



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EM1008926	Page	: 1 of 8
Client	: INTEGRATED RECYCLING	Laboratory	: Environmental Division Melbourne
Contact	: MR JUAN CASTILLO	Contact	: Steven McGrath
Address	: 34-36 Lakeside Ave. Reservoir Vic 3073	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcastillo@ipstretch.com	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9474 4279	Telephone	: +61-3-8549 9600
Facsimile	: ----	Facsimile	: +61-3-8549 9601
Project	: SOIL SAMPLES	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 16-AUG-2010
C-O-C number	: ----	Issue Date	: 23-AUG-2010
Sampler	: JC	No. of samples received	: 2
Site	: ----	No. of samples analysed	: 2
Quote number	: ----		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

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Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Xingbin Lin	Senior Organic Chemist	Organics

Environmental Division Melbourne

Part of the **ALS Laboratory Group**

4 Westall Rd Springvale VIC Australia 3171

Tel. +61-3-8549 9600 Fax. +61-3-8549 9601 www.alsglobal.com

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG048: EM1008880 #8 matrix spike failed for Total Hexavalent Chromium by Alkaline Digestion due to possible sample matrix interference. This has been confirmed by re-digestion and re-analysis.**
- **EP066-EM: Sample EM1008926-002 required dilution prior to analysis due to matrix interferences (dark colour). LOR values have been adjusted accordingly.**



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				EIIWANDA WETLAND	MURRAY RIVERSIDE	----	----	----
				09-AUG-2010 15:00	09-AUG-2010 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1008926-001	EM1008926-002	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	11.6	6.5	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	<5	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Copper	7440-50-8	5	mg/kg	12	7	----	----	----
Lead	7439-92-1	5	mg/kg	10	17	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----
Nickel	7440-02-0	2	mg/kg	14	8	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Silver	7440-22-4	2	mg/kg	<2	<2	----	----	----
Tin	7440-31-5	5	mg/kg	<5	<5	----	----	----
Zinc	7440-66-6	5	mg/kg	26	26	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	----	----	----
EK026G: Total Cyanide By Discrete Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	4	----	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	260	160	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<5.00	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	----	----	----
1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	----	----	----



Analytical Results

Sub-Matrix: SOIL

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Client sampling date / time

				EIIWANDA WETLAND	MURRAY RIVERSIDE	----	----	----
				09-AUG-2010 15:00	09-AUG-2010 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1008926-001	EM1008926-002	----	----	----
EP074I: Volatile Halogenated Compounds - Continued								
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	----	----	----
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	----	----	----
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	----	----	----
1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	----	----	----
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	----	----	----
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	----	----	----
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of other chlorinated hydrocarbons (VIC EPA 448.3)	----	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of other chlorinated hydrocarbons (VIC EPA 448.3)	----	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Total Xylenes	1330-20-7	0.50	mg/kg	<0.50	<0.50	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.62	----	----	----
2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.62	----	----	----
2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.62	----	----	----
4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.62	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.62	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.62	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.62	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<1.24	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.6	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	<0.62	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				EIIWANDA WETLAND	MURRAY RIVERSIDE	---	---	---
				09-AUG-2010 15:00	09-AUG-2010 15:00	---	---	---
Compound	CAS Number	LOR	Unit	EM1008926-001	EM1008926-002	---	---	---
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
Phenol	108-95-2	1	mg/kg	<1	<1	---	---	---
2-Methylphenol	95-48-7	1	mg/kg	<1	<1	---	---	---
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	---	---	---
2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	---	---	---
2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	---	---	---
2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	<49	---	---	---
4-Nitrophenol	100-02-7	5	mg/kg	<5	<49	---	---	---
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	<49	---	---	---
Dinoseb	88-85-7	5	mg/kg	<5	<49	---	---	---
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	<49	---	---	---
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	<1	---	---	---
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.6	---	---	---
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.6	---	---	---
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.6	---	---	---
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.6	---	---	---
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.6	---	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.6	---	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.6	---	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.6	---	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.6	---	---	---
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.6	---	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	<1.2	---	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.6	---	---	---
Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.6	---	---	---
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.6	---	---	---
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.6	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.6	---	---	---
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.62	---	---	---
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.62	---	---	---
beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.62	---	---	---
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.62	---	---	---
delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.62	---	---	---
Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.62	---	---	---
Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.62	---	---	---



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				EIIWANDA WETLAND	MURRAY RIVERSIDE	----	----	----
				09-AUG-2010 15:00	09-AUG-2010 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1008926-001	EM1008926-002	----	----	----
EP075I: Organochlorine Pesticides - Continued								
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.62	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.62	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.62	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.62	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.62	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.62	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.62	----	----	----
Endrin	72-20-8	0.03	mg/kg	<0.03	<0.62	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.62	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.62	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.62	----	----	----
4,4'-DDT	50-29-3	0.05	mg/kg	<0.05	<0.62	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.62	----	----	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	<0.62	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	<0.62	----	----	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	<0.05	<0.62	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	<0.62	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	<0.62	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	89.2	92.3	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	87.3	88.8	----	----	----
Toluene-D8	2037-26-5	0.1	%	90.7	92.3	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	90.1	89.7	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	99.4	80.0	----	----	----
Phenol-d6	13127-88-3	0.1	%	84.1	96.7	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	93.3	90.0	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	92.2	66.5	----	----	----
EP075T: Base/Neutral Extractable Surrogates								



Analytical Results

Sub-Matrix: SOIL

Client sample ID

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				EIIWANDA WETLAND	MURRAY RIVERSIDE			
				09-AUG-2010 15:00	09-AUG-2010 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1008926-001	EM1008926-002	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	0.1	%	60.3	83.9	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.1	%	79.9	110	----	----	----
2-Fluorobiphenyl	321-60-8	0.1	%	90.1	123	----	----	----
Anthracene-d10	1719-06-8	0.1	%	92.5	110	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	94.4	110	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	42.4	131
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80.0	120
Toluene-D8	2037-26-5	81.0	117
4-Bromofluorobenzene	460-00-4	74.0	121
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	16.0	142.2
Phenol-d6	13127-88-3	20.1	125.8
2-Chlorophenol-D4	93951-73-6	19.9	122.9
2,4,6-Tribromophenol	118-79-6	10.0	134.6
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	24.5	123.2
1,2-Dichlorobenzene-D4	2199-69-1	24.3	122.9
2-Fluorobiphenyl	321-60-8	35.1	125.3
Anthracene-d10	1719-06-8	40.8	129.9
4-Terphenyl-d14	1718-51-0	39.1	141.3