracted

Report written by	:
Report checked by	

90015 [3038 ON X8/XT] 18:90 HIT 88' 91/70

ALcontrol Geochem Analytical Services

Semivolatile Organic Compounds

Sample Identity - 200008359-005/S4
Client / Sample matrix - techno /soil
Date Acquired - 4/Dec/2000
Units - µg/kg

CAS Numbe	Compound	Concn.	CAS Numb	er Compound	
108-95-2	Phenol	<100	207-08-9	Benzo(k)fluoranthrene	Concn.
95-57-8	2-Chlorophenol	<100	50-32-8	Benzo(a)pyrene	<100
95-48-7	2-Methylphenol	<100	193-39-5	M 200 A	<100
106-44-5	4-Methylphenol	<100	53-70-3	Indeno(1,2,3-cd)pyrene	
88-75-5	2-Nitrophenol	<100	191-24-2	Dibenzo(a,h)anthracene	
100-02-7	4-Nitrophenol	<100	91-58-7	Benzo(ghi)perylene	<100
120-83-2	2,4-Dichlorophenol	<100	91-57-6	2-Chloronaphthalene	<100
105-67-9	2,4-Dimethylphenal	<100	86-74-8	2-Methylnaphthalene	<100
59-50-7	4-Chloro-3-methylphenol	<100	78-59-1	Carbazole	<100
88-05-2	2,4,6-Trichlorophenal	<100	132-64-9	Isophorone	<100
95-95-4	2,4,5-Trichlorophenol	<100	1	Dibenzofuran	<100
87-86-5	Pentachlorophenol	<100	131-11-3	Dimethyl phthalate	<100
541-73-1	1,3-Dichlorobenzene	<100	84-66-2	Diethyl phthalate	<100
106-46-7	1,4-Dichlorobenzene	<100	84-74-2	Di-п-butylphthalate	<100
95-50-1	1,2-Dichlorobenzene	<100	117-84-0	Di-n-octylphthalate	<100
120-82-1	1,2,4-Trichlorobenzene		117-81-7	Bis(2-ethylhexyl)phthalate	<100
98-95-3	Nitrobenzene	<100	85-68-7	Butylbenzylphthalate	<100
103-33-3		<100	106-47-8	4-Chloroanlline	<100
118-74-1	Azobenzene	<100	88-74-4	2-Nitroanaline	<100
	Hexachlorobenzene	<100	99-09-2	3-Nitroaniline	<100
91-20-3	Naphthalene	<100	100-01-6	4-Nitroaniline	<100
208-96-8	Acenaphthylene	<100	121-14-2	2,4-Dinitrotoluene	<100
83-32-9	Acenaphthene	<100	606-20-2	2,6-Dinitrotoluene	<100
86-73-7	Flourene	<100	111-44-4	Bis(2-chloroethyl)ether	<100
85-01-8	Phenanthrene	<100	101-55-3	4-Bromophenylphenylether	<100
120-12-7	Anthracene	<100	7005-72-3	4-Chlorophenylphenylether	<100
206-44-0	Fluoranthrene	<100	67-72-1	Hexachloroethane	<100
129-00-0	Pyrene	<100	87-68-3	Hexachlorobutadiene	<100
56-55-3	Benzo(a)anthracene	<100	77-47-4	Hexchlorocyclopentadiene	<100
218-01-9	Chrysene	<100	111-91-1	Bis(2-chloroethoxy)methane	<100
205-99-2	Benzo(b)fluoranthrene	<100	621-64-7	N-nitrosodl-n-propylamine	<100



ALCONTROL GEOCHEM ANALYTICAL SERVICES Tentatively Identified Compounds

by **GCMS**

Method - Semi-volatile Analysis

Mode - Full scan

Matrix - soil

Sample No. - 8359-005

Sample ID \ Depth - S4

Peak No.	Compound Identification	RetentionTime	Concentration
		min	μg/kg
	No Compounds Detected	-	<100
			100
		 	
		+	

NB: the Extracted B	lank has been subtracted
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Report written by	:	M
Report checked by	:	

110 M [505] W XX/XT] [5:60 HIT 88' C1\70

ALcontrol Geochem Analytical Services

Semivolatile Organic Compounds

Sample Identity - 200008359-007/S5
Client / Sample matrix - techno /soil
Date Acquired - 2/Dec/2000
Units - µg/kg

CAS Num	Sompagno	Concn.	CAS Num	ber Compound	7
108-95-	2 Phenol	<100	207-08-	- Inputit	Солсп.
95-57-8	2-Chlorophenol	<100	50-32-8	- Chico(k) ildoranti jene	<100
95-48-7	2-Methylphenol	<100	193-39-	Jenzo(a)pyrene	<100
106-44-5	4-Methylphenol	<100	53-70-3	mand(1/2,5 cd)pyrerie	1
88-75-5	2-Nitrophenol	<100	191-24-2	o is chizo(a,ii) and ii acene	<100
100-02-7		<100	91-58-7	Don'zo(grir)perylene	<100
120-83-2	.,,	<100	H R	2-Chloronaphthalene	<100
105-67-9	2,4-Dimethylphenol	<100	91-57-6	2-Methylnaphthalene	<100
59-50-7	4-Chloro-3-methylphenol	1	86-74-8	Carbazole	<100
88-06-2	2,4,6-Trichlorophenol	<100	78-59-1	Isophorone	<100
95-95-4	2,4,5-Trichlorophenol	<100	132-64-9	Dibenzofuran	<100
87-86-5	Pentachlorophenol	<100	131-11-3	Dimethyl phthalate	<100
541-73-1	1,3-Dichlorobenzene	<100	84-66-2	Diethyl phthalate	<100
106-46-7	1,4-Dichlorobenzene	<100	84-74-2	Di-n-butylphthalate	<100
95-50-1	1,2-Dichlorobenzene	<100	117-84-0	Di-n-octylphthalate	<100
120-82-1		<100	117-81-7	Bis(2-ethylhexyl)phthalate	<100
98-95-3	1,2,4-Trichlorobenzene	<100	85-68-7	Butylbenzylphthalate	<100
103-33-3	Nitrobenzene	<100	106-47-8	4-Chloroaniline	<100
118-74-1	Azobenzene	<100	88-74-4	2-Nitroanaline	<100
	Hexachlorobenzene	<100	99-09-2	3-Nitroaniline	<100
91-20-3	Naphthalene	<100	100-01-6	4-Nitroanlline	<100
208-96-8	Acenaphthylene	<100	121-14-2	2,4-Dinitrotoluene	<100
83-32-9	Acenaphthene	<100	606-20-2	2,6-Dinitrotoluene	<100
86-73-7	Flourene	<100	111-44-4	Bis(2-chloroethyl)ether	
85-01-8	Phenanthrene	<100	101-55-3	4-Bromophenylphenylether	<100
120-12-7	Anthracene	<100	7005-72-3	4-Chlorophenylphenylether	<100
206-44-0	Fluoranthrene	<100	67-72-1	Hexachloroethane	<100
129-00-0	Pyrene	<100	87-68-3	Hexachlorobutadiene	<100
56-55-3	Benzo(a)anthracene	<100	77-47-4		<100
218-01-9	Chrysene	<100	111-91-1	Hexchlorocyclopentadiene	<100
205-99-2	Benzo(b)fluoranthrene	<100	621-64-7	Bis(2-chloroethoxy)methane	<100
			JE1-U4"/	N-nitrosodl-n-propylamine	<100



ALCONTROL GEOCHEM ANALYTICAL SERVICES Tentatively Identified Compounds

by **GCMS**

Method - Semi-volatile Analysis

Mode - Full scan

Matrix - soil

Sample No. - 8359-007

Sample ID \ Depth - S5

Peak No.	Compound Identification		
		RetentionTime	Concentration
	N. C.	min	μg/kg
	No Compounds Detected	-	<100
		+	
		+	

NB: the Extracted Blank has been subtracted	ſ.
Report written by :	1/h
Report checked by :	V

\$10 FO 15083 ON X8/XT1 15:90 HUT 33' \$1/70

ALcontrol Geochem Analytical Services

Semivolatile Organic Compounds

Sample Identity - 200008359-009/S6 Client / Sample matrix - techno /soil Date Acquired - 2/Dec/2000 Units - µg/kg

	CASI	Vumber	Comment								
		95-2	Compound		Cond	n.	CAS N	umber	Compound		
	11	57-8	Phenol		<10	0	207-0	08-9	Benzo(k)fluoranthre		onen.
	95-4		2-Chlorophenol		<100		50-3	2-8	Benzo(a)pyrene	1	100
	106-4	- 1	2-Methylphenol		<100		193-3	9-5	Indeno(1,2,3-cd)pyre	_	100
	88-7	-	4-Methylphenol	1	<100	1	53-70	-3	Dibenzo(a,h)anthrace		100
	100-0	- 1	2-Nitrophenol		<100	- 1	191-24	1-2			100
	120-8		4-Nitrophenol		<100		91-56	.7	Benzo(ghi)perylene		00
	105-6	_	2,4-Dichlorophenol		<100	11	91-57-		2-Chloronaphthalene		00
	ll .	- 1	2.4-Dimethylphenol	-	<100		86-74-		2-Methylnaphthalene	<1	00
	59-50	,	4-Chloro-3-methylpheno	1	<100	11	78-59-	- 1	Carbazole	<10	סכ
	88-06-		2,4,6-Trichlorophenol	1	<100		132-84-	- 1	Isophorone	<10	00
	95-95-	1	2,4,5-Trichlorophenol		<100		131-11-	-	Dibenzofuran	<10	0
	87-86-	1	eritachiorophenol		<100		84-66-2		Dimethyl phthalate	<10	0
	541-73-		1,3-Dichlorobenzene	1	<100		84-74-2	1	Diethyl phthalate	<100	ן כ
	106-46-		1,4-Dichlorobenzene		<100		117-84-0	ı	Di-n-butylphthalate	<100	,
	95-50-1	1	1,2-Dichlorobenzene	.	<100	II	117-81-7	- 1	Di-n-octylphthalate	<100	
	120-82-1	1	1,2,4-Trichlorobenzene	1.	<100		85-68-7	1	3is(2-ethylhexyl)phthalate	<100	
	98-95-3		Nitrobenzene	.	100		108-47-8		Butylbenzylphthalate	<100	
	103-33-3		Azobenzene	1	100		88-74-4	1	4-Chloroaniline	<100	1
	118-74-1		Hexachlorobenzene	1	100			1	2-Nitroanaline	<100	1
	91-20-3		Naphthalene	1	100	1	99-09-2	1	3-Nitroaniline	<100	1
	208-96-8		Acenaphthylene	1	100	N .	100-01-6		4-Nitroanillne	<100	ı
	83-32-9	1	Acenaphthene		00	ll .	121-14-2	1	2,4-Dinitrotoluene	<100	1
	86-73-7		Flourene		- 4	l	06-20-2	1	2,6-Dinitrotoluene	<100	1
	85-01-8		Phenanthrene		00	1	11-44-4	В	lis(2-chloroethyl)ether	<100	1
	120-12-7	1	Anthracene	<10	116		01-55-3	4-B	romophenylphenylether	<100	1
	206-44-0		Fluoranthrene	<10	11 6		05-72-3		hlorophenylphenylether	<100	
	129-00-0		Pyrane	<10	11 11		7-72-1		Hexachloroethane	<100	1
	56-55-3	В	enzo(a)anthracene	<10	0.0		7-68-3	н	lexachlorobutadiene	<100	
	218-01-9		Chrysene	<10	11	77	7-47-4		chlorocyclopentadiene	<100	
	205-99-2	Bei		<10	41	11	1-91-1		-chloroethoxy)methane	<100	N .
_		29	nzo(b)fluoranthrene	<100		62	1-64-7	N-nit	trosodi-n-propylamine		
									, -Pinining	<100	



ALCONTROL GEOCHEM ANALYTICAL SERVICES Tentatively Identified Compounds

by **GCMS**

Method - Semi-volatile Analysis

Mode - Full scan

Matrix - soil

Sample No. - 8359-009

Sample ID \ Depth - S6

Peak No.	Compound Identification		
		RetentionTime	Concentration
	No Compounds Detected	min	μ g/k g
		-	<100

NB: the Extracted Blank has been subtracted

Report written by	:
Report checked by:	

** TOTAL PAGE, 15 (**

Geochem Analytical Services

Polychlorinated Biphenyls by GCMS

Sample Matrix : Soil

Our Reference: 00/8359/02/01

Date Sample Received: 30/11/00
Date Extracted/Prepared: 1/12/00
Extraction procedure: Microwave

Column Extraction: No
Date Analysed: 5/12/00
GC-MS Mode: SIM
Internal Standard: External

	Sample No.	001	003	005	1 000	
	Client Ref.	S2	S3		007	009
	P.Q.L.	1 1	33	S4	S5	S6
CAS Number	Units	115/50	1	1	1	1
12674-11-2	Aroclor 1016	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
11104-28-2	Aroclor 1221					
11141-16-5	Aroclor 1232	1				
	Aroclor 1242		ı			
	Aroclor 1248					
	Aroclor 1254	1 1	- 1		1	
	Aroclor 1260	1	1	1	1	
	Total	<1	<1	<1	<1	

Calculated against Aroclor 1254.

Approved by

