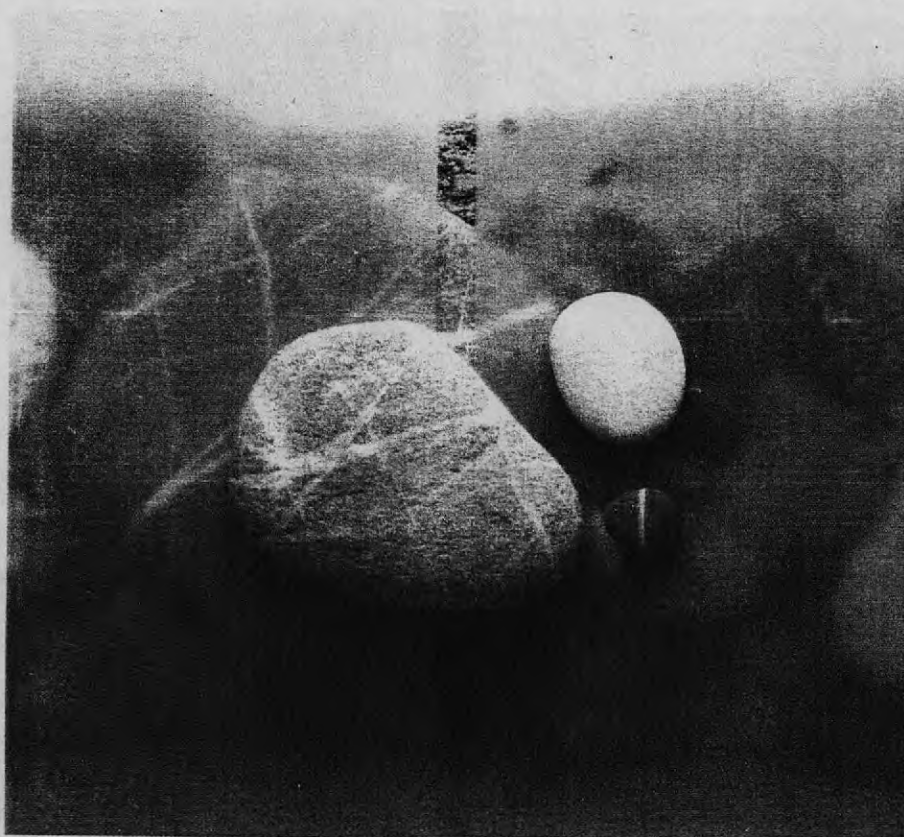


Petição da Shell Brasil Ltda
de 10.06.2003

ANEXO 02

Ar • Solo • Água

Geologia e Engenharia Ambiental



Relatório de Avaliação Ambiental, Plano de Ação e Conceito de Remediação da Base Ipiranga e Entorno

Anexo 3 - Laudos Laboratoriais

Volume 1 – Amostras de Solo – C 1-1 à C 20-3
(Colorado)
Laboratório CEIMIC

CNC Solutions
Tipo: Processo Legislativo
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Shell Brasil Ltda.

Abril/2003

Anexo 1 vol.01/26

08-124/2002

ANEXO 3 - LAUDOS LABORATORIAIS

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- Volume 2 – Amostras de Solo – C21-1 à C37-2 - (Colorado) - Laboratório CEIMIC
- Volume 3 – Amostras de Solo – C38-1 à C57-4 - (Colorado) - Laboratório CEIMIC
- Volume 4 – Amostras de Solo – C58-1 à C81-4 - (Colorado) - Laboratório CEIMIC
- Volume 5 – Amostras de Solo – C82-1 à C220-3 - (Colorado e BIP 1) - Laboratório CEIMIC
- Volume 6 – Amostras de Solo - E1-1 à E17-2 - (Entorno) - Laboratório CEIMIC
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- Volume 10 – Amostras de Água Subterrânea - CAC58 à PM80 – BIP 1 – (Colorado, BIP 1 e Entorno)
- Volume 11 – Amostras de Água Subterrânea - PM81 à PM106 – BIP 1 – (Colorado, BIP 1 e Entorno)
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POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C1-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-01
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B3
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	40
Aroclor-1221	ND	80
Aroclor-1232	ND	40
Aroclor-1242	ND	40
Aroclor-1248	ND	40
Aroclor-1254	ND	40
Aroclor-1260	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	51	26 - 102
Decachlorobiphenyl	58	30 - 144

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Form I PCB

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C1-1

Date Sampled: 07/18/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020729-01

Date Sample Extracted: 07/23/02

Date Sample Analyzed: 07/30/02

Associated Method Blank: OP0723-B4

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected

+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	78	30 - 150
Triphenyl Phosphate	93	30 - 150

* These limits are provided for advisory purposes.

Reported by: X0

Approved by: /s/

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C1-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-01
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: P0723-B2
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.0
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	32	35 - 135
Decachlorobiphenyl	73	25 - 143

* These limits are provided for advisory purposes.

Reported by: JS

Approved by: Rem

Form I PEST

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C1-1

Date Sampled: 07/18/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020729-01

Date Sample Extracted: 07/31/02

Date Sample Analyzed: 08/01/02

Associated Method Blank: C0731-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	40
Carbaryl	ND	40
Linuron	ND	40
Propanil	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	19	30 - 150

* For advisory purposes only.

Reported by: B

Approved by: RM

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C1-1

Date Sampled: 07/18/02

Date Sample Received: 7/19/2002

Matrix: Soil

Laboratory ID: 020729-01

Date Analysis Completed: 08/05/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0805	78400	40
Antimony	0805	20	12
Arsenic	0805	ND	3
Barium	0805	ND	40
Cadmium	0805	ND	1
Chromium	0805	51	2
Copper	0805	9	5
Iron	0805	39500	20
Lead	0805	5	2
Manganese	0805	49	3
Mercury	0805	ND	0.1
Selenium	0805	ND	7
Silver	0805	ND	2
Sodium	0805	ND	1000
Zinc	0805	ND	12

ND -- Not Detected

Reported by: MBP

Approved by: KW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207103

Smp #	Sample ID	Matrix	Date Sampled	Date Received
01	C1-1	Soil	07/18/02	07/19/02

Parameter	Units	01
%Solids	%	81
Organic Lead	mg/Kg	<0.7

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C1-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-01
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

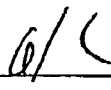
Client: CEIMIC-SHELL
Client Sample ID: C1-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-01
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
his(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C1-2

Date Sampled: 07/18/02

Laboratory ID: 020729-02

Date Sample Received: 7/19/2002

Date Analysis Completed: 08/05/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0805	21100	40
Antimony	0805	23	12
Arsenic	0805	ND	3
Barium	0805	ND	40
Cadmium	0805	ND	1
Chromium	0805	26	2
Copper	0805	9	5
Iron	0805	34900	20
Lead	0805	20	2
Manganese	0805	21	3
Mercury	0805	ND	0.1
Selenium	0805	ND	7
Silver	0805	ND	2
Sodium	0805	ND	1000
Zinc	0805	ND	12

ND - Not Detected

Reported by: CBP

Approved by: KW

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C1-2

Date Sampled: 07/18/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020729-02

Date Sample Extracted: 07/31/02

Date Sample Analyzed: 08/01/02

Associated Method Blank: C0731-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	45
Carbaryl	ND	45
Linuron	ND	45
Propanil	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	48	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CBIMIC-SHELL
Client Sample ID: C1-2
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020729-02
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: P0723-B2
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.89
4,4'-DDE	ND	0.89
Endrin	ND	0.89
Endosulfan II	ND	0.89
4,4'-DDD	ND	0.89
Endosulfan Sulfate	ND	0.89
4,4'-DDT	ND	0.89
Methoxychlor	ND	2.2
Endrin Ketone	ND	0.89
Endrin Aldehyde	ND	0.89
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	22

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	41	35 - 135
Decachlorobiphenyl	65	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C1-2
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020729-02
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B3
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	45
Aroclor-1221	ND	90
Aroclor-1232	ND	45
Aroclor-1242	ND	45
Aroclor-1248	ND	45
Aroclor-1254	ND	45
Aroclor-1260	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	61	26 - 102
Decachlorobiphenyl	78	30 - 144

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PCB

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C1-2
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020729-02
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: OP0723-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	45
Parathion	ND	45
Dichlorvos	ND	45
Phorate	ND	45
Mevinphos	ND	45
Disulfoton	ND	45
Demeton	ND	45
Ethoprop	ND	45
Monocrotophos	ND	140
Naled	ND	45
Sulfotepp	ND	45
Diazinon	ND	45
Merphos	ND	45
Ronnel	ND	45
Malathion	ND	45
Chlorpyrifos	ND	45
EPN	ND	45
Trichloronate	ND	45
Stirofos	ND	45
Tokuthion	ND	45
Fensulfothion	ND	45
Bolstar	ND	45
Azinphos Methyl	ND	45
Fenthion	ND	45
Coumaphos	ND	45
TEPP	ND	90
Dimethoate	ND	45
Methyl Parathion	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	92	30 - 150
Triphenyl Phosphate	117	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plm

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C1-2
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020729-02
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachlorocyclohexane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Dicthylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C1-2
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020729-02
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C1-2
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020729-02
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	56	25 - 94
Phenol-d5	59	32 - 98
Nitrobenzene-d5	58	36 - 89
2-Fluorobiphenyl	71	32 - 94
2,4,6-Tribromophenol	77	38 - 114
Terphenyl-d14	76	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.

"Química Analítica no Gerenciamento Ambiental"

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207103

Smp #	Sample ID	Matrix	Date Sampled	Date Received
02	C1-2	Soil	07/18/02	07/19/02

Parameter	Units	02
%Solids	%	73
Organic Lead	mg/Kg	<0.5

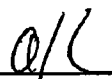
SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C2-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020729-03
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C2-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020729-03
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C2-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020729-03
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	53	25 - 94
Phenol-d5	56	32 - 98
Nitrobenzene-d5	54	36 - 89
2-Fluorobiphenyl	64	32 - 94
2,4,6-Tribromophenol	86	38 - 114
Terphenyl-d14	79	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C2-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020729-03
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B2
Final Extract Volume (mL): 2.0
Dilution Factor: 10
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	4.1
Telodrin	ND	33
alpha-BHC	ND	4.1
beta-BHC	ND	4.1
delta-BHC	ND	4.1
Heptachlor	ND	4.1
Aldrin	ND	4.1
Heptachlor Epoxide	ND	4.1
Endosulfan I	ND	4.1
Dieldrin	140	81
4,4'-DDE	76	8.1
Endrin	25	8.1
Endosulfan II	ND	8.1
4,4'-DDD	32	8.1
Endosulfan Sulfate	49	8.1
4,4'-DDT	74	8.1
Methoxychlor	ND	20
Endrin Ketone	29	8.1
Endrin Aldehyde	ND	8.1
alpha-Chlordane	ND	4.1
gamma-Chlordane	ND	4.1
Toxaphene	ND	200

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	70	35 - 135
Decachlorobiphenyl	85	25 - 143

*These limits are provided for advisory purposes.

Reported by: JS

Approved by: Ran

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C2-1

Date Sampled: 07/18/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020729-03

Date Sample Extracted: 07/23/02

Date Sample Analyzed: 07/31/02

Associated Method Blank: OP0723-B4

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected

+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	99	30 - 150
Triphenyl Phosphate	118	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C2-1

Date Sampled: 07/18/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020729-03

Date Sample Extracted: 07/31/02

Date Sample Analyzed: 08/01/02

Associated Method Blank: C0731-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	41	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C2-1

Date Sampled: 07/18/02

Laboratory ID: 020729-03

Date Sample Received: 7/19/2002

Date Analysis Completed: 08/05/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0805	93300	40
Antimony	0805	23	12
Arsenic	0805	ND	3
Barium	0805	ND	40
Cadmium	0805	ND	1
Chromium	0805	59	2
Copper	0805	8	5
Iron	0805	45100	20
Lead	0805	4	2
Manganese	0805	25	3
Mercury	0805	ND	0.1
Selenium	0805	ND	7
Silver	0805	ND	2
Sodium	0805	ND	1000
Zinc	0805	ND	12

ND = Not Detected

Reported by: ...

KB

Approved by: _____

EW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207103

Smp #	Sample ID	Matrix	Date Sampled	Date Received
03	C2-1	Soil	07/19/02	07/19/02

Parameter	Units	03
%Solids	%	82
Organic Lead	mg/Kg	<0.4

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C2-1
Date Sampled: 07/18/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020729-03
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B3
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	40
Aroclor-1221	ND	80
Aroclor-1232	ND	40
Aroclor-1242	ND	40
Aroclor-1248	ND	40
Aroclor-1254	ND	40
Aroclor-1260	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	88	26 - 102
Decachlorobiphenyl	75	30 - 144

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C2-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-04
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:  _____

Approved by:  _____

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C2-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-04
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C2-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-04
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	50	25 - 94
Phenol-d5	53	32 - 98
Nitrobenzene-d5	50	36 - 89
2-Fluorobiphenyl	64	32 - 94
2,4,6-Tribromophenol	73	38 - 114
Terphenyl-d14	74	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C2-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-04
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: P0723-B2
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.0
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	58	35 - 135
Decachlorobiphenyl	67	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C2-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-04
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: OP0723-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	40
Parathion	ND	40
Dichlorvos	ND	40
Phorate	ND	40
Mevinphos	ND	40
Disulfoton	ND	40
Demeton	ND	40
Ethoprop	ND	40
Monocrotophos	ND	120
Naled	ND	40
Sulfotepp	ND	40
Diazinon	ND	40
Merphos	ND	40
Ronnel	ND	40
Malathion	ND	40
Chlorpyrifos	ND	40
EPN	ND	40
Trichloronate	ND	40
Stirofos	ND	40
Tokuthion	ND	40
Fensulfothion	ND	40
Bolstar	ND	40
Azinphos Methyl	ND	40
Fenthion	ND	40
Coumaphos	ND	40
TEPP	ND	80
Dimethoate	ND	40
Methyl Parathion	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	119	30 - 150
Triphenyl Phosphate	98	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Rlen

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C2-2

Date Sampled: 07/19/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020729-04

Date Sample Extracted: 07/31/02

Date Sample Analyzed: 08/01/02

Associated Method Blank: C0731-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	40
Carbaryl	ND	40
Linuron	ND	40
Propanil	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	47	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C2-2

Date Sampled: 07/19/02

Laboratory ID: 020729-04

Date Sample Received: 7/19/2002

Date Analysis Completed: 08/05/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0805	13700	40
Antimony	0805	ND	12
Arsenic	0805	ND	3
Cadmium	0805	ND	1
Chromium	0805	18	2
Copper	0805	9	5
Iron	0805	16000	20
Lead	0805	9	2
Mangancsc	0805	52	3
Mercury	0805	ND	0.1
Selenium	0805	ND	7
Silver	0805	ND	2
Sodium	0805	ND	1000
Zinc	0805	35	12

ND = Not Detected

Reported by: KBF

Approved by: EW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207103

Smp #	Sample ID	Matrix	Date Sampled	Date Received
04	C2-2	Soil	07/19/02	07/19/02

Parameter	Units	04
%Solids	%	81
Organic Lead	mg/Kg	<0.5

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C2-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020729-04
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B3
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	40
Aroclor-1221	ND	80
Aroclor-1232	ND	40
Aroclor-1242	ND	40
Aroclor-1248	ND	40
Aroclor-1254	ND	40
Aroclor-1260	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	59	26 - 102
Decachlorobiphenyl	81	30 - 144

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C3-1
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020729-05
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C3-1
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020729-05
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	750	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C3-1
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020729-05
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	44	25 - 94
Phenol-d5	47	32 - 98
Nitrobenzene-d5	46	36 - 89
2-Fluorobiphenyl	57	32 - 94
2,4,6-Tribromophenol	73	38 - 114
Terphenyl-d14	71	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C3-1
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020729-05
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: P0723-B2
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	29	4.3
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	2.1	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.1
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	60	35 - 135
Decachlorobiphenyl	77	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C3-1
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020729-05
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: OP0723-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	42
Parathion	ND	42
Dichlorvos	ND	42
Phorate	ND	42
Mevinphos	ND	42
Disulfoton	ND	42
Demeton	ND	42
Ethoprop	ND	42
Monocrotophos	ND	130
Naled	ND	42
Sulfotepp	ND	42
Diazinon	ND	42
Merphos	ND	42
Ronnel	ND	42
Malathion	ND	42
Chlorpyrifos	ND	42
EPN	ND	42
Trichloronate	ND	42
Stirofos	ND	42
Tokuthion	ND	42
Fensulfothion	ND	42
Bolstar	ND	42
Azinphos Methyl	ND	42
Fenthion	ND	42
Coumaphos	ND	42
TEPP	ND	84
Dimethoate	ND	42
Methyl Parathion	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	61	30 - 150
Triphenyl Phosphate	55	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plan

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C3-1

Date Sampled: 07/19/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 78

Laboratory ID: 020729-05

Date Sample Extracted: 07/31/02

Date Sample Analyzed: 08/01/02

Associated Method Blank: C0731-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	42
Carbaryl	ND	42
Linuron	ND	42
Propanil	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	65	30 - 150

* For advisory purposes only.

Reported by: B

Approved by: Ran

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C3-1

Date Sampled: 07/19/02

Laboratory ID: 020729-05

Date Sample Received: 7/19/2002

Date Analysis Completed: 08/05/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0805	88200	40
Antimony	0805	29	12
Arsenic	0805	ND	3
Barium	0805	ND	40
Cadmium	0805	ND	1
Chromium	0805	72	2
Copper	0805	8	5
Iron	0805	51900	20
Lead	0805	8	2
Manganese	0805	85	3
Mercury	0805	ND	0.1
Selenium	0805	ND	7
Silver	0805	ND	2
Sodium	0805	ND	1000
Zinc	0805	ND	12

ND = Not Detected

Reported by: KDP

Approved by: EW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207103

Smp #	Sample ID	Matrix	Date Sampled	Date Received
05	C3-1	Soil	07/19/02	07/19/02

Parameter	Units	05
%Solids	%	86
Organic Lead	mg/Kg	<0.4

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C3-1
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020729-05
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B3
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	43
Aroclor-1221	ND	86
Aroclor-1232	ND	43
Aroclor-1242	ND	43
Aroclor-1248	ND	43
Aroclor-1254	ND	43
Aroclor-1260	ND	43

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	76	26 - 102
Decachlorobiphenyl	82	30 - 144

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C3-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020729-06
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C3-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020729-06
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Bcnzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C3-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020729-06
Date Sample Analyzed: 07/25/02
Date Sample Extracted: 07/23/02
Associated Method Blank: S0723-B5
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	43	25 - 94
Phenol-d5	46	32 - 98
Nitrobenzene-d5	46	36 - 89
2-Fluorobiphenyl	53	32 - 94
2,4,6-Tribromophenol	71	38 - 114
Terphenyl-d14	65	20 - 121

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C3-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020729-06
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: P0723-B2
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	5.8	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	1.0
4,4'-DDE	ND	1.0
Endrin	ND	1.0
Endosulfan II	ND	1.0
4,4'-DDD	ND	1.0
Endosulfan Sulfate	ND	1.0
4,4'-DDT	ND	1.0
Methoxychlor	ND	5.0
Endrin Ketone	ND	1.0
Endrin Aldehyde	ND	1.0
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	50

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	37	35 - 135
Decachlorobiphenyl	63	25 - 143

*These limits are provided for advisory purposes.

Reported by:

Approved by:

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C3-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020729-06
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/30/02
Associated Method Blank: OP0723-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	53
Parathion	ND	53
Dichlorvos	ND	53
Phorate	ND	53
Mevinphos	ND	53
Disulfoton	ND	53
Demeton	ND	53
Ethoprop	ND	53
Monocrotophos	ND	160
Naled	ND	53
Sulfotepp	ND	53
Diazinon	ND	53
Merphos	ND	53
Ronnel	ND	53
Malathion	ND	53
Chlorpyrifos	ND	53
EPN	ND	53
Trichloronate	ND	53
Stirofos	ND	53
Tokuthion	ND	53
Fensulfothion	ND	53
Bolstar	ND	53
Azinphos Methyl	ND	53
Fenthion	ND	53
Coumaphos	ND	53
TEPP	ND	110
Dimethoate	ND	53
Methyl Parathion	ND	53

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	59	30 - 150
Triphenyl Phosphate	55	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plm

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C3-2

Date Sampled: 07/19/02

Date Sample Received: 07/19/02

Matrix: Soil

Percent Solids: 63

Laboratory ID: 020729-06

Date Sample Extracted: 07/31/02

Date Sample Analyzed: 08/01/02

Associated Method Blank: C0731-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	53
Carbaryl	ND	53
Linuron	ND	53
Propanil	ND	53

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	31	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C3-2

Date Sampled: 07/19/02

Laboratory ID: 020729-06

Date Sample Received: 7/19/2002

Date Analysis Completed: 08/05/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0805	12600	40
Antimony	0805	55	12
Arsenic	0805	ND	3
Barium	0805	133	40
Cadmium	0805	ND	1
Chromium	0805	128	2
Copper	0805	28	5
Iron	0805	79900	20
Lead	0805	48	2
Manganese	0805	1960	3
Mercury	0805	ND	0.1
Selenium	0805	ND	7
Silver	0805	ND	2
Sodium	0805	ND	1000
Zinc	0805	34	12

ND = Not Detected

Reported by: _____

[Signature]

Approved by: _____

[Signature]

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207103

Smp #	Sample ID	Matrix	Date Sampled	Date Received
06	C3-2	Soil	07/19/02	07/19/02

Parameter	Units	06
%Solids	%	62
Organic Lead	mg/Kg	<0.6

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C3-2
Date Sampled: 07/19/02
Date Sample Received: 07/19/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020729-06
Date Sample Extracted: 07/23/02
Date Sample Analyzed: 07/31/02
Associated Method Blank: P0723-B3
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	53
Aroclor-1221	ND	110
Aroclor-1232	ND	53
Aroclor-1242	ND	53
Aroclor-1248	ND	53
Aroclor-1254	ND	53
Aroclor-1260	ND	53

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	67	26 - 102
Decachlorobiphenyl	67	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C4-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-01
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachlorocyclohexane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: mm

Approved by: OK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C4-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-01
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (pph) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2800	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C4-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-01
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	42	25 - 94
Phenol-d5	49	32 - 98
Nitrobenzene-d5	42	36 - 89
2-Fluorobiphenyl	48	32 - 94
2,4,6-Tribromophenol	45	38 - 114
Terphenyl-d14	59	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C4-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-01
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	2.7	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	6.5	0.85
4,4'-DDT	1.7	0.85
Methoxychlor	ND	2.0
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	51	35 - 135
Decachlorobiphenyl	82	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C4-1

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-01

Date Sample Extracted: 07/29/02

Date Sample Analyzed: 08/02/02

Associated Method Blank: OP0729-B4

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	29	30 - 150
Triphenyl Phosphate	43	30 - 150

* These limits are provided for advisory purposes.

Reported by: Xo

Approved by: Rlu

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C4-1

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-01

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	49	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C4-1

Date Sampled: 07/22/02

Laboratory ID: 020741-01

Date Sample Received: 7/26/2002

Date Analysis Completed: 08/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	91800✓	40
Antimony	0813	29	12
Arsenic	0813	ND	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	71	2
Copper	0813	10	5
Iron	0813	52400	20
Lead	0813	9	2
Manganese	0813	62	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	ND	12

ND = Not Detected

Reported by: CBP

Approved by: bw

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
01	C4-1	Soil	07/22/02	07/24/02

Parameter	Units	01
%Solids	%	82
Organic Lead	mg/Kg	<0.4

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C4-1

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-01

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	41
Atrazine	ND	41
Ametryn	ND	41
Terbutryn	ND	41
Planavin	ND	410

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	75	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C4-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-01
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	41
Aroclor-1221	ND	82
Aroclor-1232	ND	41
Aroclor-1242	ND	41
Aroclor-1248	ND	41
Aroclor-1254	ND	41
Aroclor-1260	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	61	26 - 102
Decachlorobiphenyl	88	30 - 144

* These limits are provided for advisory purposes.

Reported by: *RCM*

Approved by: *[Signature]*

Form I PCB

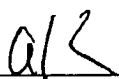
SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C4-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 64

Laboratory ID: 020741-02
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg (ppb)}$ +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachlorocyclohexane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenyl-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C4-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 64

Laboratory ID: 020741-02
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	3700	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C4-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 64

Laboratory ID: 020741-02
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	57	25 - 94
Phenol-d5	62	32 - 98
Nitrobenzene-d5	54	36 - 89
2-Fluorobiphenyl	62	32 - 94
2,4,6-Tribromophenol	54	38 - 114
Terphenyl-d14	70	20 - 121

* These limits are provided for advisory purposes.

Reported by: W

Approved by: Q/K

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C4-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 64

Laboratory ID: 020741-02
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Hcptachlor	ND	0.85
Aldrin	ND	0.85
Hcptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	1.0
4,4'-DDE	ND	1.0
Endrin	ND	1.0
Endosulfan II	ND	1.0
4,4'-DDD	ND	1.0
Endosulfan Sulfate	ND	1.0
4,4'-DDT	ND	1.0
Methoxychlor	ND	2.5
Endrin Ketone	ND	1.0
Endrin Aldehyde	ND	1.0
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	25

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	40	35 - 135
Decachlorobiphenyl	77	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHIELL
Client Sample ID: C4-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 64

Laboratory ID: 020741-02
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0729-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	52
Parathion	ND	52
Dichlorvos	ND	52
Phorate	ND	52
Mevinphos	ND	52
Disulfoton	ND	52
Demeton	ND	52
Ethoprop	ND	52
Monocrotophos	ND	160
Naled	ND	52
Sulfotepp	ND	52
Diazinon	ND	52
Merphos	ND	52
Ronnel	ND	52
Malathion	ND	52
Chlorpyrifos	ND	52
EPN	ND	52
Trichloronate	ND	52
Stirofos	ND	52
Tokuthion	ND	52
Fensulfothion	ND	52
Bolstar	ND	52
Azinphos Methyl	ND	52
Fenthion	ND	52
Coumaphos	ND	52
TEPP	ND	100
Dimethoate	ND	52
Methyl Parathion	ND	52

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	40	30 - 150
Triphenyl Phosphate	57	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Rlo

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C4-2

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 64

Laboratory ID: 020741-02

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	52
Carbaryl	ND	52
Linuron	ND	52
Propanil	ND	52

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	67	30 - 150

* For advisory purposes only.

Reported by: BS

Approved by: Plr

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C4-2

Date Sampled: 07/22/02

Date Sample Received: 7/26/2002

Matrix: Soil

Laboratory ID: 020741-02

Date Analysis Completed: 08/13/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	20200	40
Antimony	0813	63	12
Arsenic	0813	ND	3
Barium	0813	101	40
Cadmium	0813	ND	1
Chromium	0813	96	2
Copper	0813	13	5
Iron	0813	93900	20
Lead	0813	58	2
Manganese	0813	1630	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	39	12

ND = Not Detected

Reported by: KBF

Approved by: KW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
02	C4-2	Soil	07/22/02	07/24/02

Parameter	Units	02
%Solids	%	64
Organic Lead	mg/Kg	<0.6

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C4-2

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 64

Laboratory ID: 020741-02

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	52
Atrazine	ND	52
Ametryn	ND	52
Terbutryn	ND	52
Planavin	ND	520

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	81	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C4-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 64

Laboratory ID: 020741-02
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	52
Aroclor-1221	ND	100
Aroclor-1232	ND	52
Aroclor-1242	ND	52
Aroclor-1248	ND	52
Aroclor-1254	ND	52
Aroclor-1260	ND	52

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	86	26 - 102
Decachlorobiphenyl	81	30 - 144

* These limits are provided for advisory purposes.

Reported by: RL

Approved by: [Signature]

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C5-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-03
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C5-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-03
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1100	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C5-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-03
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	52	25 - 94
Phenol-d5	56	32 - 98
Nitrobenzene-d5	49	36 - 89
2-Fluorobiphenyl	59	32 - 94
2,4,6-Tribromophenol	49	38 - 114
Terphenyl-d14	69	20 - 121

* These limits are provided for advisory purposes.

Reported by: W

Approved by: alc

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C5-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-03
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.1
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	29	35 - 135
Decachlorobiphenyl	68	25 - 143

* These limits are provided for advisory purposes.

Reported by: B

Approved by: R

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C5-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-03
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0729-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	46	30 - 150
Triphenyl Phosphate	48	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plan

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C5-1

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-03

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	36	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C5-1

Date Sampled: 07/22/02

Laboratory ID: 020741-03

Date Sample Received: 7/26/2002

Date Analysis Completed: 08/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	83800	40
Antimony	0813	26	12
Arsenic	0813	ND	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	59	2
Copper	0813	9	5
Iron	0813	47300	20
Lead	0813	13	2
Manganese	0813	61	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	13	12

ND - Not Detected

Reported by: KBF

Approved by: KW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
03	C5-1	Soil	07/22/02	07/24/02

Parameter	Units	03
%Solids	%	82
Organic Lead	mg/Kg	<0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C5-1

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-03

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	41
Atrazine	ND	41
Amctryn	ND	41
Terbutryn	ND	41
Planavin	ND	410

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	41	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C5-1
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-03
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	41
Aroclor-1221	ND	82
Aroclor-1232	ND	41
Aroclor-1242	ND	41
Aroclor-1248	ND	41
Aroclor-1254	ND	41
Aroclor-1260	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	69	26 - 102
Decachlorobiphenyl	88	30 - 144

* These limits are provided for advisory purposes.

Reported by: PCN

Approved by: P

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C5-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020741-04
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C5-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020741-04
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2700	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C5-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020741-04
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

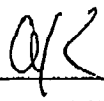
Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	38	25 - 94
Phenol-d5	44	32 - 98
Nitrobenzene-d5	33	36 - 89
2-Fluorobiphenyl	41	32 - 94
2,4,6-Tribromophenol	38	38 - 114
Terphenyl-d14	61	20 - 121

* These limits are provided for advisory purposes.

** Surrogate recovery is out of the QC limits or is diluted out (DL)

Reported by: 

Approved by: 

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C5-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020741-04
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.92
4,4'-DDE	ND	0.92
Endrin	ND	0.92
Endosulfan II	ND	0.92
4,4'-DDD	ND	0.92
Endosulfan Sulfate	ND	0.92
4,4'-DDT	ND	0.92
Methoxychlor	ND	2.3
Endrin Ketone	ND	0.92
Endrin Aldehyde	ND	0.92
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	23

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	40	35 - 135
Decachlorobiphenyl	71	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C5-2

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 72

Laboratory ID: 020741-04

Date Sample Extracted: 07/29/02

Date Sample Analyzed: 08/02/02

Associated Method Blank: OP0729-B4

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	46
Parathion	ND	46
Dichlorvos	ND	46
Phorate	ND	46
Mevinphos	ND	46
Disulfoton	ND	46
Demeton	ND	46
Ethoprop	ND	46
Monocrotophos	ND	140
Naled	ND	46
Sulfotepp	ND	46
Diazinon	ND	46
Merphos	ND	46
Ronnel	ND	46
Malathion	ND	46
Chlorpyrifos	ND	46
EPN	ND	46
Trichloronate	ND	46
Stirofos	ND	46
Tokuthion	ND	46
Fensulfothion	ND	46
Bolstar	ND	46
Azinphos Methyl	ND	46
Fenthion	ND	46
Coumaphos	ND	46
TEPP	ND	92
Dimethoate	ND	46
Methyl Parathion	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	49	30 - 150
Triphenyl Phosphate	70	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: RCN

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C5-2

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 72

Laboratory ID: 020741-04

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	46
Carbaryl	ND	46
Linuron	ND	46
Propanil	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	61	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C5-2

Date Sampled: 07/22/02

Laboratory ID: 020741-04

Date Sample Received: 7/26/2002

Date Analysis Completed: 08/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	15700	40
Antimony	0813	71	12
Arsenic	0813	10	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	129	2
Copper	0813	28	5
Iron	0813	101000	20
Lead	0813	26	2
Manganese	0813	332	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	4	2
Sodium	0813	ND	1000
Zinc	0813	14	12

ND = Not Detected

Reported by: RSF

Approved by: KW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
04	C5-2	Soil	07/22/02	07/24/02

Parameter	Units	04
%Solids	%	72
Organic Lead	mg/Kg	<0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C5-2

Date Sampled: 07/22/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 72

Laboratory ID: 020741-04

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	46
Atrazine	ND	46
Ametryn	ND	46
Terbutryn	ND	46
Planavin	ND	460

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	100	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C5-2
Date Sampled: 07/22/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020741-04
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	46
Aroclor-1221	ND	92
Aroclor-1232	ND	46
Aroclor-1242	ND	46
Aroclor-1248	ND	46
Aroclor-1254	ND	46
Aroclor-1260	ND	46

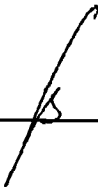
ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	83	26 - 102
Decachlorobiphenyl	83	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C6-1
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-05
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

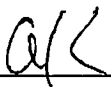
Client: CEIMIC-SHELL
Client Sample ID: C6-1
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-05
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1100	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C6-1
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-05
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	49	25 - 94
Phenol-d5	55	32 - 98
Nitrobenzene-d5	45	36 - 89
2-Fluorobiphenyl	54	32 - 94
2,4,6-Tribromophenol	46	38 - 114
Terphenyl-d14	74	20 - 121

* These limits are provided for advisory purposes.

Reported by: *W*

Approved by: *AK*

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C6-1
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-05
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	11	0.85
4,4'-DDE	ND	0.85
Endrin	36	8.1
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	4.8	0.85
Methoxychlor	ND	2.0
Endrin Ketone	1.2	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	44	35 - 135
Decachlorobiphenyl	74	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PEST

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C6-1
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-05
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0729-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	40	30 - 150
Triphenyl Phosphate	69	30 - 150

* These limits are provided for advisory purposes.

Reported by: L

Approved by: Plm

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C6-1

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-05

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	43	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C6-1

Date Sampled: 07/23/02

Date Sample Received: 7/26/2002

Matrix: Soil

Laboratory ID: 020741-05

Date Analysis Completed: 08/13/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	84000	40
Antimony	0813	25	12
Arsenic	0813	ND	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	56	2
Copper	0813	6	5
Iron	0813	45400	20
Lead	0813	10	2
Manganese	0813	45	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	ND	12

ND = Not Detected

Reported by: CBF

Approved by: bw

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.

"Química Analítica no Gerenciamento Ambiental"

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
05	C6-1	Soil	07/23/02	07/24/02

Parameter	Units	05
%Solids	%	79
Organic Lead	mg/Kg	<0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C6-1

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020741-05

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	41
Atrazine	ND	41
Ametryn	ND	41
Terbutryn	ND	41
Planavin	ND	410

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	34	30 - 150

* For advisory purposes only.

Reported by: *B*

Approved by: *Rem*

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C6-1
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020741-05
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	41
Aroclor-1221	ND	82
Aroclor-1232	ND	41
Aroclor-1242	ND	41
Aroclor-1248	ND	41
Aroclor-1254	ND	41
Aroclor-1260	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	63	26 - 102
Decachlorobiphenyl	81	30 - 144

* These limits are provided for advisory purposes.

Reported by: PLM

Approved by: [Signature]

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C6-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020741-06
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C6-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020741-06
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2700	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: W

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C6-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020741-06
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	55	25 - 94
Phenol-d5	58	32 - 98
Nitrobenzene-d5	51	36 - 89
2-Fluorobiphenyl	63	32 - 94
2,4,6-Tribromophenol	42	38 - 114
Terphenyl-d14	63	20 - 121

* These limits are provided for advisory purposes.

Reported by: WM

Approved by: AK

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C6-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020741-06
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	0.92	1.0
4,4'-DDE	ND	1.0
Endrin	ND	1.0
Endosulfan II	ND	1.0
4,4'-DDD	ND	1.0
Endosulfan Sulfate	ND	1.0
4,4'-DDT	ND	1.0
Methoxychlor	ND	2.5
Endrin Ketone	ND	1.0
Endrin Aldehyde	ND	1.0
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	25

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	46	35 - 135
Decachlorobiphenyl	71	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C6-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020741-06
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0729-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	51
Parathion	ND	51
Dichlorvos	ND	51
Phorate	ND	51
Mevinphos	ND	51
Disulfoton	ND	51
Demeton	ND	51
Ethoprop	ND	51
Monocrotophos	ND	150
Naled	ND	51
Sulfotepp	ND	51
Diazinon	ND	51
Merphos	ND	51
Ronnel	ND	51
Malathion	ND	51
Chlorpyrifos	ND	51
EPN	ND	51
Trichloronate	ND	51
Stirofos	ND	51
Tokuthion	ND	51
Fensulfothion	ND	51
Bolstar	ND	51
Azinphos Methyl	ND	51
Fenthion	ND	51
Coumaphos	ND	51
TEPP	ND	100
Dimethoate	ND	51
Methyl Parathion	ND	51

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	40	30 - 150
Triphenyl Phosphate	58	30 - 150

* These limits are provided for advisory purposes.

Reported by: *L*

Approved by: *RLM*

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C6-2

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 65

Laboratory ID: 020741-06

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	51
Carbaryl	ND	51
Linuron	ND	51
Propanil	ND	51

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	50	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C6-2

Date Sampled: 07/23/02

Laboratory ID: 020741-06

Date Sample Received: 7/26/2002

Date Analysis Completed: 08/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	13600	40
Antimony	0813	79	12
Arsenic	0813	ND	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	134	2
Copper	0813	16	5
Iron	0813	113000	20
Lead	0813	48	2
Manganese	0813	193	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	65	12

ND = Not Detected

Reported by: CBF

Approved by: KW

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
06	C6-2	Soil	07/23/02	07/24/02

Parameter	Units	06
%Solids	%	67
Organic Lead	mg/Kg	<0.6

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C6-2

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 65

Laboratory ID: 020741-06

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	51
Atrazine	ND	51
Ametryn	ND	51
Terbutryn	ND	51
Planavin	ND	510

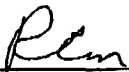
ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	60	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C6-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020741-06
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	51
Aroclor-1221	ND	100
Aroclor-1232	ND	51
Aroclor-1242	ND	51
Aroclor-1248	ND	51
Aroclor-1254	ND	51
Aroclor-1260	ND	51

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	70	26 - 102
Decachlorobiphenyl	80	30 - 144

* These limits are provided for advisory purposes.

Reported by: RLM

Approved by: B

Form I PCB

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C7-1
Date Sampled: 07/23/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 77

Laboratory ID: 020741-07
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	1.3 -	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	4.9 -	0.85
Dieldrin	22 -	8.5
4,4'-DDE	8.4 -	0.85
Endrin	7.8 -	0.85
Endosulfan II	ND	0.85
4,4'-DDD	9.0 -	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	7.4 -	0.85
Methoxychlor	ND	2.1
Endrin Ketone	1.9 -	0.85
Endrin Aldehyde	6.9 -	0.85
alpha-Chlordane	1.5 -	0.85
gamma-Chlordane	ND	0.85
Toxaphene	220	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	55	35 - 135
Decachlorobiphenyl	63	25 - 143

*These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PEST

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C7-1
Date Sampled: 07/23/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 77

Laboratory ID: 020741-07
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0729-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	43
Parathion	ND	43
Dichlorvos	ND	43
Phorate	ND	43
Mevinphos	ND	43
Disulfoton	ND	43
Demeton	ND	43
Ethoprop	ND	43
Monocrotophos	ND	130
Naled	ND	43
Sulfotepp	ND	43
Diazinon	ND	43
Merphos	ND	43
Ronnel	ND	43
Malathion	ND	43
Chlorpyrifos	ND	43
EPN	ND	43
Trichloronate	ND	43
Stirofos	ND	43
Tokuthion	ND	43
Fensulfothion	ND	43
Bolstar	ND	43
Azinphos Methyl	ND	43
Fenthion	ND	43
Coumaphos	ND	43
TEPP	ND	86
Dimethoate	ND	43
Methyl Parathion	ND	43

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	45	30 - 150
Triphenyl Phosphate	69	30 - 150

* These limits are provided for advisory purposes.

Reported by: *L*

Approved by: *RCM*

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C7-1

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 77

Laboratory ID: 020741-07

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	43
Carbaryl	ND	43
Linuron	ND	43
Propanil	ND	43

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	14	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C7-1

Date Sampled: 07/23/02

Laboratory ID: 020741-07

Date Sample Received: 7/26/2002

Date Analysis Completed: 08/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	103000	40
Antimony	0813	39	12
Arsenic	0813	ND	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	73	2
Copper	0813	13	5
Iron	0813	66800	20
Lead	0813	7	2
Manganese	0813	26	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	15	12

ND = Not Detected

Reported by: C. K. F.

Approved by: Kew

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.

"Química Analítica no Gerenciamento Ambiental"

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
07	C7-1	Soil	07/23/02	07/24/02

Parameter	Units	07
%Solids	%	78
Organic Lead	mg/Kg	<0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C7-1

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 77

Laboratory ID: 020741-07

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	43
Atrazine	ND	43
Ametryn	ND	43
Terbutryn	ND	43
Planavin	ND	430

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	82	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C7-1
Date Sampled: 07/23/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 77

Laboratory ID: 020741-07
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	43
Aroclor-1221	ND	86
Aroclor-1232	ND	43
Aroclor-1242	ND	43
Aroclor-1248	ND	43
Aroclor-1254	ND	43
Aroclor-1260	ND	43

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	94	26 - 102
Decachlorobiphenyl	65	30 - 144

* These limits are provided for advisory purposes.

Reported by: RLM

Approved by: B

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C7-1
Date Sampled: 07/23/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 77

Laboratory ID: 020741-07
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

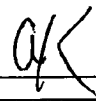
Client: CEIMIC-SHELL
Client Sample ID: C7-1
Date Sampled: 07/23/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 77

Laboratory ID: 020741-07
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2000	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C7-1
Date Sampled: 07/23/02
Date Sample Received: 07/26/02
Matrix: Soil
Percent Solids: 77

Laboratory ID: 020741-07
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	59	25 - 94
Phenol-d5	63	32 - 98
Nitrobenzene-d5	51	36 - 89
2-Fluorobiphenyl	65	32 - 94
2,4,6-Tribromophenol	50	38 - 114
Terphenyl-d14	75	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C7-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020741-08
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C7-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020741-08
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1700	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C7-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020741-08
Date Sample Analyzed: 07/31/02
Date Sample Extracted: 07/29/02
Associated Method Blank: S0729-B1
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	51	25 - 94
Phenol-d5	57	32 - 98
Nitrobenzene-d5	50	36 - 89
2-Fluorobiphenyl	59	32 - 94
2,4,6-Tribromophenol	42	38 - 114
Terphenyl-d14	68	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C7-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020741-08
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	2.1 -	0.90
4,4'-DDE	2.6	0.90
Endrin	ND	0.90
Endosulfan II	ND	0.90
4,4'-DDD	ND	0.90
Endosulfan Sulfate	ND	0.90
4,4'-DDT	2.2	0.90
Methoxychlor	ND	2.3
Endrin Ketone	ND	0.90
Endrin Aldehyde	2.3 -	0.90
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	110	23

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	29	35 - 135
Decachlorobiphenyl	70	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PEST

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C7-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020741-08
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0729-B4
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	45
Parathion	ND	45
Dichlorvos	ND	45
Phorate	ND	45
Mevinphos	ND	45
Disulfoton	ND	45
Demeton	ND	45
Ethoprop	ND	45
Monocrotophos	ND	140
Naled	ND	45
Sulfotepp	ND	45
Diazinon	ND	45
Merphos	ND	45
Ronnel	ND	45
Malathion	ND	45
Chlorpyrifos	ND	45
EPN	ND	45
Trichloronate	ND	45
Stirofos	ND	45
Tokuthion	ND	45
Fensulfothion	ND	45
Bolstar	ND	45
Azinphos Methyl	ND	45
Fenthion	ND	45
Coumaphos	ND	45
TEPP	ND	90
Dimethoate	ND	45
Methyl Parathion	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	38	30 - 150
Triphenyl Phosphate	62	30 - 150

* These limits are provided for advisory purposes.

Reported by: *LS*

Approved by: *PLN*

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C7-2

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020741-08

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/06/02

Associated Method Blank: C0802-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	45
Carbaryl	ND	45
Linuron	ND	45
Propanil	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	61	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C7-2

Date Sampled: 07/23/02

Date Sample Received: 7/26/2002

Matrix: Soil

Laboratory ID: 020741-08

Date Analysis Completed: 08/13/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0813	15600	40
Antimony	0813	ND	12
Arsenic	0813	ND	3
Barium	0813	ND	40
Cadmium	0813	ND	1
Chromium	0813	4	2
Copper	0813	ND	5
Iron	0813	15800	20
Lead	0813	24	2
Manganese	0813	218	3
Mercury	0813	ND	0.1
Selenium	0813	ND	7
Silver	0813	ND	2
Sodium	0813	ND	1000
Zinc	0813	26	12

ND = Not Detected

Reported by: KBF

Approved by: Kew

CEIMIC ANÁLISES AMBIENTAIS S/C LTDA.*"Química Analítica no Gerenciamento Ambiental"***Metals Results**

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207115

Smp #	Sample ID	Matrix	Date Sampled	Date Received
08	C7-2	Soil	07/23/02	07/24/02

Parameter	Units	08
%Solids	%	75
Organic Lead	mg/Kg	<0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C7-2

Date Sampled: 07/23/02

Date Sample Received: 07/26/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020741-08

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/07/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	45
Atrazine	ND	45
Ametryn	ND	45
Terbutryn	ND	45
Planavin	ND	450

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	42	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C7-2
Date Sampled: 07/23/02
Date Sample Received: 07/27/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020741-08
Date Sample Extracted: 07/29/02
Date Sample Analyzed: 08/01/02
Associated Method Blank: P0729-B3
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	45
Aroclor-1221	ND	90
Aroclor-1232	ND	45
Aroclor-1242	ND	45
Aroclor-1248	ND	45
Aroclor-1254	ND	45
Aroclor-1260	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	67	26 - 102
Decachlorobiphenyl	67	30 - 144

* These limits are provided for advisory purposes.

Reported by: RCM

Approved by: [Signature]

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C8-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020743-01
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:  _____

Approved by:  _____

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C8-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020743-01
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1700	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: W

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C8-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020743-01
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	42	25 - 94
Phenol-d5	46	32 - 98
Nitrobenzene-d5	43	36 - 89
2-Fluorobiphenyl	50	32 - 94
2,4,6-Tribromophenol	74	38 - 114
Terphenyl-d14	58	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C8-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020743-01
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/03/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 5
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	1.9
Telodrin	ND	33
alpha-BHC	ND	1.9
beta-BHC	ND	1.9
delta-BHC	ND	1.9
Heptachlor	ND	1.9
Aldrin	ND	1.9
Heptachlor Epoxide	ND	1.9
Endosulfan I	ND	1.9
Dieldrin	190	38
4,4'-DDE	34	3.8
Endrin	69	3.8
Endosulfan II	43	3.8
4,4'-DDD	55	3.8
Endosulfan Sulfate	ND	3.8
4,4'-DDT	44	3.8
Methoxychlor	ND	9.5
Endrin Ketone	18	3.8
Endrin Aldehyde	68	38
alpha-Chlordane	ND	1.9
gamma-Chlordane	ND	1.9
Toxaphene	3000	95

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	37	35 - 135
Decachlorobiphenyl	55	25 - 143

* These limits are provided for advisory purposes.

Reported by: *B*

Approved by: *Plm*

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C8-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020743-01
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/03/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	38
Parathion	ND	38
Dichlorvos	ND	38
Phorate	ND	38
Mevinphos	ND	38
Disulfoton	ND	38
Demeton	ND	38
Ethoprop	ND	38
Monocrotophos	ND	110
Naled	ND	38
Sulfotepp	ND	38
Diazinon	ND	38
Merphos	ND	38
Ronnel	ND	38
Malathion	ND	38
Chlorpyrifos	ND	38
EPN	ND	38
Trichloronate	ND	38
Stirofos	ND	38
Tokuthion	ND	38
Fensulfothion	ND	38
Bolstar	ND	38
Azinphos Methyl	ND	38
Fenthion	ND	38
Coumaphos	ND	38
TEPP	ND	76
Dimethoate	ND	38
Methyl Parathion	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	48	30 - 150
Triphenyl Phosphate	78	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C8-1

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 87

Laboratory ID: 020743-01

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	38
Carbaryl	ND	38
Linuron	ND	38
Propanil	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	28	30 - 150

* For advisory purposes only.

Reported by: *fs*

Approved by: *RCM*

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C8-1

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Laboratory ID: 020743-01

Date Analysis Completed: 08/15/02

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	47600	40
Antimony	0815	17	12
Arsenic	0815	ND	3
Barium	0815	ND	40
Cadmium	0815	ND	1
Chromium	0815	40	2
Copper	0815	13	5
Iron	0815	37200	20
Lead	0815	28	2
Manganese	0815	241	3
Mercury	0815	0.2	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	43	12

ND = Not Detected

Reported by: _____

lcw

Approved by: _____

B.P

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
01	C8-1	Soil	07/24/02	07/26/02

Parameter	Units	01	Quant. Limit
%Solids	%	85	
Organic Lead	mg/Kg	ND	0.4

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C8-1

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 87

Laboratory ID: 020743-01

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/10/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	38
Atrazine	ND	38
Ametryn	ND	38
Terbutryn	ND	38
Planavin	ND	380

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	80	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C8-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020743-01
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	38
Aroclor-1221	ND	76
Aroclor-1232	ND	38
Aroclor-1242	ND	38
Aroclor-1248	ND	38
Aroclor-1254	ND	38
Aroclor-1260	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	66	26 - 102
Decachlorobiphenyl	80	30 - 144

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PCB

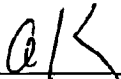
SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C8-2
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020743-02
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachlorocyclohexane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C8-2
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020743-02
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	890	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C8-2
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020743-02
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophcnol	52	25 - 94
Phenol-d5	60	32 - 98
Nitrobenzene-d5	47	36 - 89
2-Fluorobiphenyl	47	32 - 94
2,4,6-Tribromophenol	60	38 - 114
Terphenyl-d14	47	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C8-2
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020743-02
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	2.4	1.0
4,4'-DDE	ND	1.0
Endrin	ND	1.0
Endosulfan II	ND	1.0
4,4'-DDD	ND	1.0
Endosulfan Sulfate	ND	1.0
4,4'-DDT	ND	1.0
Methoxychlor	ND	2.5
Endrin Ketone	ND	1.0
Endrin Aldehyde	ND	1.0
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	25

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	48	35 - 135
Decachlorobiphenyl	63	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C8-2
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 65

Laboratory ID: 020743-02
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	51
Parathion	ND	51
Dichlorvos	ND	51
Phorate	ND	51
Mevinphos	ND	51
Disulfoton	ND	51
Demeton	ND	51
Ethoprop	ND	51
Monocrotophos	ND	150
Naled	ND	51
Sulfotepp	ND	51
Diazinon	ND	51
Merphos	ND	51
Ronnel	ND	51
Malathion	ND	51
Chlorpyrifos	ND	51
EPN	ND	51
Trichloronate	ND	51
Stirofos	ND	51
Tokuthion	ND	51
Fensulfothion	ND	51
Bolstar	ND	51
Azinphos Methyl	ND	51
Fenthion	ND	51
Coumaphos	ND	51
TEPP	ND	100
Dimethoate	ND	51
Methyl Parathion	ND	51

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	30	30 - 150
Triphenyl Phosphate	46	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: R

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C8-2

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 65

Laboratory ID: 020743-02

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/08/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	51
Carbaryl	ND	51
Linuron	ND	51
Propanil	ND	51

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	55	30 - 150

* For advisory purposes only.

Reported by: B

Approved by: Plan

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C8-2

Date Sampled: 07/24/02

Laboratory ID: 020743-02

Date Sample Received: 07/29/02

Date Analysis Completed: 08/15/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	14600	40
Antimony	0815	96	12
Arsenic	0815	ND	3
Barium	0815	ND	40
Cadmium	0815	ND	1
Chromium	0815	232	2
Copper	0815	66	5
Iron	0815	168000	20
Lead	0815	42	2
Manganese	0815	120	3
Mercury	0815	ND	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	50	12

ND = Not Detected

Reported by: kw

Approved by: BP

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
02	C8-2	Soil	07/24/02	07/26/02

Parameter	Units	02	Quant. Limit
%Solids	%	64	
Organic Lead	mg/Kg	ND	0.6

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C8-2

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 65

Laboratory ID: 020743-02

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	51
Atrazine	ND	51
Ametryn	ND	51
Terbutryn	ND	51
Planavin	ND	510

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	100	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL

Client Sample ID: C8-2

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 65

Laboratory ID: 020743-02

Date Sample Extracted: 08/03/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: PCB0803-B1

Final Extract Volume (mL): 10.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	50
Aroclor-1221	ND	100
Aroclor-1232	ND	50
Aroclor-1242	ND	50
Aroclor-1248	ND	50
Aroclor-1254	ND	50
Aroclor-1260	ND	50

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	55	26 - 102
Decachlorobiphenyl	70	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C9-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020743-03
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C9-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020743-03
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2900	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibcnzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C9-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020743-03
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	46	25 - 94
Phenol-d5	52	32 - 98
Nitrobenzene-d5	43	36 - 89
2-Fluorobiphenyl	44	32 - 94
2,4,6-Tribromophenol	59	38 - 114
Terphenyl-d14	49	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C9-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020743-03
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	0.92	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.0
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	47	35 - 135
Decachlorobiphenyl	60	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C9-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020743-03
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	26	30 - 150
Triphenyl Phosphate	28	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plu

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C9-1

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020743-03

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	100	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C9-1

Date Sampled: 07/24/02

Laboratory ID: 020743-03

Date Sample Received: 07/29/02

Date Analysis Completed: 08/15/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	73800	40
Antimony	0815	23	12
Arsenic	0815	ND	3
Barium	0815	ND	40
Cadmium	0815	ND	1
Chromium	0815	57	2
Copper	0815	12	5
Iron	0815	51400	20
Lead	0815	7	2
Manganese	0815	66	3
Mercury	0815	ND	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	ND	12

ND = Not Detected

Reported by: EW

Approved by: BP

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
03	C9-1	Soil	07/24/02	07/26/02

Parameter	Units	03	Quant. Limit
%Solids	%	82	
Organic Lead	mg/Kg	ND	0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C9-1

Date Sampled: 07/24/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020743-03

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	40
Atrazine	ND	40
Ametryn	ND	40
Terbutryn	ND	40
Planavin	ND	400

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	88	30 - 150

* For advisory purposes only.

Reported by: *B*

Approved by: *Ran*

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C9-1
Date Sampled: 07/24/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020743-03
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	41
Aroclor-1221	ND	82
Aroclor-1232	ND	41
Aroclor-1242	ND	41
Aroclor-1248	ND	41
Aroclor-1254	ND	41
Aroclor-1260	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	63	26 - 102
Decachlorobiphenyl	69	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C9-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 020743-04
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: W

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C9-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 020743-04
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1400	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: _____

Approved by: _____

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C9-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 020743-04
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	42	25 - 94
Phenol-d5	48	32 - 98
Nitrobenzene-d5	44	36 - 89
2-Fluorobiphenyl	46	32 - 94
2,4,6-Tribromophenol	58	38 - 114
Terphenyl-d14	53	20 - 121

* These limits are provided for advisory purposes.

Reported by: *lm*

Approved by: *alc*

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C9-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 020743-04
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.1
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	43	35 - 135
Decachlorobiphenyl	61	25 - 143

* These limits are provided for advisory purposes.

Reported by: *B*

Approved by: *Plm*

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C9-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 020743-04
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Counaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	31	30 - 150
Triphenyl Phosphate	53	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C9-2

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 80

Laboratory ID: 020743-04

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	56	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C9-2

Date Sampled: 07/25/02

Laboratory ID: 020743-04

Date Sample Received: 07/29/02

Date Analysis Completed: 08/15/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	20000	40
Antimony	0815	44	12
Arsenic	0815	ND	3
Barium	0815	905	40
Cadmium	0815	ND	1
Chromium	0815	43	2
Copper	0815	25	5
Iron	0815	80600	20
Lead	0815	14	2
Manganese	0815	6730	3
Mercury	0815	ND	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	52	12

ND = Not Detected

Reported by: _____

KW

Approved by: _____

BP

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
04	C9-2	Soil	07/25/02	07/26/02

Parameter	Units	04	Quant. Limit
%Solids	%	61	
Organic Lead	mg/Kg	ND	0.6

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C9-2

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 80

Laboratory ID: 020743-04

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	42
Atrazine	ND	42
Ametryn	ND	42
Terbutryn	ND	42
Planavin	ND	420

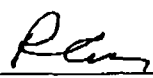
ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	58	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C9-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 020743-04
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	41
Aroclor-1221	ND	82
Aroclor-1232	ND	41
Aroclor-1242	ND	41
Aroclor-1248	ND	41
Aroclor-1254	ND	41
Aroclor-1260	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	42	26 - 102
Decachlorobiphenyl	65	30 - 144

* These limits are provided for advisory purposes.

Reported by: *B*

Approved by: *Rlan*

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C10-1
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020743-05
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C10-1
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020743-05
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	970	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: W

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C10-1
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020743-05
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	64	25 - 94
Phenol-d5	70	32 - 98
Nitrobenzene-d5	65	36 - 89
2-Fluorobiphenyl	70	32 - 94
2,4,6-Tribromophenol	77	38 - 114
Terphenyl-d14	60	20 - 121

* These limits are provided for advisory purposes.

Reported by: W

Approved by: AK

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C10-1
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020743-05
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	14	8.0
4,4'-DDE	1.2	0.85
Endrin	7.1	0.85
Endosulfan II	0.90	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	5.3	0.85
Methoxychlor	ND	2.0
Endrin Ketone	2.1	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	48	35 - 135
Decachlorobiphenyl	54	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C10-1
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020743-05
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/03/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	40
Parathion	ND	40
Dichlorvos	ND	40
Phorate	ND	40
Mevinphos	ND	40
Disulfoton	ND	40
Demeton	ND	40
Ethoprop	ND	40
Monocrotophos	ND	120
Naled	ND	40
Sulfotepp	ND	40
Diazinon	ND	40
Merphos	ND	40
Ronnel	ND	40
Malathion	ND	40
Chlorpyrifos	ND	40
EPN	ND	40
Trichloronate	ND	40
Stirofos	ND	40
Tokuthion	ND	40
Fensulfothion	ND	40
Bolstar	ND	40
Azinphos Methyl	ND	40
Fenthion	ND	40
Coumaphos	ND	40
TEPP	ND	80
Dimethoate	ND	40
Methyl Parathion	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	51	30 - 150
Triphenyl Phosphate	74	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Ran

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C10-1

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 83

Laboratory ID: 020743-05

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	40
Carbaryl	ND	40
Linuron	ND	40
Propanil	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	23	30 - 150

* For advisory purposes only.

Reported by: *f*

Approved by: *PLM*

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C10-1

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Laboratory ID: 020743-05

Date Analysis Completed: 08/15/02

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	60600	40
Antimony	0815	17	12
Arsenic	0815	ND	3
Barium	0815	ND	40
Cadmium	0815	ND	1
Chromium	0815	55	2
Copper	0815	16	5
Iron	0815	39600	20
Lead	0815	28	2
Manganese	0815	85	3
Mercury	0815	ND	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	20	12

ND = Not Detected

Reported by: kw

Approved by: Bf

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
 Project# : 1227
 Project Name : BIPI
 Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
05	C10-1	Soil	07/25/02	07/26/02
Parameter	Units	05	Quant. Limit	
%Solids	%	86		
Organic Lead	mg/Kg	ND		0.4

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C10-1

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 83

Laboratory ID: 020743-05

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/10/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	40
Atrazine	ND	40
Ametryn	ND	40
Terbutryn	ND	40
Planavin	ND	400

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	81	30 - 150

* For advisory purposes only.

Reported by: *B*

Approved by: *R*

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C10-1
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020743-05
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	40
Aroclor-1221	ND	80
Aroclor-1232	ND	40
Aroclor-1242	ND	40
Aroclor-1248	ND	40
Aroclor-1254	ND	40
Aroclor-1260	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	75	26 - 102
Decachlorobiphenyl	69	30 - 144

* These limits are provided for advisory purposes.

Reported by: *B*

Approved by: *RCM*

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C10-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020743-06
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: W

Approved by: ce/K

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C10-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020743-06
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (pph) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2400	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C10-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020743-06
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	56	25 - 94
Phenol-d5	64	32 - 98
Nitrobenzene-d5	57	36 - 89
2-Fluorobiphenyl	61	32 - 94
2,4,6-Tribromophenol	69	38 - 114
Terphenyl-d14	57	20 - 121

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C10-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020743-06
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	1.7	1.1
4,4'-DDE	ND	1.1
Endrin	1.1	1.1
Endosulfan II	ND	1.1
4,4'-DDD	ND	1.1
Endosulfan Sulfate	ND	1.1
4,4'-DDT	ND	1.1
Methoxychlor	ND	2.8
Endrin Ketone	ND	1.1
Endrin Aldehyde	ND	1.1
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	28

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	38	35 - 135
Decachlorobiphenyl	61	25 - 143

*These limits are provided for advisory purposes.

Reported by: 

Approved by: 

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C10-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020743-06
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	53
Parathion	ND	53
Dichlorvos	ND	53
Phorate	ND	53
Mevinphos	ND	53
Disulfoton	ND	53
Demeton	ND	53
Ethoprop	ND	53
Monocrotophos	ND	160
Naled	ND	53
Sulfotepp	ND	53
Diazinon	ND	53
Merphos	ND	53
Ronnel	ND	53
Malathion	ND	53
Chlorpyrifos	ND	53
EPN	ND	53
Trichloronate	ND	53
Stirofos	ND	53
Tokuthion	ND	53
Fensulfothion	ND	53
Bolstar	ND	53
Azinphos Methyl	ND	53
Fenthion	ND	53
Coumaphos	ND	53
TEPP	ND	110
Dimethoate	ND	53
Methyl Parathion	ND	53

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	40	30 - 150
Triphenyl Phosphate	83	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C10-2

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 63

Laboratory ID: 020743-06

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	53
Carbaryl	ND	53
Linuron	ND	53
Propanil	ND	53

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	57	30 - 150

* For advisory purposes only.

Reported by: B

Approved by: Ren

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C10-2

Date Sampled: 07/25/02

Laboratory ID: 020743-06

Date Sample Received: 07/29/02

Date Analysis Completed: 08/15/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	17200	40
Antimony	0815	51	12
Arsenic	0815	ND	3
Barium	0815	ND	40
Cadmium	0815	ND	1
Chromium	0815	93	2
Copper	0815	44	5
Iron	0815	92600	20
Lead	0815	22	2
Manganese	0815	119	3
Mercury	0815	ND	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	24	12

ND = Not Detected

Reported by: kw

Approved by: BP

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
06	C10-2	Soil	07/25/02	07/26/02

Parameter	Units	06	Quant. Limit
%Solids	%	87	
Organic Lead	mg/Kg	ND	0.4

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C10-2

Date Sampled: 07/25/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 63

Laboratory ID: 020743-06

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	52
Atrazine	ND	52
Ametryn	ND	52
Terbutryn	ND	52
Planavin	ND	520

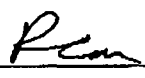
ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	76	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C10-2
Date Sampled: 07/25/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 63

Laboratory ID: 020743-06
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	53
Aroclor-1221	ND	110
Aroclor-1232	ND	53
Aroclor-1242	ND	53
Aroclor-1248	ND	53
Aroclor-1254	ND	53
Aroclor-1260	ND	53

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	57	26 - 102
Decachlorobiphenyl	67	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C11-1
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020743-07
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C11-1
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020743-07
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	820	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(h)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: W

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C11-1
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020743-07
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	41	25 - 94
Phenol-d5	50	32 - 98
Nitrobenzene-d5	39	36 - 89
2-Fluorobiphenyl	44	32 - 94
2,4,6-Tribromophenol	71	38 - 114
Terphenyl-d14	53	20 - 121

* These limits are provided for advisory purposes.

Reported by: W

Approved by: ce/K

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C11-1
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020743-07
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	18	9.1
4,4'-DDE	2.2	0.91
Endrin	ND	0.91
Endosulfan II	ND	0.91
4,4'-DDD	2.2	0.91
Endosulfan Sulfate	ND	0.91
4,4'-DDT	7.0	0.91
Methoxychlor	ND	2.3
Endrin Ketone	ND	0.91
Endrin Aldehyde	ND	0.91
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	23

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	30	35 - 135
Decachlorobiphenyl	30	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C11-1

Date Sampled: 07/26/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 73

Laboratory ID: 020743-07

Date Sample Extracted: 07/30/02

Date Sample Analyzed: 08/03/02

Associated Method Blank: OP0730-B1

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	46
Parathion	ND	46
Dichlorvos	ND	46
Phorate	ND	46
Mevinphos	ND	46
Disulfoton	ND	46
Demeton	ND	46
Ethoprop	ND	46
Monocrotophos	ND	140
Naled	ND	46
Sulfotepp	ND	46
Diazinon	ND	46
Merphos	ND	46
Ronnel	ND	46
Malathion	ND	46
Chlorpyrifos	ND	46
EPN	ND	46
Trichloronate	ND	46
Stirofos	ND	46
Tokuthion	ND	46
Fensulfothion	ND	46
Bolstar	ND	46
Azinphos Methyl	ND	46
Fenthion	ND	46
Coumaphos	ND	46
TEPP	ND	92
Dimethoate	ND	46
Methyl Parathion	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	31	30 - 150
Triphenyl Phosphate	46	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plm

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C11-1

Date Sampled: 07/26/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 73

Laboratory ID: 020743-07

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	46
Carbaryl	ND	46
Linuron	ND	46
Propanil	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	21	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C11-1

Date Sampled: 07/26/02

Laboratory ID: 020743-07

Date Sample Received: 07/29/02

Date Analysis Completed: 08/15/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	63200	40
Antimony	0815	25	12
Arsenic	0815	ND	3
Barium	0815	40	40
Cadmium	0815	ND	1
Chromium	0815	64	2
Copper	0815	139	5
Iron	0815	46500	20
Lead	0815	175	2
Manganese	0815	51	3
Mercury	0815	0.5	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	272	12

ND = Not Detected

Reported by: KW

Approved by: BS

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
15	C11-1	Soil	07/26/02	07/26/02
Parameter	Units	15	Quant. Limit	
%Solids	%	76		
Organic Lead	mg/Kg	ND		0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C11-1

Date Sampled: 07/26/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 73

Laboratory ID: 020743-07

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/10/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	46
Atrazine	ND	46
Ametryn	ND	46
Terbutryn	ND	46
Planavin	ND	460

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	83	30 - 150

* For advisory purposes only.

Reported by: BS

Approved by: Ren

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C11-1
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020743-07
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	45
Aroclor-1221	ND	90
Aroclor-1232	ND	45
Aroclor-1242	ND	45
Aroclor-1248	ND	45
Aroclor-1254	ND	45
Aroclor-1260	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	61	26 - 102
Decachlorobiphenyl	61	30 - 144

* These limits are provided for advisory purposes.

Reported by: *B*

Approved by: *RLH*

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C11-2
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 70

Laboratory ID: 020743-08
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: W

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C11-2
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 70

Laboratory ID: 020743-08
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1800	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C11-2
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 70

Laboratory ID: 020743-08
Date Sample Analyzed: 08/06/02
Date Sample Extracted: 08/02/02
Associated Method Blank: S0802-BB4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	62	25 - 94
Phenol-d5	68	32 - 98
Nitrobenzene-d5	64	36 - 89
2-Fluorobiphenyl	68	32 - 94
2,4,6-Tribromophenol	79	38 - 114
Terphenyl-d14	64	20 - 121

* These limits are provided for advisory purposes.

Reported by: *W*

Approved by: *AK*

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C11-2
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 70

Laboratory ID: 020743-08
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: P0730-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	1.2	0.94 -
4,4'-DDE	ND	0.94 -
Endrin	ND	0.94 -
Endosulfan II	ND	0.94 -
4,4'-DDD	ND	0.94 -
Endosulfan Sulfate	ND	0.94 -
4,4'-DDT	ND	0.94 -
Methoxychlor	ND	2.4
Endrin Ketone	ND	0.94
Endrin Aldehyde	ND	0.94 -
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	24

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	42	35 - 135
Decachlorobiphenyl	54	25 - 143

* These limits are provided for advisory purposes.

Reported by: *B*

Approved by: *Rm*

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C11-2
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 70

Laboratory ID: 020743-08
Date Sample Extracted: 07/30/02
Date Sample Analyzed: 08/02/02
Associated Method Blank: OP0730-B1
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	47
Parathion	ND	47
Dichlorvos	ND	47
Phorate	ND	47
Mevinphos	ND	47
Disulfoton	ND	47
Demeton	ND	47
Ethoprop	ND	47
Monocrotophos	ND	140
Naled	ND	47
Sulfotepp	ND	47
Diazinon	ND	47
Merphos	ND	47
Ronnel	ND	47
Malathion	ND	47
Chlorpyrifos	ND	47
EPN	ND	47
Trichloronate	ND	47
Stirofos	ND	47
Tokuthion	ND	47
Fensulfothion	ND	47
Bolstar	ND	47
Azinphos Methyl	ND	47
Fenthion	ND	47
Coumaphos	ND	47
TEPP	ND	94
Dimethoate	ND	47
Methyl Parathion	ND	47

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	33	30 - 150
Triphenyl Phosphate	59	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C11-2

Date Sampled: 07/26/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 70

Laboratory ID: 020743-08

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: C0802-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	47
Carbaryl	ND	47
Linuron	ND	47
Propanil	ND	47

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	242 ^{XX}	30 - 150

* For advisory purposes only.

XX co-eluted with sample matrix

Reported by: fs

Approved by: Rln

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010A AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C11-2

Date Sampled: 07/26/02

Laboratory ID: 020743-08

Date Sample Received: 07/29/02

Date Analysis Completed: 08/15/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0815	66600	40
Antimony	0815	30	12
Arsenic	0815	ND	3
Barium	0815	ND	40
Cadmium	0815	ND	1
Chromium	0815	39	2
Copper	0815	12	5
Iron	0815	62900	20
Lead	0815	18	2
Manganese	0815	19	3
Mercury	0815	0.1	0.1
Selenium	0815	ND	7
Silver	0815	ND	2
Sodium	0815	ND	1000
Zinc	0815	16	12

ND = Not Detected

Reported by: _____

KW

Approved by: _____

Bf

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2207123

Smp#	Sample ID	Matrix	Date Sampled	Date Received
16	C11-2	Soil	07/25/02	07/26/02
Parameter	Units	16	Quant. Limit	
%Solids	%	75		
Organic Lead	mg/Kg	ND		0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C11-2

Date Sampled: 07/26/02

Date Sample Received: 07/29/02

Matrix: Soil

Percent Solids: 70

Laboratory ID: 020743-08

Date Sample Extracted: 08/02/02

Date Sample Analyzed: 08/09/02

Associated Method Blank: N0802-B2

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	47
Atrazine	ND	47
Ametryn	ND	47
Terbutryn	ND	47
Planavin	ND	470

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	58	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C11-2
Date Sampled: 07/26/02
Date Sample Received: 07/29/02
Matrix: Soil
Percent Solids: 70

Laboratory ID: 020743-08
Date Sample Extracted: 08/03/02
Date Sample Analyzed: 08/09/02
Associated Method Blank: PCB0803-B1
Final Extract Volume (mL): 10.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	47
Aroclor-1221	ND	94
Aroclor-1232	ND	47
Aroclor-1242	ND	47
Aroclor-1248	ND	47
Aroclor-1254	ND	47
Aroclor-1260	ND	47

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery (%)	QC Limits (%)*
Tetrachloro-m-xylene	74	26 - 102
Decachlorobiphenyl	63	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C12-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020762-01
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/15/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 10
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	4.1
Telodrin	ND	33
Planavin	ND	800
alpha-BHC	ND	4.1
beta-BHC	ND	4.1
delta-BHC	ND	4.1
Heptachlor	ND	4.1
Aldrin	140	41
Heptachlor Epoxide	ND	4.1
Endosulfan I	ND	4.1
Dieldrin	1200	80
4,4'-DDE	6.2	8.0
Endrin	33	8.0
Endosulfan II	ND	8.0
4,4'-DDD	12	8.0
Endosulfan Sulfate	ND	8.0
4,4'-DDT	70	8.0
Methoxychlor	ND	20
Endrin Ketone	400	80
Endrin Aldehyde	ND	8.0
alpha-Chlordane	ND	4.1
gamma-Chlordane	ND	4.1
Toxaphene	ND	200

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	51	35 - 135
Decachlorobiphenyl	84	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C12-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020762-01
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	40
Aroclor-1221	ND	80
Aroclor-1232	ND	40
Aroclor-1242	ND	40
Aroclor-1248	ND	40
Aroclor-1254	ND	40
Aroclor-1260	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	49	26 - 102
Decachlorobiphenyl	42	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: Plm

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C12-1

Date Sampled: 07/29/02

Laboratory ID: 020762-01

Date Sample Received: 8/5/2002

Date Analysis Completed: 08/16/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	75500	40
Antimony	0816	20	12
Arsenic	0816	ND	3
Barium	0816	ND	40
Cadmium	0816	ND	1
Chromium	0816	48	2
Copper	0816	11	5
Iron	0816	47500	20
Lead	0816	12	2
Manganese	0816	100	3
Mercury	0816	ND	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	ND	12

ND = Not Detected

Reported by: BBF

Approved by: NL

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C12-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020762-01

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	40
Carbaryl	ND	40
Linuron	ND	40
Propanil	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	41	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C12-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020762-01

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	40
Atrazine	ND	40
Ametryn	ND	40
Terbutryn	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	94	30 - 150

* For advisory purposes only.

Reported by: Xo

Approved by: f

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C12-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020762-01
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: AI

Approved by: q/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C12-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020762-01
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: AJ

Approved by: AK

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
01	C12-1	Soil	07/29/02	07/31/02

Parameter	Units	01	Quant. Limit
%Solids	%	82	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C12-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 71

Laboratory ID: 020762-02
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: M

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C12-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 71

Laboratory ID: 020762-02
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: mg

Approved by: g/k

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C12-2

Date Sampled: 07/29/02

Laboratory ID: 020762-02

Date Sample Received: 8/5/2002

Date Analysis Completed: 08/16/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	5780	40
Antimony	0816	ND	12
Arsenic	0816	ND	3
Barium	0816	56	40
Cadmium	0816	ND	1
Chromium	0816	9	2
Copper	0816	ND	5
Iron	0816	10900	20
Lead	0816	28	2
Manganese	0816	404	3
Mercury	0816	ND	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	ND	12

ND = Not Detected

Reported by: JSF

Approved by: KL

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C12-2

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 71

Laboratory ID: 020762-02

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	47
Carbaryl	ND	47
Linuron	ND	47
Propanil	ND	47

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	37	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C12-2

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 71

Laboratory ID: 020762-02

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	47
Atrazine	ND	47
Ametryn	ND	47
Terbutryn	ND	47

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	74	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C12-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 71

Laboratory ID: 020762-02
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/13/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	13	4.7
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	62	9.4
4,4'-DDE	7.0	0.94
Endrin	4.2	0.94
Endosulfan II	ND	0.94
4,4'-DDD	5.5	0.94
Endosulfan Sulfate	ND	0.94
4,4'-DDT	16	9.4
Methoxychlor	ND	2.4
Endrin Ketone	5.6	0.94
Endrin Aldehyde	ND	0.94
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	24

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	44	35 - 135
Decachlorobiphenyl	73	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C12-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 71

Laboratory ID: 020762-02
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	46
Aroclor-1221	ND	92
Aroclor-1232	ND	46
Aroclor-1242	ND	46
Aroclor-1248	ND	46
Aroclor-1254	ND	46
Aroclor-1260	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	48	26 - 102
Decachlorobiphenyl	78	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RC

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C12-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 71

Laboratory ID: 020762-02
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	47
Parathion	ND	47
Dichlorvos	ND	47
Phorate	ND	47
Mevinphos	ND	47
Disulfoton	ND	47
Demeton	ND	47
Ethoprop	ND	47
Monocrotophos	ND	140
Naled	ND	47
Sulfotepp	ND	47
Diazinon	ND	47
Merphos	ND	47
Ronnel	ND	47
Malathion	ND	47
Chlorpyrifos	ND	47
EPN	ND	47
Trichloronate	ND	47
Stirofos	ND	47
Tokuthion	ND	47
Pensulfothion	ND	47
Bolstar	ND	47
Azinphos Methyl	ND	47
Fenthion	ND	47
Coumaphos	ND	47
TEPP	ND	94
Dimethoate	ND	47
Methyl Parathion	ND	47

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	30	30 - 150
Triphenyl Phosphate	45	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
02	C12-2	Soil	07/29/02	07/31/02

Parameter	Units	02	Quant. Limit
%Solids	%	72	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C13-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020762-03
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: A J

Approved by: al

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C13-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020762-03
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: M

Approved by: a/k

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C13-1

Date Sampled: 07/29/02

Laboratory ID: 020762-03

Date Sample Received: 8/5/2002

Date Analysis Completed: 08/16/02

Matrix: Soil

Concentration in: mg/Kg (ppm) †

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	53600	40
Antimony	0816	14	12
Arsenic	0816	ND	3
Barium	0816	ND	40
Cadmium	0816	ND	1
Chromium	0816	39	2
Copper	0816	9	5
Iron	0816	34200	20
Lead	0816	15	2
Manganese	0816	86	3
Mercury	0816	0.2	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	18	12

ND = Not Detected

Reported by: UBF

Approved by: NL

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C13-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 83

Laboratory ID: 020762-03

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	40
Carbaryl	ND	40
Linuron	ND	40
Propanil	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	69	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C13-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 83

Laboratory ID: 020762-03

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	40
Atrazine	ND	40
Ametryn	ND	40
Terbutryn	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	100	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C13-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020762-03
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/15/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 10
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	4.0
Telodrin	ND	33
Planavin	ND	800
alpha-BHC	ND	4.0
beta-BHC	ND	4.0
delta-BHC	ND	4.0
Heptachlor	ND	4.0
Aldrin	51	4.0
Heptachlor Epoxide	ND	4.0
Endosulfan I	ND	4.0
Dieldrin	960	80
4,4'-DDE	13	8.0
Endrin	52	8.0
Endosulfan II	ND	8.0
4,4'-DDD	13	8.0
Endosulfan Sulfate	ND	8.0
4,4'-DDT	90	8.0
Methoxychlor	ND	20
Endrin Ketone	32	8.0
Endrin Aldchyd	ND	8.0
alpha-Chlordane	ND	4.0
gamma-Chlordane	ND	4.0
Toxaphene	ND	200

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	54	35 - 135
Decachlorobiphenyl	79	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C13-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020762-03
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	40
Aroclor-1221	ND	80
Aroclor-1232	ND	40
Aroclor-1242	ND	40
Aroclor-1248	ND	40
Aroclor-1254	ND	40
Aroclor-1260	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	60	26 - 102
Decachlorobiphenyl	69	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RCM

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C13-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 83

Laboratory ID: 020762-03
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	40
Parathion	ND	40
Dichlorvos	ND	40
Phorate	ND	40
Mevinphos	ND	40
Disulfoton	ND	40
Demeton	ND	40
Ethoprop	ND	40
Monocrotophos	ND	120
Naled	ND	40
Sulfotepp	ND	40
Diazinon	ND	40
Merphos	ND	40
Ronnel	ND	40
Malathion	ND	40
Chlorpyrifos	ND	40
EPN	ND	40
Trichloronate	ND	40
Stirofos	ND	40
Tokuthion	ND	40
Fensulfothion	ND	40
Bolstar	ND	40
Azinphos Methyl	ND	40
Fenthion	ND	40
Coumaphos	ND	40
TEPP	ND	80
Dimethoate	ND	40
Methyl Parathion	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	101	30 - 150
Triphenyl Phosphate	138	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
03	C13-1	Soil	07/29/02	07/31/02

Parameter	Units	03	Quant. Limit
%Solids	%	83	
Organic Lead	mg/Kg	ND	0.4

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C13-2

Date Sampled: 07/29/02

Date Sample Received: 8/5/2002

Matrix: Soil

Laboratory ID: 020762-04

Date Analysis Completed: 08/16/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	9970	40
Antimony	0816	12	12
Arsenic	0816	ND	3
Barium	0816	ND	40
Cadmium	0816	ND	1
Chromium	0816	30	2
Copper	0816	ND	5
Iron	0816	23200	20
Lead	0816	26	2
Manganese	0816	447	3
Mercury	0816	ND	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	ND	12

ND = Not Detected

Reported by: CBK

Approved by: RL

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C13-2

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 69

Laboratory ID: 020762-04

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	48
Carbaryl	ND	48
Linuron	ND	48
Propanil	ND	48

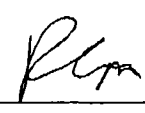
ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	20	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C13-2

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 69

Laboratory ID: 020762-04

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	48
Atrazine	ND	48
Ametryn	ND	48
Terbutryn	ND	48

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	68	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C13-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 69

Laboratory ID: 020762-04
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/13/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	3.2	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	10	0.96
4,4'-DDE	ND	0.96
Endrin	ND	0.96
Endosulfan II	ND	0.96
4,4'-DDD	ND	0.96
Endosulfan Sulfate	ND	0.96
4,4'-DDT	2.1	0.96
Methoxychlor	ND	2.4
Endrin Ketone	1.1	0.96
Endrin Aldehyde	ND	0.96
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	24

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	34	35 - 135
Decachlorobiphenyl	65	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C13-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 69

Laboratory ID: 020762-04
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	48
Aroclor-1221	ND	96
Aroclor-1232	ND	48
Aroclor-1242	ND	48
Aroclor-1248	ND	48
Aroclor-1254	ND	48
Aroclor-1260	ND	48

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	68	26 - 102
Decachlorobiphenyl	74	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: PCW

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C13-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 69

Laboratory ID: 020762-04
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	48
Parathion	ND	48
Dichlorvos	ND	48
Phorate	ND	48
Mevinphos	ND	48
Disulfoton	ND	48
Demeton	ND	48
Ethoprop	ND	48
Monocrotophos	ND	140
Naled	ND	48
Sulfotepp	ND	48
Diazinon	ND	48
Merphos	ND	48
Ronnel	ND	48
Malathion	ND	48
Chlorpyrifos	ND	48
EPN	ND	48
Trichloronate	ND	48
Stirofos	ND	48
Tokuthion	ND	48
Fensulfothion	ND	48
Bolstar	ND	48
Azinphos Methyl	ND	48
Fenthion	ND	48
Coumaphos	ND	48
TEPP	ND	96
Dimethoate	ND	48
Methyl Parathion	ND	48

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	66	30 - 150
Triphenyl Phosphate	73	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C13-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 69

Laboratory ID: 020762-04
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: ly

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C13-2
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 69

Laboratory ID: 020762-04
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: Mj

Approved by: g/c

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
04	C13-2	Soil	07/29/02	07/31/02

Parameter	Units	04	Quant. Limit
%Solids	%	68	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C14-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020762-05
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 5
Concentration in: µg/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	1100
bis(2-Chloroethyl)Ether	ND	1100
2-Chlorophenol	ND	1100
1,3-Dichlorobenzene	ND	1100
1,4-Dichlorobenzene	ND	1100
1,2-Dichlorobenzene	ND	1100
2-Methylphenol	ND	1100
2,2'-oxybis(1-Chloropropane)	ND	1100
4-Methylphenol	ND	1100
N-Nitroso-Di-n-Propylamine	ND	1100
Hexachloroethane	ND	1100
Nitrobenzene	ND	1100
Isophorone	ND	1100
2-Nitrophenol	ND	1100
2,4-Dimethylphenol	ND	1100
bis(2-Chloroethoxy)Methane	ND	1100
2,4-Dichlorophenol	ND	1100
1,2,4-Trichlorobenzene	ND	1100
Naphthalene	ND	1100
4-Chloroaniline	ND	1100
Hexachlorobutadiene	ND	1100
4-Chloro-3-methylphenol	ND	1100
2-Methylnaphthalene	ND	1100
Hexachlorocyclopentadiene	ND	2100
2,4,6-Trichlorophenol	ND	1100
2-Chloronaphthalene	ND	1100
2-Nitroaniline	ND	2100
Dimethyl Phthalate	ND	1100
Acenaphthylene	ND	1100
3-Nitroaniline	ND	2100
Acenaphthene	ND	1100
2,4-Dinitrophenol	ND	2100
4-Nitrophenol	ND	2100
Dibenzofuran	ND	1100
2,4-Dinitrotoluene	ND	1100
2,6-Dinitrotoluene	ND	1100
Diethylphthalate	ND	1100
4-Chlorophenyl-phenylether	ND	1100
Fluorene	ND	1100
4-Nitroaniline	ND	2100
4,6-Dinitro-2-Methylphenol	ND	2100
N-Nitrosodiphenylamine (1)	ND	1100
4-Bromophenol-phenylether	ND	1100

Reported by: *AK*

Approved by: *AK*

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C14-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020762-05
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 5
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	1100
Pentachlorophenol	ND	2100
Phenanthrene	ND	1100
Anthracene	ND	1100
Carbazole	ND	1100
Di-n-butylphthalate	ND	1100
Fluoranthene	ND	1100
Pyrene	ND	1100
Butylbenzylphthalate	ND	1100
3,3'-Dichlorobenzidine	ND	1100
Benzo(a)anthracene	ND	1100
bis(2-Ethylhexyl)Phthalate	ND	1100
Chrysene	ND	1100
Di-n-Octyl Phthalate	ND	1100
Benzo(b)fluoranthene	ND	1100
Benzo(k)fluoranthene	ND	1100
Benzo(a)pyrene	ND	1100
Indeno(1,2,3-cd)pyrene	ND	1100
Dibenzo(a,h)anthracene	ND	1100
Benzo(g,h,i)perylene	ND	1100
2,4,5-Trichlorophenol	ND	2100

ND = Not detected
+ Dry weight basis.

Reported by: aj

Approved by: a/l

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C14-1

Date Sampled: 07/29/02

Laboratory ID: 020762-05

Date Sample Received: 8/5/2002

Date Analysis Completed: 08/16/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	33600	40
Antimony	0816	28	12
Arsenic	0816	ND	3
Barium	0816	74	40
Cadmium	0816	ND	1
Chromium	0816	28	2
Copper	0816	20	5
Iron	0816	55800	20
Lead	0816	60	2
Manganese	0816	1710	3
Mercury	0816	ND	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	23	12

ND = Not Detected

Reported by: _____

Approved by: _____

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C14-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 78

Laboratory ID: 020762-05

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	42
Atrazine	ND	42
Ametryn	ND	42
Terbutryn	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	76	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C14-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 78

Laboratory ID: 020762-05

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	43
Carbaryl	ND	43
Linuron	ND	43
Propanil	ND	43

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	58	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C14-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020762-05
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/19/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 1000
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	430
Telodrin	ND	850
Planavin	ND	85000
alpha-BHC	ND	430
beta-BHC	ND	430
delta-BHC	ND	430
Heptachlor	ND	430
Aldrin	11000	430
Heptachlor Epoxide	ND	430
Endosulfan I	ND	430
Dieldrin	4900	850
4,4'-DDE	ND	850
Endrin	ND	850
Endosulfan II	ND	850
4,4'-DDD	1000	850
Endosulfan Sulfate	ND	850
4,4'-DDT	1100	850
Methoxychlor	ND	2100
Endrin Ketone	530	850
Endrin Aldehyde	ND	850
alpha-Chlordane	ND	430
gamma-Chlordane	ND	430
Toxaphene	ND	21000

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	0 DL	35 - 135
Decachlorobiphenyl	0 DL	25 - 143

*These limits are provided for advisory purposes.

DL = DILUTED OUT

Reported by:

Approved by:

Form I PEST

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C14-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020762-05
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	42
Aroclor-1221	ND	84
Aroclor-1232	ND	42
Aroclor-1242	ND	42
Aroclor-1248	ND	42
Aroclor-1254	ND	42
Aroclor-1260	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	82	26 - 102
Decachlorobiphenyl	76	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RC

Form I PCB

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C14-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 78

Laboratory ID: 020762-05
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	43
Parathion	ND	43
Dichlorvos	ND	43
Phorate	ND	43
Mevinphos	ND	43
Disulfoton	ND	43
Demeton	ND	43
Ethoprop	ND	43
Monocrotophos	ND	130
Naled	ND	43
Sulfotepp	ND	43
Diazinon	ND	43
Merphos	ND	43
Ronnel	ND	43
Malathion	ND	43
Chlorpyrifos	ND	43
EPN	ND	43
Trichloronate	ND	43
Stirofos	ND	43
Tokuthion	ND	43
Fensulfothion	ND	43
Bolstar	ND	43
Azinphos Methyl	ND	43
Fenthion	ND	43
Coumaphos	ND	43
TEPP	ND	86
Dimethoate	ND	43
Methyl Parathion	ND	43

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	50	30 - 150
Triphenyl Phosphate	62	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: /s/

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
05	C14-1	Soil	07/29/02	07/31/02

Parameter	Units	05	Quant. Limit
%Solids	%	78	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C14-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020762-06
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: 47

Approved by: Q/C

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C14-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020762-06
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: NY

Approved by: AK

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS -
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C14-2

Date Sampled: 07/30/02

Laboratory ID: 020762-06

Date Sample Received: 8/5/2002

Date Analysis Completed: 08/16/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	19100	40
Antimony	0816	ND	12
Arsenic	0816	ND	3
Barium	0816	ND	40
Cadmium	0816	ND	1
Chromium	0816	ND	2
Copper	0816	ND	5
Iron	0816	14900	20
Lead	0816	37	2
Manganese	0816	141	3
Mercury	0816	ND	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	ND	12

ND = Not Detected

Reported by: KBJ

Approved by: HL

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C14-2

Date Sampled: 07/30/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 73

Laboratory ID: 020762-06

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	45
Atrazine	ND	45
Amctryn	ND	45
Terbutryn	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	94	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C14-2

Date Sampled: 07/30/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 73

Laboratory ID: 020762-06

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	46
Carbaryl	ND	46
Linuron	ND	46
Propanil	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	9	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C14-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020762-06
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/19/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 100
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	45
Telodrin	ND	90
Planavin	ND	9000
alpha-BHC	ND	45
beta-BHC	ND	45
delta-BHC	ND	45
Heptachlor	ND	45
Aldrin	3300	450
Heptachlor Epoxide	ND	45
Endosulfan I	ND	45
Dieldrin	330	90
4,4'-DDE	64	90
Endrin	ND	90
Endosulfan II	ND	90
4,4'-DDD	660	90
Endosulfan Sulfate	ND	90
4,4'-DDT	92	90
Methoxychlor	ND	230
Endrin Ketone	190	90
Endrin Aldehyde	ND	90
alpha-Chlordane	ND	45
gamma-Chlordane	ND	45
Toxaphene	ND	2300

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	69	35 - 135
Decachlorobiphenyl	98	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C14-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020762-06
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	45
Aroclor-1221	ND	90
Aroclor-1232	ND	45
Aroclor-1242	ND	45
Aroclor-1248	ND	45
Aroclor-1254	ND	45
Aroclor-1260	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	27	26 - 102
Decachlorobiphenyl	51	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: Ren

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C14-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 73

Laboratory ID: 020762-06
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	45
Parathion	ND	45
Dichlorvos	ND	45
Phorate	ND	45
Mevinphos	ND	45
Disulfoton	ND	45
Demeton	ND	45
Ethoprop	ND	45
Monocrotophos	ND	140
Naled	ND	45
Sulfotepp	ND	45
Diazinon	ND	45
Merphos	ND	45
Ronnel	ND	45
Malathion	ND	45
Chlorpyrifos	ND	45
EPN	ND	45
Trichloronate	ND	45
Stirofos	ND	45
Tokuthion	ND	45
Fensulfothion	ND	45
Bolstar	ND	45
Azinphos Methyl	ND	45
Fenthion	ND	45
Coumaphos	ND	45
TEPP	ND	90
Dimethoate	ND	45
Methyl Parathion	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	28	30 - 150
Triphenyl Phosphate	42	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: /s/

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
06	C14-2	Soil	07/20/02	07/31/02

Parameter	Units	06	Quant. Limit
%Solids	%	73	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C15-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020762-07
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 5
Concentration in: $\mu\text{g/Kg (ppb)}$ +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	950
bis(2-Chloroethyl)Ether	ND	950
2-Chlorophenol	ND	950
1,3-Dichlorobenzene	ND	950
1,4-Dichlorobenzene	ND	950
1,2-Dichlorobenzene	ND	950
2-Methylphenol	ND	950
2,2'-oxybis(1-Chloropropane)	ND	950
4-Methylphenol	ND	950
N-Nitroso-Di-n-Propylamine	ND	950
Hexachloroethane	ND	950
Nitrobenzene	ND	950
Isophorone	ND	950
2-Nitrophenol	ND	950
2,4-Dimethylphenol	ND	950
bis(2-Chloroethoxy)Methane	ND	950
2,4-Dichlorophenol	ND	950
1,2,4-Trichlorobenzene	ND	950
Naphthalene	ND	950
4-Chloroaniline	ND	950
Hexachlorobutadiene	ND	950
4-Chloro-3-methylphenol	ND	950
2-Methylnaphthalene	ND	950
Hexachlorocyclopentadiene	ND	1900
2,4,6-Trichlorophenol	ND	950
2-Chloronaphthalene	ND	950
2-Nitroaniline	ND	1900
Dimethyl Phthalate	ND	950
Acenaphthylene	ND	950
3-Nitroaniline	ND	1900
Acenaphthene	ND	950
2,4-Dinitrophenol	ND	1900
4-Nitrophenol	ND	1900
Dibenzofuran	ND	950
2,4-Dinitrotoluene	ND	950
2,6-Dinitrotoluene	ND	950
Diethylphthalate	ND	950
4-Chlorophenyl-phenylether	ND	950
Fluorene	ND	950
4-Nitroaniline	ND	1900
4,6-Dinitro-2-Methylphenol	ND	1900
N-Nitrosodiphenylamine (1)	ND	950
4-Bromophenol-phenylether	ND	950

Reported by: At

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C15-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020762-07
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 5
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	950
Pentachlorophenol	ND	1900
Phenanthrene	ND	950
Anthracene	ND	950
Carbazole	ND	950
Di-n-butylphthalate	ND	950
Fluoranthene	ND	950
Pyrene	ND	950
Butylbenzylphthalate	ND	950
3,3'-Dichlorobenzidine	ND	950
Benzo(a)anthracene	ND	950
bis(2-Ethylhexyl)Phthalate	1900	950
Chrysene	ND	950
Di-n-Octyl Phthalate	ND	950
Benzo(b)fluoranthene	ND	950
Benzo(k)fluoranthene	ND	950
Benzo(a)pyrene	ND	950
Indeno(1,2,3-cd)pyrene	ND	950
Dibenzo(a,h)anthracene	ND	950
Benzo(g,h,i)perylene	ND	950
2,4,5-Trichlorophenol	ND	1900

ND = Not detected
+ Dry weight basis.

Reported by: M

Approved by: all

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010B AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C15-1

Date Sampled: 07/29/02

Date Sample Received: 8/5/2002

Matrix: Soil

Laboratory ID: 020762-07

Date Analysis Completed: 08/16/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	34800	40
Antimony	0816	ND	12
Arsenic	0816	ND	3
Barium	0816	41	40
Cadmium	0816	ND	1
Chromium	0816	33	2
Copper	0816	23	5
Iron	0816	24600	20
Lead	0816	54	2
Manganese	0816	333	3
Mercury	0816	0.2	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	61	12

ND = Not Detected

Reported by: KBK

Approved by: HL

Metals Page 9

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C15-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 87

Laboratory ID: 020762-07

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	38
Atrazine	ND	38
Ametryn	ND	38
Terbutryn	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	73	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C15-1

Date Sampled: 07/29/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 87

Laboratory ID: 020762-07

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	38
Carbaryl	ND	38
Linuron	ND	38
Propanil	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	87	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C15-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020762-07
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/19/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 10000
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	3800
Tclodrin	ND	7600
Planavin	ND	760000
alpha-BHC	ND	3800
beta-BHC	ND	3800
dclta-BHC	ND	3800
Heptachlor	ND	3800
Aldrin	360000	38000
Heptachlor Epoxide	ND	3800
Endosulfan I	ND	3800
Dieldrin	23000	7600
4,4'-DDE	ND	7600
Endrin	ND	7600
Endosulfan II	ND	7600
4,4'-DDD	ND	7600
Endosulfan Sulfate	ND	7600
4,4'-DDT	ND	7600
Methoxychlor	ND	19000
Endrin Ketone	ND	7600
Endrin Aldehyde	ND	7600
alpha-Chlordane	ND	3800
gamma-Chlordane	ND	3800
Toxaphene	ND	190000

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	0 DL	35 - 135
Decachlorobiphenyl	0 DL	25 - 143

* These limits are provided for advisory purposes.

DL = DILUTED OUT

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C15-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020762-07
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	38
Aroclor-1221	ND	76
Aroclor-1232	ND	38
Aroclor-1242	ND	38
Aroclor-1248	ND	38
Aroclor-1254	ND	38
Aroclor-1260	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	55	26 - 102
Decachlorobiphenyl	43	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RCM

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C15-1
Date Sampled: 07/29/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 87

Laboratory ID: 020762-07
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	38
Parathion	ND	38
Dichlorvos	ND	38
Phorate	ND	38
Mevinphos	ND	38
Disulfoton	ND	38
Demeton	ND	38
Ethoprop	ND	38
Monocrotophos	ND	110
Naled	ND	38
Sulfotepp	ND	38
Diazinon	ND	38
Merphos	ND	38
Ronnel	ND	38
Malathion	ND	38
Chlorpyrifos	ND	38
EPN	ND	38
Trichloronate	ND	38
Stirofos	ND	38
Tokuthion	ND	38
Fensulfothion	ND	38
Bolstar	ND	38
Azinphos Methyl	ND	38
Fenthion	ND	38
Coumaphos	ND	38
TEPP	ND	76
Dimethoate	ND	38
Methyl Parathion	ND	38

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	114	30 - 150
Triphenyl Phosphate	117	30 - 150

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
07	C15-1	Soil	07/29/02	07/31/02

Parameter	Units	07	Quant. Limit
%Solids	%	82	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C15-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020762-08
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: ky

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C15-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020762-08
Date Sample Analyzed: 08/13/02
Date Sample Extracted: 08/07/02
Associated Method Blank: S0807-B7
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1700	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: Ny

Approved by: OK

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010B AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C15-2

Date Sampled: 07/30/02

Date Sample Received: 8/5/2002

Matrix: Soil

Laboratory ID: 020762-08

Date Analysis Completed: 08/16/02

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0816	18700	40
Antimony	0816	ND	12
Arsenic	0816	ND	3
Barium	0816	84	40
Cadmium	0816	ND	1
Chromium	0816	8	2
Copper	0816	6	5
Iron	0816	14800	20
Lead	0816	55	2
Manganese	0816	676	3
Mercury	0816	ND	0.1
Selenium	0816	ND	7
Silver	0816	ND	2
Sodium	0816	ND	1000
Zinc	0816	14	12

ND = Not Detected

Reported by: CRF

Approved by: HZ

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C15-2

Date Sampled: 07/30/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020762-08

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/14/02

Associated Method Blank: C0807-B4

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	44
Carbaryl	ND	44
Linuron	ND	44
Propanil	ND	44

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	56	30 - 150

* For advisory purposes only.

Reported by: *B*

Approved by: *Plum*

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C15-2

Date Sampled: 07/30/02

Date Sample Received: 08/05/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020762-08

Date Sample Extracted: 08/07/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: N0807-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	45
Atrazine	ND	45
Ametryn	ND	45
Terbutryn	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	83	30 - 150

* For advisory purposes only.

Reported by: Lo

Approved by: /S

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C15-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020762-08
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/19/02
Associated Method Blank: P0807-B6
Final Extract Volume (mL): 2.0
Dilution Factor: 1000
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	450
Telodrin	ND	890
Planavin	ND	89000
alpha-BHC	ND	450
beta-BHC	ND	450
delta-BHC	ND	450
Heptachlor	ND	450
Aldrin	19000	4500
Heptachlor Epoxide	ND	450
Endosulfan I	ND	450
Dieldrin	1800	890
4,4'-DDE	ND	890
Endrin	ND	890
Endosulfan II	ND	890
4,4'-DDD	ND	890
Endosulfan Sulfate	ND	890
4,4'-DDT	1800	890
Methoxychlor	ND	2200
Endrin Ketone	ND	890
Endrin Aldehyde	ND	890
alpha-Chlordane	ND	450
gamma-Chlordane	ND	450
Toxaphene	ND	22000

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	0 DL	35 - 135
Decachlorobiphenyl	0 DL	25 - 143

* These limits are provided for advisory purposes.

DL = DILUTED OUT

Reported by: *JS*

Approved by: *RLm*

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C15-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020762-08
Date Sample Extracted: 08/08/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: P0808-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	45
Aroclor-1221	ND	90
Aroclor-1232	ND	45
Aroclor-1242	ND	45
Aroclor-1248	ND	45
Aroclor-1254	ND	45
Aroclor-1260	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	78	26 - 102
Decachlorobiphenyl	67	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: PC

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C15-2
Date Sampled: 07/30/02
Date Sample Received: 08/05/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020762-08
Date Sample Extracted: 08/07/02
Date Sample Analyzed: 08/14/02
Associated Method Blank: OP0807-B5
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	44
Parathion	ND	44
Dichlorvos	ND	44
Phorate	ND	44
Mevinphos	ND	44
Disulfoton	ND	44
Demeton	ND	44
Ethoprop	ND	44
Monocrotophos	ND	130
Naled	ND	44
Sulfotepp	ND	44
Diazinon	ND	44
Merphos	ND	44
Ronnel	ND	44
Malathion	ND	44
Chlorpyrifos	ND	44
EPN	ND	44
Trichloronate	ND	44
Stirofos	ND	44
Tokuthion	ND	44
Fensulfothion	ND	44
Bolstar	ND	44
Azinphos Methyl	ND	44
Fenthion	ND	44
Coumaphos	ND	44
TEPP	ND	88
Dimethoate	ND	44
Methyl Parathion	ND	44

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	39	30 - 150
Triphenyl Phosphate	48	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208001

Smp#	Sample ID	Matrix	Date Sampled	Date Received
08	C15-2	Soil	07/30/02	07/31/02

Parameter	Units	08	Quant. Limit
%Solids	%	74	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C16-1
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020776-01
Date Sample Analyzed: 08/21/02
Date Sample Extracted: 08/12/02
Associated Method Blank: S0812-B13
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: AJ

Approved by: g/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C16-1
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020776-01
Date Sample Analyzed: 08/21/02
Date Sample Extracted: 08/12/02
Associated Method Blank: S0812-B13
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: AJ

Approved by: 9/K

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C16-1
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020776-01
Date Sample Analyzed: 08/21/02
Date Sample Extracted: 08/12/02
Associated Method Blank: S0812-B13
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	48	25 - 94
Phenol-d5	51	32 - 98
Nitrobenzene-d5	48	36 - 89
2-Fluorobiphenyl	62	32 - 94
2,4,6-Tribromophenol	57	38 - 114
Terphenyl-d14	67	20 - 121

* These limits are provided for advisory purposes.

Reported by: MJ

Approved by: AK

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C16-1
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020776-01
Date Sample Extracted: 08/12/02
Date Sample Analyzed: 08/22/02
Associated Method Blank: P0812-B14
Final Extract Volume (mL): 1.0
Dilution Factor: 10
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	4.3
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	4.3
beta-BHC	ND	4.3
delta-BHC	ND	4.3
Heptachlor	ND	4.3
Aldrin	4.3	4.3
Heptachlor Epoxide	ND	4.3
Endosulfan I	6.9	4.3
Dieldrin	160	83
4,4'-DDE	28	8.3
Endrin	47	8.3
Endosulfan II	55	8.3
4,4'-DDD	87	8.3
Endosulfan Sulfate	ND	8.3
4,4'-DDT	110	8.3
Methoxychlor	ND	22
Endrin Ketone	33	8.3
Endrin Aldehyde	56	8.3
alpha-Chlordane	ND	4.3
gamma-Chlordane	ND	4.3
Toxaphene	3300	220

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	59	35 - 135
Decachlorobiphenyl	104	25 - 143

* These limits are provided for advisory purposes.

Reported by: Ren

Approved by: _____

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C16-1
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020776-01
Date Sample Extracted: 08/12/02
Date Sample Analyzed: 08/15/02
Associated Method Blank: OP0812-B11
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	42
Parathion	ND	42
Dichlorvos	ND	42
Phorate	ND	42
Mevinphos	ND	42
Disulfoton	ND	42
Demeton	ND	42
Ethoprop	ND	42
Monocrotophos	ND	130
Naled	ND	42
Sulfotepp	ND	42
Diazinon	ND	42
Merphos	ND	42
Ronnel	ND	42
Malathion	ND	42
Chlorpyrifos	ND	42
EPN	ND	42
Trichloronate	ND	42
Stirofos	ND	42
Tokuthion	ND	42
Fensulfothion	ND	42
Bolstar	ND	42
Azinphos Methyl	ND	42
Fenthion	ND	42
Coumaphos	ND	42
TEPP	ND	84
Dimethoate	ND	42
Methyl Parathion	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	73	30 - 150
Triphenyl Phosphate	75	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C16-1

Date Sampled: 08/05/02

Date Sample Received: 08/09/02

Matrix: Soil

Percent Solids: 79

Laboratory ID: 020776-01

Date Sample Extracted: 08/12/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: C0812-B10

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	42
Carbaryl	ND	42
Linuron	ND	42
Propanil	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	51	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010A AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C16-1

Date Sampled: 08/05/02

Laboratory ID: 020776-01

Date Sample Received: 08/09/02

Date Analysis Completed: 08/21/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0821	47600	40
Antimony	0821	ND	12
Arsenic	0821	8	3
Barium	0821	ND	40
Cadmium	0821	ND	1
Chromium	0821	34	2
Copper	0821	10	5
Iron	0821	28400	20
Lead	0821	15	2
Manganese	0821	74	3
Mercury	0821	ND	0.1
Selenium	0821	ND	7
Silver	0821	ND	2
Sodium	0821	ND	1000
Zinc	0821	33	12

ND = Not Detected

Reported by: *EW*

Approved by: *BF*

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208032

Smp#	Sample ID	Matrix	Date Sampled	Date Received
01	C16-1	Soil	08/05/02	08/07/02

Parameter	Units	01	Quant. Limit
%Solids	%	84	
Organic Lead	mg/Kg	ND	0.4

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C16-1

Date Sampled: 08/05/02

Date Sample Received: 08/09/02

Matrix: Soil

Percent Solids: 79

Laboratory ID: 020776-01

Date Sample Extracted: 08/12/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: N0812-B9

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	42
Atrazine	ND	42
Ametryn	ND	42
Terbutryn	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	76	30 - 150

* For advisory purposes only.

Reported by: Lo

Approved by: Ran

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C16-1
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020776-01
Date Sample Extracted: 08/12/02
Date Sample Analyzed: 08/18/02
Associated Method Blank: P0812-B12
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	42
Aroclor-1221	ND	84
Aroclor-1232	ND	42
Aroclor-1242	ND	42
Aroclor-1248	ND	42
Aroclor-1254	ND	42
Aroclor-1260	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	88	26 - 102
Decachlorobiphenyl	82	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RCM

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C16-2
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020776-02
Date Sample Analyzed: 08/21/02
Date Sample Extracted: 08/12/02
Associated Method Blank: S0812-B13
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg (ppb)}$ +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenyl-phenylether	ND	660

Reported by: aj

Approved by: a/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C16-2
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020776-02
Date Sample Analyzed: 08/21/02
Date Sample Extracted: 08/12/02
Associated Method Blank: S0812-B13
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg (ppb)}$ +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: *fl*

Approved by: *a/k*

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C16-2
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020776-02
Date Sample Analyzed: 08/21/02
Date Sample Extracted: 08/12/02
Associated Method Blank: S0812-B13
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	57	25 - 94
Phenol-d5	63	32 - 98
Nitrobenzene-d5	59	36 - 89
2-Fluorobiphenyl	63	32 - 94
2,4,6-Tribromophenol	66	38 - 114
Terphenyl-d14	77	20 - 121

* These limits are provided for advisory purposes.

Reported by: M

Approved by: a/c

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C16-2
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020776-02
Date Sample Extracted: 08/12/02
Date Sample Analyzed: 08/22/02
Associated Method Blank: P0812-B14
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
• gamma-BHC (Lindane)	ND	0.85
• Telodrin	ND	33
• Planavin	ND	330
• alpha-BHC	ND	0.85
• beta-BHC	ND	0.85
• delta-BHC	ND	0.85
• Heptachlor	ND	0.85
• Aldrin	9.2	2.3
• Heptachlor Epoxide	ND	0.85
• Endosulfan I	ND	0.85
• Dieldrin	6.9	0.88
• 4,4'-DDE	ND	0.88
• Endrin	ND	0.88
• Endosulfan II	ND	0.88
• 4,4'-DDD	ND	0.88
• Endosulfan Sulfate	ND	0.88
• 4,4'-DDT	1.3	0.88
• Methoxychlor	ND	2.3
• Endrin Ketone	ND	0.88
• Endrin Aldehyde	ND	0.88
• alpha-Chlordane	ND	0.85
• gamma-Chlordane	ND	0.85
• Toxaphene	28	23

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	42	35 - 135
Decachlorobiphenyl	71	25 - 143

*These limits are provided for advisory purposes.

Reported by: Ren

Approved by: _____

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C16-2

Date Sampled: 08/05/02

Date Sample Received: 08/09/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020776-02

Date Sample Extracted: 08/12/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: OP0812-B11

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	45
Parathion	ND	45
Dichlorvos	ND	45
Phorate	ND	45
Mevinphos	ND	45
Disulfoton	ND	45
Demeton	ND	45
Ethoprop	ND	45
Monocrotophos	ND	140
Naled	ND	45
Sulfotepp	ND	45
Diazinon	ND	45
Merphos	ND	45
Ronnel	ND	45
Malathion	ND	45
Chlorpyrifos	ND	45
EPN	ND	45
Trichloronate	ND	45
Stirofos	ND	45
Tokuthion	ND	45
Fensulfothion	ND	45
Bolstar	ND	45
Azinphos Methyl	ND	45
Fenthion	ND	45
Coumaphos	ND	45
TEPP	ND	90
Dimethoate	ND	45
Methyl Parathion	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	95	30 - 150
Triphenyl Phosphate	106	30 - 150

* These limits are provided for advisory purposes.

Reported by: JS

Approved by: RLM

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C16-2

Date Sampled: 08/05/02

Date Sample Received: 08/09/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020776-02

Date Sample Extracted: 08/12/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: C0812-B10

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	45
Carbaryl	ND	45
Linuron	ND	45
Propanil	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	47	30 - 150

* For advisory purposes only.

Reported by: JS

Approved by: R

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C16-2

Date Sampled: 08/05/02

Laboratory ID: 020776-02

Date Sample Received: 08/09/02

Date Analysis Completed: 08/21/02

Matrix: Soil

Concentration in: mg/Kg (ppm)+

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0821	9840	40
Antimony	0821	ND	12
Arsenic	0821	ND	3
Barium	0821	ND	40
Cadmium	0821	ND	1
Chromium	0821	7	2
Copper	0821	ND	5
Iron	0821	9880	20
Lead	0821	7	2
Manganese	0821	48	3
Mercury	0821	ND	0.1
Selenium	0821	ND	7
Silver	0821	ND	2
Sodium	0821	ND	1000
Zinc	0821	ND	12

ND = Not Detected

Reported by: *KEW*

Approved by: *Br*

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208032

Smp#	Sample ID	Matrix	Date Sampled	Date Received
02	C16-2	Soil	08/05/02	08/07/02
Parameter	Units	02	Quant. Limit	
%Solids	%	74		
Organic Lead	mg/Kg	ND		0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C16-2

Date Sampled: 08/05/02

Date Sample Received: 08/09/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020776-02

Date Sample Extracted: 08/12/02

Date Sample Analyzed: 08/15/02

Associated Method Blank: N0812-B9

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	44
Atrazine	ND	44
Ametryn	ND	44
Terbutryn	ND	44

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	43	30 - 150

* For advisory purposes only.

Reported by: *Lo*

Approved by: *RLm*

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C16-2
Date Sampled: 08/05/02
Date Sample Received: 08/09/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020776-02
Date Sample Extracted: 08/12/02
Date Sample Analyzed: 08/18/02
Associated Method Blank: P0812-B12
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	45
Aroclor-1221	ND	90
Aroclor-1232	ND	45
Aroclor-1242	ND	45
Aroclor-1248	ND	45
Aroclor-1254	ND	45
Aroclor-1260	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	67	26 - 102
Decachlorobiphenyl	83	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RLm

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C17-1
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-13
Date Sample Analyzed: 12/16/02
Date Sample Extracted: 12/03/02
Associated Method Blank: S1203-B9
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachlorocyclohexane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: mu

Approved by: all

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C17-1
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-13
Date Sample Analyzed: 12/16/02
Date Sample Extracted: 12/03/02
Associated Method Blank: S1203-B9
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1500	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: mu

Approved by: gic

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C17-1
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-13
Date Sample Analyzed: 12/16/02
Date Sample Extracted: 12/03/02
Associated Method Blank: S1203-B9
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	49	25 - 94
Phenol-d5	58	32 - 98
Nitrobenzene-d5	58	36 - 89
2-Fluorobiphenyl	68	32 - 94
2,4,6-Tribromophenol	52	38 - 114
Terphenyl-d14	73	20 - 121

* These limits are provided for advisory purposes.

Reported by: mu

Approved by: AK

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C17-1
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-13
Date Sample Extracted: 11/11/02
Date Sample Analyzed: 11/18/02
Associated Method Blank: P1111-B7
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	3.4	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.1
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	47	35 - 135
Decachlorobiphenyl	74	25 - 143

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PEST

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C17-1
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-13
Date Sample Extracted: 12/03/02
Date Sample Analyzed: 12/17/02
Associated Method Blank: OP1203-B7
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	41	30 - 150
Triphenyl Phosphate	66	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Rlm

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C17-1

Date Sampled: 10/29/02

Date Sample Received: 11/04/02

Matrix: Soil

Percent Solids: 80

Laboratory ID: 021192-13

Date Sample Extracted: 12/03/02

Date Sample Analyzed: 12/17/02

Associated Method Blank: C1203-B8

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	31	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

Ceimic Laboratories

Metals Results

Client: CEIMIC-SHELL
SDG: C63-1
Project Name: Shell Brasil
Ceimic ID: 021192

Lab Sample ID	Sample ID	Matrix	Date Sampled	Date Received	% Solids
021192-13	C17-1	SOIL	10/29/2002	11/4/2002	80

Parameter	Units	Result	Quant. Limit
Aluminum	mg/Kg	89000	33
Antimony	mg/Kg	ND	9.8
Arsenic	mg/Kg	ND	2.5
Barium	mg/Kg	ND	33
Cadmium	mg/Kg	ND	0.82
Chromium	mg/Kg	56	1.6
Copper	mg/Kg	8.9	4.1
Iron	mg/Kg	42000	16
Lead	mg/Kg	6.5	1.6
Manganese	mg/Kg	21	2.5
Mercury	mg/Kg	ND	0.091
Selenium	mg/Kg	ND	5.7
Silver	mg/Kg	ND	1.6
Sodium	mg/Kg	ND	820
Zinc	mg/Kg	9.8	9.8

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2210132

Smp#	Sample ID	Matrix	Date Sampled	Date Received
13	C17-1	Soil	10/29/02	10/30/02

Parameter	Units	13	Quant. Limit
%Solids	%	80	
Organic Lead	mg/Kg	ND	0.47
ND – Not Detected			

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C17-1

Date Sampled: 10/29/02

Date Sample Received: 11/04/02

Matrix: Soil

Percent Solids: 80

Laboratory ID: 021192-13

Date Sample Extracted: 12/03/02

Date Sample Analyzed: 12/18/02

Associated Method Blank: N1203-B5

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	41
Atrazine	ND	41
Ametryn	ND	41
Terbutryn	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	41	30 - 150

* For advisory purposes only.

Reported by: *Lo*

Approved by: *[Signature]*

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C17-1
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-13
Date Sample Extracted: 12/03/02
Date Sample Analyzed: 12/17/02
Associated Method Blank: PCB1203-B6
Final Extract Volume (mL): 5.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

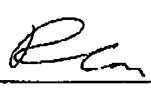
ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery (%)	QC Limits (%)*
Tetrachloro-m-xylenc	78	26 - 102
Decachlorobiphenyl	90	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C17-2
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-14
Date Sample Analyzed: 12/16/02
Date Sample Extracted: 12/03/02
Associated Method Blank: S1203-B9
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachlorocyclohexane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by:

Approved by:

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C17-2
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-14
Date Sample Analyzed: 12/16/02
Date Sample Extracted: 12/03/02
Associated Method Blank: S1203-B9
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1400	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: mu

Approved by: a/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C17-2
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-14
Date Sample Analyzed: 12/16/02
Date Sample Extracted: 12/03/02
Associated Method Blank: S1203-B9
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
• 2-Fluorophenol	48	25 - 94
• Phenol-d5	58	32 - 98
• Nitrobenzene-d5	58	36 - 89
• 2-Fluorobiphenyl	68	32 - 94
• 2,4,6-Tribromophenol	52	38 - 114
• Terphenyl-d14	77	20 - 121

* These limits are provided for advisory purposes.

Reported by: mu

Approved by: G/C

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C17-2
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-14
Date Sample Extracted: 11/11/02
Date Sample Analyzed: 11/18/02
Associated Method Blank: P1111-B7
Final Extract Volume (mL): 2.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	1.9	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	2.3	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.1
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	55	35 - 135
Decachlorobiphenyl	75	25 - 143

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Form I PEST

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C17-2
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-14
Date Sample Extracted: 12/03/02
Date Sample Analyzed: 12/17/02
Associated Method Blank: OP1203-B7
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	35	30 - 150
Triphenyl Phosphate	62	30 - 150

* These limits are provided for advisory purposes.

Reported by: Lo

Approved by: Plus

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C17-2

Date Sampled: 10/29/02

Date Sample Received: 11/04/02

Matrix: Soil

Percent Solids: 80

Laboratory ID: 021192-14

Date Sample Extracted: 12/03/02

Date Sample Analyzed: 12/17/02

Associated Method Blank: C1203-B8

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	51	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

Ceimic Laboratories

Metals Results

Client: CEIMIC-SHELL
SDG: C63-1
Project Name: Shell Brasil
Ceimic ID: 021192

Lab Sample ID	Sample ID	Matrix	Date Sampled	Date Received	% Solids
021192-14	C17-2	SOIL	10/29/2002	11/4/2002	80

Parameter	Units	Result	Quant. Limit
Aluminum	mg/Kg	3300	32
Antimony	mg/Kg	ND	9.5
Arsenic	mg/Kg	ND	2.4
Barium	mg/Kg	ND	32
Cadmium	mg/Kg	ND	0.79
Chromium	mg/Kg	1.9	1.6
Copper	mg/Kg	ND	4.0
Iron	mg/Kg	1600	16
Lead	mg/Kg	2.9	1.6
Manganese	mg/Kg	3.2	2.4
Mercury	mg/Kg	ND	0.091
Selenium	mg/Kg	ND	5.5
Silver	mg/Kg	ND	1.6
Sodium	mg/Kg	ND	790
Zinc	mg/Kg	ND	9.5

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2210132

Smp#	Sample ID	Matrix	Date Sampled	Date Received
14	C17-2	Soil	10/29/02	10/30/02

Parameter	Units	14	Quant. Limit
%Solids	%	77	
Organic Lead	mg/Kg	ND	0.49
ND – Not Detected			

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C17-2

Date Sampled: 10/29/02

Date Sample Received: 11/04/02

Matrix: Soil

Percent Solids: 80

Laboratory ID: 021192-14

Date Sample Extracted: 12/03/02

Date Sample Analyzed: 12/18/02

Associated Method Blank: N1203-B5

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Simazine	ND	41
Atrazine	ND	41
Ametryn	ND	41
Terbutryn	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	57	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C17-2
Date Sampled: 10/29/02
Date Sample Received: 11/04/02
Matrix: Soil
Percent Solids: 80

Laboratory ID: 021192-14
Date Sample Extracted: 12/03/02
Date Sample Analyzed: 12/17/02
Associated Method Blank: PCB1203-B6
Final Extract Volume (mL): 5.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	87	26 - 102
Decachlorobiphenyl	93	30 - 144

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

Form I PCB

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: ku

Approved by: AK

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/07/02
Associated Method Blank: OP0828-B8
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	37
Parathion	ND	37
Dichlorvos	ND	37
Phorate	ND	37
Mevinphos	ND	37
Disulfoton	ND	37
Demeton	ND	37
Ethoprop	ND	37
Monocrotophos	ND	110
Naled	ND	37
Sulfotepp	ND	37
Diazinon	ND	37
Merphos	ND	37
Ronnel	ND	37
Malathion	ND	37
Chlorpyrifos	ND	37
EPN	ND	37
Trichloronate	ND	37
Stirofos	ND	37
Tokuthion	ND	37
Fensulfothion	ND	37
Bolstar	ND	37
Azinphos Methyl	ND	37
Fenthion	ND	37
Coumaphos	ND	37
TEPP	ND	74
Dimethoate	ND	37
Methyl Parathion	ND	37

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	35	30 - 150
Triphenyl Phosphate	59	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C18-1

Date Sampled: 08/20/02

Laboratory ID: 020832-01

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	7940	40
Antimony	0828	14	12
Arsenic	0828	ND	3
Barium	0828	ND	40
Cadmium	0828	ND	1
Chromium	0828	17	2
Copper	0828	8	5
Iron	0828	24700	20
Lead	0828	11	2
Manganese	0828	70	3
Mercury	0828	0.2	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	16	12

ND = Not Detected

Reported by: S. Bontek

Approved by: KL

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C18-1

Date Sampled: 08/20/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 89

Laboratory ID: 020832-01

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/11/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	37
Carbaryl	ND	37
2,4-D	ND	37
Linuron	ND	37
Propanil	ND	37

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	59	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C18-1

Date Sampled: 08/20/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 89

Laboratory ID: 020832-01

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: N0828-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Molinate	ND	37
Simazine	ND	37
Atrazine	ND	37
Ametryn	ND	37
Terbutryn	ND	37

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	67	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/01/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 40
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	15
Telodrin	ND	33
Planavin	690	330
alpha-BHC	ND	15
beta-BHC	ND	15
delta-BHC	ND	15
Heptachlor	ND	15
Aldrin	ND	15
Heptachlor Epoxide	76	15
Endosulfan I	ND	15
Dieldrin	99	30
4,4'-DDE	ND	30
Endrin	160	30
Endosulfan II	ND	30
4,4'-DDD	360	300
Endosulfan Sulfate	120	30
4,4'-DDT	ND	30
Methoxychlor	ND	75
Endrin Ketone	ND	30
Endrin Aldehyde	410	30
alpha-Chlordane	ND	15
gamma-Chlordane	ND	15
Toxaphene	17000	750

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	81	35 - 135
Decachlorobiphenyl	220	25 - 143

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PEST

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/12/02
Associated Method Blank: P0828-B6
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	45	26 - 102
Decachlorobiphenyl	80	30 - 144

* These limits are provided for advisory purposes.

Reported by: _____

MS

Approved by: _____

Plm

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	47	25 - 94
Phenol-d5	54	32 - 98
Nitrobenzene-d5	47	36 - 89
2-Fluorobiphenyl	54	32 - 94
2,4,6-Tribromophenol	61	38 - 114
Terphenyl-d14	65	20 - 121

* These limits are provided for advisory purposes.

Reported by: KV

Approved by: OK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg (ppb)}$ +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: ku

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	ND	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-1
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 89

Laboratory ID: 020832-01
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	47	25 - 94
Phenol-d5	54	32 - 98
Nitrobenzene-d5	47	36 - 89
2-Fluorobiphenyl	54	32 - 94
2,4,6-Tribromophenol	61	38 - 114
Terphenyl-d14	65	20 - 121

* These limits are provided for advisory purposes.

Reported by: *KL*

Approved by: *[Signature]*

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
 Project# : 1227
 Project Name : BIPI
 Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
01	C18-1	Soil	08/20/02	08/23/02

Parameter	Units	01	Quant. Limit
%Solids	%	88	
Organic Lead	mg/Kg	ND	0.4

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C18-2

Date Sampled: 08/20/02

Laboratory ID: 020832-02

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	16200	40
Antimony	0828	ND	12
Arsenic	0828	ND	3
Barium	0828	74	40
Cadmium	0828	ND	1
Chromium	0828	16	2
Copper	0828	29	5
Iron	0828	20300	20
Lead	0828	14	2
Manganese	0828	31	3
Mercury	0828	0.1	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	50	12

ND = Not Detected

Reported by: Stanczak

Approved by: id

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C18-2

Date Sampled: 08/20/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 72

Laboratory ID: 020832-02

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	46
Carbaryl	ND	46
2,4-D	ND	46
Linuron	ND	46
Propanil	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	56	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C18-2

Date Sampled: 08/20/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 72

Laboratory ID: 020832-02

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: N0828-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Molinate	ND	46
Simazine	ND	46
Atrazine	ND	46
Ametryn	ND	46
Terbutryn	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	61	30 - 150

* For advisory purposes only.

Reported by: 

Approved by: 

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CRIMIC-SHELL
Client Sample ID: C18-2
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020832-02
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 08/31/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.92
4,4'-DDE	ND	0.92
Endrin	ND	0.92
Endosulfan II	ND	0.92
4,4'-DDD	ND	0.92
Endosulfan Sulfate	ND	0.92
4,4'-DDT	ND	0.92
Methoxychlor	ND	2.3
Endrin Ketone	ND	0.92
Endrin Aldehyde	ND	0.92
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	23

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	68	35 - 135
Decachlorobiphenyl	81	25 - 143

* These limits are provided for advisory purposes.

Reported by: RLM

Approved by: B

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C18-2
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020832-02
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/12/02
Associated Method Blank: P0828-B6
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	61	26 - 102
Decachlorobiphenyl	117	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RCM

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C18-2
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020832-02
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/07/02
Associated Method Blank: OP0828-B8
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	46
Parathion	ND	46
Dichlorvos	ND	46
Phorate	ND	46
Mevinphos	ND	46
Disulfoton	ND	46
Demeton	ND	46
Ethoprop	ND	46
Monocrotophos	ND	140
Naled	ND	46
Sulfotepp	ND	46
Diazinon	ND	46
Merphos	ND	46
Ronnel	ND	46
Malathion	ND	46
Chlorpyrifos	ND	46
EPN	ND	46
Trichloronate	ND	46
Stirofos	ND	46
Tokuthion	ND	46
Fensulfothion	ND	46
Bolstar	ND	46
Azinphos Methyl	ND	46
Fenthion	ND	46
Coumaphos	ND	46
TEPP	ND	92
Dimethoate	ND	46
Methyl Parathion	ND	46

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	28	30 - 150
Triphenyl Phosphate	60	30 - 150

* These limits are provided for advisory purposes.

Reported by: 

Approved by: 

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-2
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020832-02
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: KVL

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-2
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020832-02
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	4300	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: *ku*

Approved by: *AK*

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C18-2
Date Sampled: 08/20/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 72

Laboratory ID: 020832-02
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	52	25 - 94
Phenol-d5	61	32 - 98
Nitrobenzene-d5	56	36 - 89
2-Fluorobiphenyl	61	32 - 94
2,4,6-Tribromophenol	75	38 - 114
Terphenyl-d14	69	20 - 121

* These limits are provided for advisory purposes.

Reported by: KK

Approved by: AK

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
02	C18-2	Soil	08/20/02	08/23/02

Parameter	Units	02	Quant. Limit
%Solids	%	74	
Organic Lead	mg/Kg	ND	0.5

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C19-1

Date Sampled: 08/22/02

Laboratory ID: 020832-03

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	17000	40
Antimony	0828	14	12
Arsenic	0828	ND	3
Barium	0828	60	40
Cadmium	0828	ND	1
Chromium	0828	41	2
Copper	0828	ND	5
Iron	0828	26000	20
Lead	0828	34	2
Manganese	0828	96	3
Mercury	0828	0.3	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	221	12

ND = Not Detected

Reported by: _____

S. Bontorok

Approved by: _____

a

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C19-1

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 85

Laboratory ID: 020832-03

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/11/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	39
Carbaryl	ND	39
2,4-D	ND	39
Linuron	ND	39
Propanil	ND	39

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	50	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C19-1

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 85

Laboratory ID: 020832-03

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: N0828-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Molinate	ND	39
Simazine	ND	39
Atrazine	ND	39
Ametryn	ND	39
Terbutryn	ND	39

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	69	30 - 150

* For advisory purposes only.

Reported by: _____

B

Approved by: _____

Rlm

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C19-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 85

Laboratory ID: 020832-03
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 08/31/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	4.4	0.85
Heptachlor Epoxide	0.98	0.85
Endosulfan I	2.2	0.85
Dieldrin	2.6	0.85
4,4'-DDE	ND	0.85
Endrin	1.3	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	2.1	0.85
Methoxychlor	ND	2.0
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	3.7	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	54	35 - 135
Decachlorobiphenyl	121	25 - 143

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C19-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 85

Laboratory ID: 020832-03
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/13/02
Associated Method Blank: P0828-B6
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	140	33
Aroclor-1248	ND	33
Aroclor-1254	190	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	41	26 - 102
Decachlorobiphenyl	38	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: Plm

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C19-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 85

Laboratory ID: 020832-03
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/07/02
Associated Method Blank: OP0828-B8
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	39
Parathion	ND	39
Dichlorvos	ND	39
Phorate	ND	39
Mevinphos	ND	39
Disulfoton	ND	39
Demeton	ND	39
Ethoprop	ND	39
Monocrotophos	ND	120
Naled	ND	39
Sulfotepp	ND	39
Diazinon	ND	39
Merphos	ND	39
Ronnel	ND	39
Malathion	ND	39
Chlorpyrifos	ND	39
EPN	ND	39
Trichloronate	ND	39
Stirofos	ND	39
Tokuthion	ND	39
Fensulfothion	ND	39
Bolstar	ND	39
Azinphos Methyl	ND	39
Fenthion	ND	39
Coumaphos	ND	39
TEPP	ND	78
Dimethoate	ND	39
Methyl Parathion	ND	39

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	22	30 - 150
Triphenyl Phosphate	36	30 - 150

* These limits are provided for advisory purposes.

Reported by: LS

Approved by: [Signature]

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C19-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 85

Laboratory ID: 020832-03
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: KR

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C19-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 85

Laboratory ID: 020832-03
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1500	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: KV

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C19-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 85

Laboratory ID: 020832-03
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	44	25 - 94
Phenol-d5	51	32 - 98
Nitrobenzene-d5	46	36 - 89
2-Fluorobiphenyl	56	32 - 94
2,4,6-Tribromophenol	65	38 - 114
Terphenyl-d14	67	20 - 121

* These limits are provided for advisory purposes.

Reported by: KK

Approved by: AK

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
03	C19-1	Soil	08/22/02	08/23/02

Parameter	Units	03	Quant. Limit
%Solids	%	87	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C19-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020832-04
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: KV

Approved by: a/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C19-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020832-04
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	1100	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: KK

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C19-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020832-04
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	59	25 - 94
Phenol-d5	68	32 - 98
Nitrobenzene-d5	58	36 - 89
2-Fluorobiphenyl	67	32 - 94
2,4,6-Tribromophenol	71	38 - 114
Terphenyl-d14	76	20 - 121

* These limits are provided for advisory purposes.

Reported by: KK

Approved by: alC

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

TOTAL METALS
SW846 METHOD 6010A AND 7471A

Client: CEIMIC-SHELL

Client Sample ID: C19-2

Date Sampled: 08/22/02

Laboratory ID: 020832-04

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	65100	40
Antimony	0828	ND	12
Arsenic	0828	ND	3
Barium	0828	ND	40
Cadmium	0828	ND	1
Chromium	0828	38	2
Copper	0828	27	5
Iron	0828	30400	20
Lead	0828	34	2
Manganese	0828	30	3
Mercury	0828	0.3	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	32	12

ND = Not Detected

Reported by: SBontceak

Approved by: RL

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C19-2

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020832-04

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	44
Carbaryl	ND	44
2,4-D	ND	44
Linuron	ND	44
Propanil	ND	44

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	53	30 - 150

* For advisory purposes only.

Reported by: B

Approved by: Plm

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C19-2

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 74

Laboratory ID: 020832-04

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: N0828-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Molinate	ND	44
Simazine	ND	44
Atrazine	ND	44
Ametryn	ND	44
Terbutryn	ND	44

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	20	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C19-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020832-04
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 08/31/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	22	4.5
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	91	9.0
4,4'-DDE	ND	0.90
Endrin	3.3	0.90
Endosulfan II	ND	0.90
4,4'-DDD	7.3	0.90
Endosulfan Sulfate	ND	0.90
4,4'-DDT	23	9.0
Methoxychlor	ND	2.3
Endrin Ketone	3.6	0.90
Endrin Aldehyde	2.9	0.90
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	23

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	54	35 - 135
Decachlorobiphenyl	67	25 - 143

* These limits are provided for advisory purposes.

Reported by: RLM

Approved by: /s/

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C19-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020832-04
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/12/02
Associated Method Blank: P0828-B6
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	39	26 - 102
Decachlorobiphenyl	38	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: Plm

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C19-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 74

Laboratory ID: 020832-04
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/07/02
Associated Method Blank: OP0828-B8
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	45
Parathion	ND	45
Dichlorvos	ND	45
Phorate	ND	45
Mevinphos	ND	45
Disulfoton	ND	45
Demeton	ND	45
Ethoprop	ND	45
Monocrotophos	ND	140
Naled	ND	45
Sulfotepp	ND	45
Diazinon	ND	45
Merphos	ND	45
Ronnel	ND	45
Malathion	ND	45
Chlorpyrifos	ND	45
EPN	ND	45
Trichloronate	ND	45
Stirofos	ND	45
Tokuthion	ND	45
Fensulfothion	ND	45
Bolstar	ND	45
Azinphos Methyl	ND	45
Fenthion	ND	45
Coumaphos	ND	45
TEPP	ND	90
Dimethoate	ND	45
Methyl Parathion	ND	45

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	61	30 - 150
Triphenyl Phosphate	108	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
04	C19-2	Soil	08/22/02	08/23/02

Parameter	Units	04	Quant. Limit
%Solids	%	75	
Organic Lead	mg/Kg	ND	0.5

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C20-1

Date Sampled: 08/22/02

Laboratory ID: 020832-05

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	9920	40
Antimony	0828	ND	12
Arsenic	0828	ND	3
Barium	0828	ND	40
Cadmium	0828	ND	1
Chromium	0828	13	2
Copper	0828	8	5
Iron	0828	16400	20
Lead	0828	19	2
Manganese	0828	58	3
Mercury	0828	ND	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	29	12

ND = Not Detected

Reported by: _____

SBantrek

Approved by: _____

RL

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C20-1

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020832-05

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: N0828-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Molinate	ND	40
Simazine	ND	40
Atrazine	ND	40
Ametryn	ND	40
Terbutryn	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	6	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C20-1

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 82

Laboratory ID: 020832-05

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	40
Carbaryl	ND	40
2,4-D	ND	40
Linuron	ND	40
Propanil	ND	40

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	69	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C20-1 ~~C20-1~~
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020832-05
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 08/31/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	7.2	4.1
Heptachlor Epoxide	0.89	0.85
Endosulfan I	1.6	0.85
Dieldrin	29	8.1
4,4'-DDE	1.4	0.85
Endrin	2.1	0.85
Endosulfan II	ND	0.85
4,4'-DDD	89	8.1
Endosulfan Sulfate	ND	0.85
4,4'-DDT	1.5	0.85
Methoxychlor	ND	2.0
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	2.4	0.85
Toxaphene	ND	20

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	52	35 - 135
Decachlorobiphenyl	87	25 - 143

* These limits are provided for advisory purposes.

Reported by: RLS

Approved by: B

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C20-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020832-05
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/13/02
Associated Method Blank: P0828-B6
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	46	26 - 102
Decachlorobiphenyl	43	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: Plm

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEMIC-SHELL
Client Sample ID: C20-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020832-05
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/07/02
Associated Method Blank: OP0828-B8
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	9	30 - 150
Triphenyl Phosphate	18	30 - 150

* These limits are provided for advisory purposes.

Reported by: Jo

Approved by: B

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020832-05
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: KK

Approved by: g/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020832-05
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	2300	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: KK

Approved by: al

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-1
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 82

Laboratory ID: 020832-05
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	50	25 - 94
Phenol-d5	60	32 - 98
Nitrobenzene-d5	55	36 - 89
2-Fluorobiphenyl	70	32 - 94
2,4,6-Tribromophenol	73	38 - 114
Terphenyl-d14	80	20 - 121

* These limits are provided for advisory purposes.

Reported by: KE

Approved by: alC

Metals Results

Client : CSD-GEOKLOCK Geologia e Engenharia Ambiental.
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
05	C20-1	Soil	08/22/02	08/23/02

Parameter	Units	05	Quant. Limit
%Solids	%	84	
Organic Lead	mg/Kg	ND	0.4

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020832-06
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 30
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	6100
bis(2-Chloroethyl)Ether	ND	6100
2-Chlorophenol	ND	6100
1,3-Dichlorobenzene	ND	6100
1,4-Dichlorobenzene	ND	6100
1,2-Dichlorobenzene	ND	6100
2-Methylphenol	ND	6100
2,2'-oxybis(1-Chloropropane)	ND	6100
4-Methylphenol	ND	6100
N-Nitroso-Di-n-Propylamine	ND	6100
Hexachloroethane	ND	6100
Nitrobenzene	ND	6100
Isophorone	ND	6100
2-Nitrophenol	ND	6100
2,4-Dimethylphenol	ND	6100
bis(2-Chloroethoxy)Methane	ND	6100
2,4-Dichlorophenol	ND	6100
1,2,4-Trichlorobenzene	ND	6100
Naphthalene	ND	6100
4-Chloroaniline	ND	6100
Hexachlorobutadiene	ND	6100
4-Chloro-3-methylphenol	ND	6100
2-Methylnaphthalene	ND	6100
Hexachlorocyclopentadiene	ND	12000
2,4,6-Trichlorophenol	ND	6100
2-Chloronaphthalene	ND	6100
2-Nitroaniline	ND	12000
Dimethyl Phthalate	ND	6100
Acenaphthylene	ND	6100
3-Nitroaniline	ND	12000
Acenaphthene	ND	6100
2,4-Dinitrophenol	ND	12000
4-Nitrophenol	ND	12000
Dibenzofuran	ND	6100
2,4-Dinitrotoluene	ND	6100
2,6-Dinitrotoluene	ND	6100
Diethylphthalate	ND	6100
4-Chlorophenyl-phenylether	ND	6100
Fluorene	ND	6100
4-Nitroaniline	ND	12000
4,6-Dinitro-2-Methylphenol	ND	12000
N-Nitrosodiphenylamine (1)	ND	6100
4-Bromophenol-phenylether	ND	6100

Reported by: KV

Approved by: AK

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020832-06
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 30
Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	6100
Pentachlorophenol	ND	12000
Phenanthrene	ND	6100
Anthracene	ND	6100
Carbazole	ND	6100
Di-n-butylphthalate	ND	6100
Fluoranthene	ND	6100
Pyrene	ND	6100
Butylbenzylphthalate	ND	6100
3,3'-Dichlorobenzidine	ND	6100
Benzo(a)anthracene	ND	6100
bis(2-Ethylhexyl)Phthalate	ND	6100
Chrysene	ND	6100
Di-n-Octyl Phthalate	ND	6100
Benzo(b)fluoranthene	ND	6100
Benzo(k)fluoranthene	ND	6100
Benzo(a)pyrene	ND	6100
Indeno(1,2,3-cd)pyrene	ND	6100
Dibenzo(a,h)anthracene	ND	6100
Benzo(g,h,i)perylene	ND	6100
2,4,5-Trichlorophenol	ND	12000

ND = Not detected
+ Dry weight basis.

Reported by: KK

Approved by: a/c

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020832-06
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 30
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	49	25 - 94
Phenol-d5	62	32 - 98
Nitrobenzene-d5	54	36 - 89
2-Fluorobiphenyl	69	32 - 94
2,4,6-Tribromophenol	75	38 - 114
Terphenyl-d14	98	20 - 121

* These limits are provided for advisory purposes.

Reported by: *KV*

Approved by: *a/k*

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C20-2
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 81

Laboratory ID: 020832-06
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 08/31/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 10
Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	4.1
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	4.1
beta-BHC	ND	4.1
delta-BHC	ND	4.1
Heptachlor	ND	4.1
Aldrin	7.7	4.1
Heptachlor Epoxide	ND	4.1
Endosulfan I	ND	4.1
Dieldrin	660	82
4,4'-DDE	9.7	8.2
Endrin	ND	8.2
Endosulfan II	ND	8.2
4,4'-DDD	68	8.2
Endosulfan Sulfate	ND	8.2
4,4'-DDT	9.0	8.2
Methoxychlor	ND	21
Endrin Ketone	29	8.2
Endrin Aldehyde	18	8.2
alpha-Chlordane	ND	4.1
gamma-Chlordane	ND	4.1
Toxaphene	ND	210

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	68	35 - 135
Decachlorobiphenyl	96	25 - 143

*These limits are provided for advisory purposes.

Reported by: Plan

Approved by: B

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL

Client Sample ID: C20-2

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020832-06

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/08/02

Associated Method Blank: OP0828-B8

Final Extract Volume (mL): 1.0

Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	41
Parathion	ND	41
Dichlorvos	ND	41
Phorate	ND	41
Mevinphos	ND	41
Disulfoton	ND	41
Demeton	ND	41
Ethoprop	ND	41
Monocrotophos	ND	120
Naled	ND	41
Sulfotepp	ND	41
Diazinon	ND	41
Merphos	ND	41
Ronnel	ND	41
Malathion	ND	41
Chlorpyrifos	ND	41
EPN	ND	41
Trichloronate	ND	41
Stirofos	ND	41
Tokuthion	ND	41
Fensulfothion	ND	41
Bolstar	ND	41
Azinphos Methyl	ND	41
Fenthion	ND	41
Coumaphos	ND	41
TEPP	ND	82
Dimethoate	ND	41
Methyl Parathion	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	43	30 - 150
Triphenyl Phosphate	62	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C20-2

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 81

Laboratory ID: 020832-06

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/11/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	41
Carbaryl	ND	41
2,4-D	ND	41
Linuron	ND	41
Propanil	ND	41

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	51	30 - 150

* For advisory purposes only.

Reported by:

Approved by:

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C20-2

Date Sampled: 08/22/02

Laboratory ID: 020832-06

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	44800	40
Antimony	0828	26	12
Arsenic	0828	ND	3
Barium	0828	128	40
Cadmium	0828	ND	1
Chromium	0828	73	2
Copper	0828	349	5
Iron	0828	48200	20
Lead	0828	646	2
Manganese	0828	180	3
Mercury	0828	3.3	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	741	12

ND = Not Detected

Reported by: _____

S. Bartrak

Approved by: _____

HL

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
06	C20-2	Soil	08/22/02	08/23/02

Parameter	Units	06	Quant. Limit
%Solids	%	82	
Organic Lead	mg/Kg	ND	0.5

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-3
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020832-07
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Phenol	ND	660
bis(2-Chloroethyl)Ether	ND	660
2-Chlorophenol	ND	660
1,3-Dichlorobenzene	ND	660
1,4-Dichlorobenzene	ND	660
1,2-Dichlorobenzene	ND	660
2-Methylphenol	ND	660
2,2'-oxybis(1-Chloropropane)	ND	660
4-Methylphenol	ND	660
N-Nitroso-Di-n-Propylamine	ND	660
Hexachloroethane	ND	660
Nitrobenzene	ND	660
Isophorone	ND	660
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	660
bis(2-Chloroethoxy)Methane	ND	660
2,4-Dichlorophenol	ND	660
1,2,4-Trichlorobenzene	ND	660
Naphthalene	ND	660
4-Chloroaniline	ND	660
Hexachlorobutadiene	ND	660
4-Chloro-3-methylphenol	ND	660
2-Methylnaphthalene	ND	660
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	660
2-Chloronaphthalene	ND	660
2-Nitroaniline	ND	660
Dimethyl Phthalate	ND	660
Acenaphthylene	ND	660
3-Nitroaniline	ND	660
Acenaphthene	ND	660
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	660
2,4-Dinitrotoluene	ND	660
2,6-Dinitrotoluene	ND	660
Diethylphthalate	ND	660
4-Chlorophenyl-phenylether	ND	660
Fluorene	ND	660
4-Nitroaniline	ND	660
4,6-Dinitro-2-Methylphenol	ND	660
N-Nitrosodiphenylamine (1)	ND	660
4-Bromophenol-phenylether	ND	660

Reported by: KU

Approved by: al

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-3
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020832-07
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Hexachlorobenzene	ND	660
Pentachlorophenol	ND	660
Phenanthrene	ND	660
Anthracene	ND	660
Carbazole	ND	660
Di-n-butylphthalate	ND	660
Fluoranthene	ND	660
Pyrene	ND	660
Butylbenzylphthalate	ND	660
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	660
bis(2-Ethylhexyl)Phthalate	730	660
Chrysene	ND	660
Di-n-Octyl Phthalate	ND	660
Benzo(b)fluoranthene	ND	660
Benzo(k)fluoranthene	ND	660
Benzo(a)pyrene	ND	660
Indeno(1,2,3-cd)pyrene	ND	660
Dibenzo(a,h)anthracene	ND	660
Benzo(g,h,i)perylene	ND	660
2,4,5-Trichlorophenol	ND	660

ND = Not detected
+ Dry weight basis.

Reported by: KU

Approved by: al

SEMIVOLATILE ORGANICS ANALYSIS
by SW846 METHOD 8270C

Client: CEIMIC-SHELL
Client Sample ID: C20-3
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020832-07
Date Sample Analyzed: 09/07/02
Date Sample Extracted: 08/28/02
Associated Method Blank: S0828-B4
Dilution Factor: 1
Concentration in: $\mu\text{g/Kg}$ (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	54	25 - 94
Phenol-d5	61	32 - 98
Nitrobenzene-d5	53	36 - 89
2-Fluorobiphenyl	62	32 - 94
2,4,6-Tribromophenol	77	38 - 114
Terphenyl-d14	77	20 - 121

* These limits are provided for advisory purposes.

Reported by: KK

Approved by: Q/C

**TARGET COMPOUND LIST
ORGANOCHLORINE PESTICIDES
by SW846 Method 8081A**

Client: CEIMIC-SHELL
Client Sample ID: C20-3
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020832-07
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 08/31/02
Associated Method Blank: P0828-B2
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
gamma-BHC (Lindane)	ND	0.85
Telodrin	ND	33
Planavin	ND	330
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor Epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	0.85
Endrin	ND	0.85
Endosulfan II	ND	0.85
4,4'-DDD	ND	0.85
Endosulfan Sulfate	ND	0.85
4,4'-DDT	ND	0.85
Methoxychlor	ND	2.1
Endrin Ketone	ND	0.85
Endrin Aldehyde	ND	0.85
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Toxaphene	ND	21

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	48	35 - 135
Decachlorobiphenyl	60	25 - 143

* These limits are provided for advisory purposes.

Reported by: _____

Approved by: _____

Form I PEST

ORGANOPHOSPHOROUS PESTICIDES
by GC/FPD SW846 Method 8141A

Client: CEIMIC-SHELL
Client Sample ID: C20-3
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020832-07
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/07/02
Associated Method Blank: OP0828-B8
Final Extract Volume (mL): 1.0
Dilution Factor: 1
Concentration in: ug/Kg (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Chlorfenvinphos	ND	42
Parathion	ND	42
Dichlorvos	ND	42
Phorate	ND	42
Mevinphos	ND	42
Disulfoton	ND	42
Demeton	ND	42
Ethoprop	ND	42
Monocrotophos	ND	130
Naled	ND	42
Sulfotepp	ND	42
Diazinon	ND	42
Merphos	ND	42
Ronnel	ND	42
Malathion	ND	42
Chlorpyrifos	ND	42
EPN	ND	42
Trichloronate	ND	42
Stirofos	ND	42
Tokuthion	ND	42
Fensulfothion	ND	42
Bolstar	ND	42
Azinphos Methyl	ND	42
Fenthion	ND	42
Coumaphos	ND	42
TEPP	ND	84
Dimethoate	ND	42
Methyl Parathion	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tributyl Phosphate	37	30 - 150
Triphenyl Phosphate	69	30 - 150

* These limits are provided for advisory purposes.

Reported by:

Approved by:

CARBAMATES / HERBICIDES
by HPLC Method 632 Modified

Client: CEIMIC-SHELL

Client Sample ID: C20-3

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 79

Laboratory ID: 020832-07

Date Sample Extracted: 08/31/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: C0831-B1

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Bentazon	ND	42
Carbaryl	ND	42
2,4-D	ND	42
Linuron	ND	42
Propanil	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	65	30 - 150

* For advisory purposes only.

Reported by: _____

Approved by: _____

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

**TOTAL METALS
SW846 METHOD 6010A AND 7471A**

Client: CEIMIC-SHELL

Client Sample ID: C20-3

Date Sampled: 08/22/02

Laboratory ID: 020832-07

Date Sample Received: 08/26/02

Date Analysis Completed: 09/13/02

Matrix: Soil

Concentration in: mg/Kg (ppm) +

Target Analyte	Preparation Batch	Sample Concentration	Quantitation Limit
Aluminum	0828	21500	40
Antimony	0828	ND	12
Arsenic	0828	ND	3
Barium	0828	ND	40
Cadmium	0828	ND	1
Chromium	0828	11	2
Copper	0828	ND	5
Iron	0828	4930	20
Lead	0828	6	2
Manganese	0828	8	3
Mercury	0828	0.1	0.1
Selenium	0828	ND	7
Silver	0828	ND	2
Sodium	0828	ND	1000
Zinc	0828	ND	12

ND = Not Detected

Reported by: Stentz

Approved by: RL

Metals Results

Client : **CSD-GEOKLOCK Geologia e Engenharia Ambiental.**
Project# : 1227
Project Name : BIPI
Ceimic I.D. : 2208100

Smp#	Sample ID	Matrix	Date Sampled	Date Received
07	C20-3	Soil	08/22/02	08/23/02

Parameter	Units	07	Quant. Limit
%Solids	%	74	
Organic Lead	mg/Kg	ND	0.5

HERBICIDES
by GC/NPD Method 619 Modified

Client: CEIMIC-SHELL

Client Sample ID: C20-3

Date Sampled: 08/22/02

Date Sample Received: 08/26/02

Matrix: Soil

Percent Solids: 79

Laboratory ID: 020832-07

Date Sample Extracted: 08/28/02

Date Sample Analyzed: 09/10/02

Associated Method Blank: N0828-B3

Dilution Factor: 1

Concentration in: $\mu\text{g/Kg}$ (ppb)+

Target Analyte	Sample Concentration	Quantitation Limit
Molinate	ND	42
Simazine	ND	42
Atrazine	ND	42
Ametryn	ND	42
Terbutryn	ND	42

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2,6-DNT	33	30 - 150

* For advisory purposes only.

Reported by: _____

B

Approved by: _____

Ren

POLYCHLORINATED BIPHENYLS (PCB)
by SW846 Method 8082

Client: CEIMIC-SHELL
Client Sample ID: C20-3
Date Sampled: 08/22/02
Date Sample Received: 08/26/02
Matrix: Soil
Percent Solids: 79

Laboratory ID: 020832-07
Date Sample Extracted: 08/28/02
Date Sample Analyzed: 09/12/02
Associated Method Blank: P0828-B6
Final Extract Volume (mL): 1.0
Dilution Factor: 1

Concentration in: ug/Kg (ppb) +

Target Analyte	Sample Concentration	Quantitation Limit
Aroclor-1016	ND	33
Aroclor-1221	ND	66
Aroclor-1232	ND	33
Aroclor-1242	ND	33
Aroclor-1248	ND	33
Aroclor-1254	ND	33
Aroclor-1260	ND	33

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Tetrachloro-m-xylene	34	26 - 102
Decachlorobiphenyl	32	30 - 144

* These limits are provided for advisory purposes.

Reported by: MS

Approved by: RLM



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