


ENVIRONMENTAL MANAGEMENT SERVICES			
Review of Monitoring Results			
GENERAL			
CLIENT:	METROMIX PTY LTD		
PROJECT NO./LOCATION:	215 - MARRANGAROO		
CONTACT PERSON:	Mr Daniel Lythgo		
SAMPLES			
Type:	Deposited Dust	No of Samples:	4
Sample Period:	01/09/2016 to 04/10/2016	Date despatched :	N/A
Submission Sheet received by Corkery & Co:	No	Date Received:	
Date Received by ALS	13/10/2016	Batch No:	26005800
Results Received by RWC:	18/10/2016		
REVIEW OF RESULTS			Comments
Results Entered/Accepted	Yes		
Comparison with Previous Results	Yes		
Statistical Analysis	Yes		
DISTRIBUTION OF RESULTS			
Result Sheets to Client:	Yes	Result Sheets to Residents:	No
Summary Sheets to Client:	Yes	Summary Sheets to Residents:	No
COMMENTS			
<p>Deposited dust monitoring results for the period from 1 September 2016 to 4 October 2016 indicate that deposited dust levels at point locations MD-2, MD-3, MD-4 and MD-5 are within approved EPA annual average guideline levels.</p>			
ACTION			
No action is necessary			
SIGNED:	 Lauren Clear		DATE: 18/10/2016

**METROMIX MARANGAROO QUARRY
DUST DEPOSIT GAUGE ANALYSES - PROJECT #215**

SAMPLING PERIOD	MD-2			MD-3			MD-4			MD-5 [‡]		
	Insoluble Matter	Ash Content	% Ash	Insoluble Matter	Ash Content	% Ash	Insoluble Matter	Ash Content	% Ash	Insoluble Matter	Ash Content	% Ash
EPA Annual Average Guideline	4.0 (Annual Av)			4.0 (Annual Av)			4.0 (Annual Av)			4.0 (Annual Av)		
18-Jan-11 to 25-Feb-11	0.1	0.1	100	0.2	0.1	50	0.1	0.1	100.0			
25-Feb-11 to 31-Mar-11	2.2	1.7	77	4.0	2.9	73	1.4	0.6	42.9			
01-Apr-11 to 05-May-11	0.4	0.2	50	0.4	0.2	50	0.6	0.3	50.0			
06-May-11 to 06-Jun-11	0.4	0.2	50	0.6	0.4	67	0.5	0.3	60.0			
06-Jun-11 to 08-Jul-11	NC	NC	NC	NC	NC	NC	NC	NC	NC			
08-Jul-11 to 25-Aug-11	1.1	0.7	64	1.4	1.0	71	0.8	0.5	62.5			
25-Aug-11 to 05-Sep-11	0.6	0.4	67	1.1	0.8	73	1.2	0.8	66.7			
05-Oct-11 to 01-Nov-11	0.4	0.3	75	0.6	0.3	50	0.4	0.4	100.0			
01-Nov-11 to 02-Dec-11	0.9	0.5	56	0.7	0.5	71	0.5	0.4	80.0			
02-Dec-11 to 22-Dec-11	11.4	10.1	88.6	1.4	1.0	71.4	0.7	0.6	85.7			
22-Dec-11 to 31-Jan-12	2.5	2.0	80.0	0.7	0.6	85.7	0.4	0.3	75.0			
31-Jan-12 to 2-Mar-12	1.5	0.8	53.3	0.4	0.3	75.0	0.3	0.3	100.0			
02-Mar-12 to 2-Apr-12	1.2	0.6	50.0	0.3	0.3	100.0	0.9	0.5	55.6			
02-Apr-12 to 1-May-12	0.2	0.2	100.0	0.2	0.2	100.0	0.4	0.3	75.0			
01-May-12 to 31-May-12	0.8	0.6	75.0	0.4	0.2	50.0	0.7	0.6	85.7			
31-May-12 to 02-Jul-12	0.7	0.3	42.9	0.6	0.3	50.0	0.5	0.3	60.0			
02-Jul-12 to 02-Aug-12	0.2	0.2	100.0	0.4	0.3	75.0	0.4	0.3	75.0			
02-Aug-12 to 03-Sep-12	0.4	0.3	75.0	1.3	0.8	61.5	1.2	0.8	66.7			
03-Sep-12 to 02-Oct-12	1.3	0.8	61.5	1.0	0.9	90.0	2.0	1.2	60.0			
02-Oct-12 to 01-Nov-12	0.5	0.3	60.0	1.4	1.2	85.7	0.8	0.6	75.0			
01-Nov-12 to 03-Dec-12	1.7	0.9	52.9	2.2	1.4	63.6	1.2	0.7	58.3			
03-Dec-12 to 03-Jan-13	1.0	0.7	70.0	2.0	1.4	70.0	0.7	0.5	71.4			
03-Jan-13 to 31-Jan-13	1.7	0.8	47.1	1.2	0.9	75.0	1.3	1.0	76.9			
31-Jan-13 to 5-Mar-13	6.7	3.4	50.7	2.6	2.1	80.8	0.6	0.4	66.7			
05-Mar-13 to 2-Apr-13	0.5	0.4	80.0	0.3	0.2	66.7	0.3	0.2	66.7			
02-Apr-13 to 8-May-13	0.4	0.4	100.0	0.2	0.2	100.0	0.3	0.2	66.7			
08-May-13 to 4-Jun-13	0.8	0.6	75.0	0.4	0.4	100.0	0.6	0.4	66.7			
04-Jun-13 to 1-Jul-13	0.9	0.5	55.6	0.6	0.3	50.0	0.7	0.3	42.9			
01-Jul-13 to 2-Aug-13	1.2	0.9	75.0	0.4	0.3	75.0	0.7	0.3	42.9			
02-Aug-13 to 4-Sep-13	3.2	2.8	87.5	0.5	0.5	100.0	0.7	0.5	71.4			
04-Sep-13 to 1-Oct-13	1.5	1.3	86.7	1.0	0.8	80.0	1.1	0.6	54.5			
01-Oct-13 to 5-Nov-13	1.1	1.0	90.9	1.2	1.0	83.3	1.5	1.2	80.0			
05-Nov-13 to 2-Dec-13	1.4	0.9	64.3	0.9	0.6	66.7	1.6	0.9	56.3			
02-Dec-13 to 6-Jan-14	0.6	0.3	50.0	1.1	0.6	54.5	1.1	0.8	72.7			
06-Jan-14 to 3-Feb-14	0.2	0.2	100.0	0.3	0.3	100.0	1.2	0.7	58.3			
03-Feb-14 to 5-Mar-14	1.0	0.4	40.0	1.2	0.6	50.0	1.0	0.5	50.0			
05-Mar-14 to 2-Apr-14	0.8	0.5	62.5	0.8	0.5	62.5	0.7	0.4	57.1			
02-Apr-14 to 2-May-14	0.5	0.3	60.0	0.4	0.3	75.0	0.5	0.3	60.0			
02-May-14 to 2-Jun-14	0.4	0.2	50.0	0.4	0.2	50.0	0.5	0.3	60.0			
02-Jun-14 to 1-Jul-14	0.3	0.3	100.0	0.6	0.6	100.0	0.6	0.3	50.0			
01-Jul-14 to 7-Aug-14	2.6	2.2	84.6	0.4	0.3	75.0	0.1	0.1	50.0			
07-Aug-14 to 2-Sep-14	2.4	2.1	87.5	1.3	1.0	76.9	0.3	0.1	16.7			
02-Sep-14 to 1-Oct-14	0.2	0.1	50.0	1.2	0.5	41.7	0.4	0.2	50.0			
01-Oct-14 to 3-Nov-14	1.1	0.4	36.4	2.4	1.0	41.7	0.6	0.2	33.3			
03-Nov-14 to 2-Dec-14	0.8	0.4	50.0	1.2	0.8	66.7	1.4	0.7	50.0			
02-Dec-14 to 5-Jan-15	0.8	0.2	25.0	1.3	0.6	46.2	2.8	1.1	39.3			
05-Jan-15 to 2-Feb-15	1.3	0.1	7.7	0.1	0.1	100.0	0.4	0.1	25.0			
02-Feb-15 to 2-Mar-15	1.1	0.6	54.5	0.7	0.4	57.1	0.8	0.4	50.0			
02-Mar-15 to 1-Apr-15	0.2	<0.1	<50	0.2	0.1	50.0	0.3	<0.1	<33			
01-Apr-15 to 1-May-15	0.9	0.3	33.3	1.1	0.3	27.3	<0.1	<0.1	<100			
01-May-15 to 1-Jun-15	0.5	0.4	80.0	1.0	0.3	30.0	<0.1	<0.1	<100			
01-Jun-15 to 18-Jul-15†	0.8	0.5	62.5	0.8	0.1	12.5	0.8	0.3	37.5			
18-Jul-15 to 3-Aug-15†	0.7	0.4	57.1	<0.1	<0.1	<100	<0.1	<0.1	<100			
03-Aug-15 to 1-Sep-15	0.8	0.5	62.5	0.8	0.4	50.0	0.3	<0.1	<33			
01-Sep-15 to 7-Oct-15	0.4	0.1	25.0	0.1	<0.01	<10	<0.1	<0.1	<100			
07-Oct-15 to 4-Nov-15	3.8	3.0	78.9	1.5	0.8	53.3	2.0	0.7	35.0			
04-Nov-15 to 4-Dec-15	0.2	<0.1	<50.0	1.7	0.7	41.2	<0.1	<0.1	<100			
04-Dec-15 to 5-Jan-16	1.1	0.5	45.5	2.1	0.8	38.1	0.1	<0.1	<100			
5-Jan-16 to 1-Feb-16	1.4	0.6	42.9	0.6	0.2	33.3	2.0	0.5	25.0			
1-Feb-16 to 3-Mar-16	0.5	0.2	40.0	0.4	0.2	50.0	1.4	0.6	42.9			
3-Mar-16 to 1-Apr-16	1.1	0.7	63.6	0.4	0.2	50.0	1.8	0.9	50.0			
1-Apr-16 to 1-May-16	0.1	<0.1	<100.0	0.2	0.1	50.0	0.9	0.5	55.0	0.9	0.5	55.0
1-May-16 to 31-May-16	0.1	<0.1	<100.0	0.2	0.2	100.0	0.9	0.6	66.7	0.5	0.3	60.0
31-May-16 to 30-Jun-16	2.1	1.2	57.1	ND	ND	ND	ND	ND	ND	0.6	0.5	83.3
30-Jun-16 to 1-Aug-16	2.5	1.9	76.0	2.0	1.4	70.0	0.7	0.4	66.7	0.2	<0.1	ND
1-Aug-16 to 1-Sep-16	1.7	1.3	76.5	0.1	<0.1	ND	0.5	0.2	40.0	0.3	<0.1	ND
1-Sep-16 to 4-Oct-16	2.0	0.3	15.0	0.2	<0.1	<50.0	1.0	0.2	20.0	0.4	<0.1	<25.0
AVERAGE 1	1.4	0.8	62.1	0.9	0.4	57.8	1.0	0.4	54.7	0.5	0.3	51.2
AVERAGE 2	1.3	0.9	63.7	0.9	0.6	65.5	0.8	0.4	61.6	0.5	0.3	51.2
STANDARD DEVIATION 1	1.1	0.9	25.4	0.8	0.4	22.9	0.7	0.3	26.9	0.2	0.2	20.7
STANDARD DEVIATION 2	1.7	1.4	22.0	0.7	0.5	21.1	0.6	0.3	21.5	0.2	0.2	20.7

Units: grams per square metre per month

Note: Dust storms were evident in October 2002 due to drought conditions across NSW.

Av1/SD1 = 12 Month Rolling Average/Standard Deviation

Av2/SD2 = All samples from December 2001 excluding data from period 30 September 2002 to 1 November 2002

**Samples collected in May 2013 did not identify collection location ID. Not included in statistical analysis.

†Samples Collected in July 2015 and August 2015 were outside the 30 day sample collection period. Not included in statistical analysis.

‡ Sampling did not occur at this location until May 2016.

ND: Not determined

ND[†]: Broken by frost

DE: Documentation Error

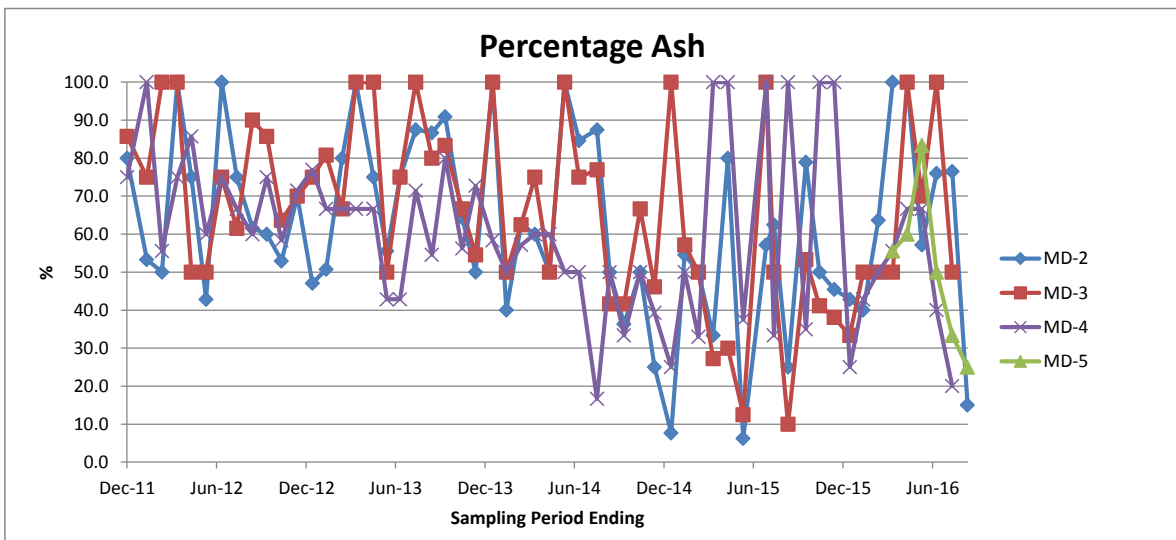
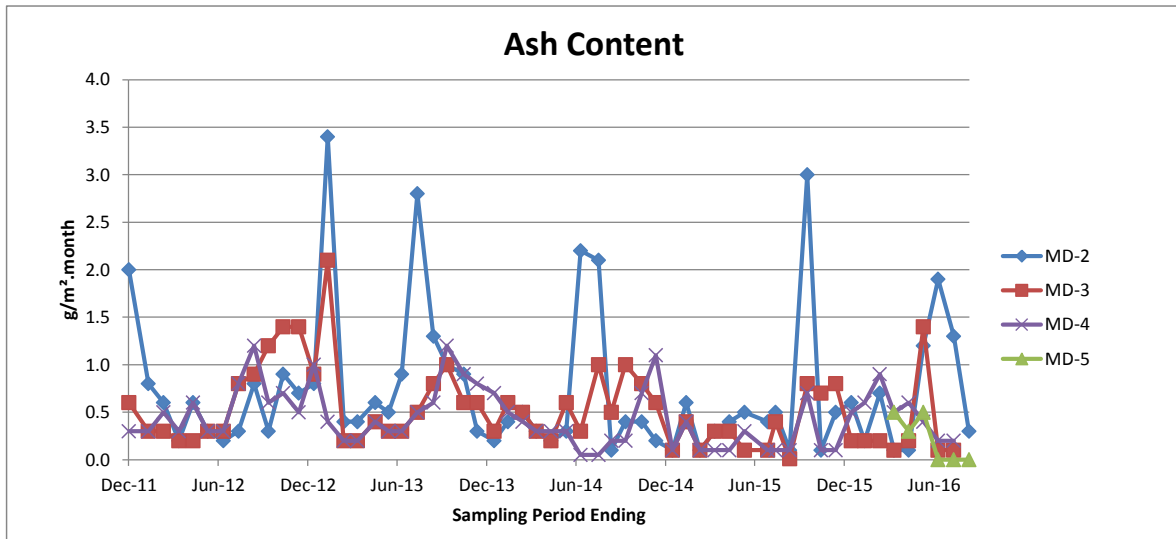
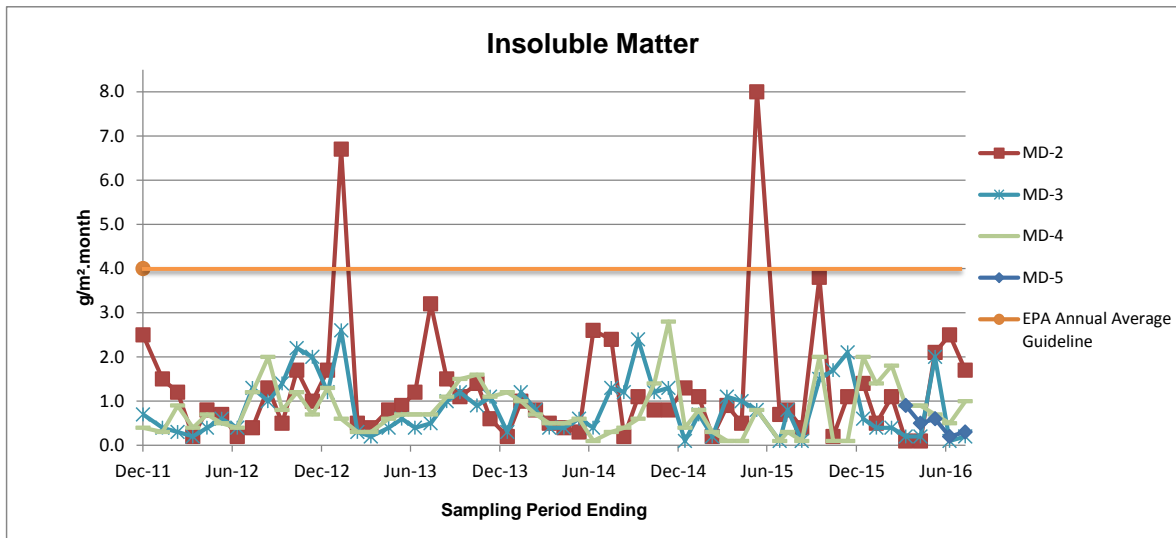
BD: Below Detection

NC: Not Collected



R.W. CORKERY & CO. PTY LIMITED

METROMIX MARANGAROO QUARRY DUST DEPOSIT GAUGE ANALYSES - PROJECT #215





CERTIFICATE OF ANALYSIS

Work Order : **26005800**
Client : **R W CORKERY & CO PTY LTD**
Contact : **MR ROB CORKERY**
Address : **P O BOX 239**
BROOKLYN NSW, AUSTRALIA 2083
E-mail : **rob@rwcorkery.com**
Telephone : **0263 625411**
Facsimile : **0263613622**
Project : **Marrangaroo**
Order number :
C-O-C number :
Sampler :
Site :
Quote number :

Page : **1 of 3**
Laboratory : **Coal Division Lithgow**
Contact : **Almudena Bryce**
Address : **Unit 2, 16 Donald Street**
LITHGOW NSW Australia 2790
E-mail : **Almudena.Bryce@alsglobal.com**
Telephone : **61-2-6350-7400**
Facsimile : **61-2-6352-3583**
QC Level :
Date Samples Received : **13-OCT-2016**
Issue Date : **18-OCT-2016**
No. of samples received : **4**
No. of samples analysed : **4**

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



NATA Accredited Laboratory 11436

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
Natalie McMillan

Position
Environmental Supervisor

Accreditation Category
Lithgow – Chemical Testing

ADDRESS Unit2, 16 Donald Street LITHGOW NSW Australia 2790 | PHONE +61 2 6350 7400 | FAX +61 2 6352 3583
ACIRL Pty Ltd ABN 41 000 513 888 Part of the ALS Group A Campbell Brothers Limited Company



www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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

- **Analysis as per AS3580.10.1-2003. Samples passed through a 1mm sieve prior to analysis.**
- **Period sampled: 01/09/2016-04/10/2016**



Analytical Results

Sub-Matrix: DUST (Matrix: AIR)

			Client sample ID		MD2	MD3	MD4	MD5	----
			Client sampling date/time		4-OCT-2016 10:00	4-OCT-2016 10:15	4-OCT-2016 10:20	4-OCT-2016 09:50	----
Compound	CAS Number	LOR	Unit	24005800-01	24005800-02	24005800-03	24005800-04	----	
EA120: Ash Content									
Ash Content		0.1	g/m ² .month	1.3	<0.1	0.2	<0.1	----	
Ash Content (mg)		1	mg	25.8	<0.01	3.6	<0.01	----	
Combustible Matter									
Combustible Matter		0.1	g/m ² .month	0.7	0.2	0.8	0.4	----	
Combustible Matter (mg)		1	mg	38.3	2.5	19.7	10.8	----	
Total Insoluble Matter									
Total Insoluble Matter		0.1	g/m ² .month	2.0	0.2	1.0	0.4	----	
Total Insoluble Matter (mg)		1	mg	64.1	2.5	23.3	10.8	----	



QUALITY CONTROL REPORT

Work Order	: 24005800	Page	: 1 of 4
Client	: R W Corkery & CO PTY LTD	Laboratory	: Coal Division Lithgow
Contact	: MR ROB CORKERY	Contact	: Almudena Bryce
Address	: PO BOX 239 BROOKLYN NSW, AUSTRALIA 2083	Address	: Unit 2, 16 Donald Street LITHGOW NSW Australia 2790
E-mail	: rob@rwcorkery.com	E-mail	: Almudena.Bryce@alsglobal.com
Telephone	: 0263 625411	Telephone	: 61-2-6350-7400
Facsimile	: 0263 613622	Facsimile	: +61-2-6352-3583
Project	: Marrangaroo	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	:	Date Samples Received	: 13-OCT-2016
C-O-C number	:	Issue Date	: 18-OCT-2016
Sampler	:	No. of samples received	: 4
Order number	:	No. of samples analysed	: 4
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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited
Laboratory 11436

Accredited for
compliance with
ISO/IEC 17025.

WORLD RECOGNISED
ACCREDITATION

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
Natalie McMillan	Environmental Supervisor	Lithgow-Chemical Testing



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.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 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
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Page : 3 of 4
Work Order : 26005800
Client : RW CORKERY & CO PTY LTD
Project : Marrangaroo



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**
-



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

- **No Method Blank (MB) or Laboratory Control Spike (SCS) Results are required to be reported.**

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) Results are required to be reported.**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**



Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: 24005800	Page	: 1 of 5
Client	: R W Corkery & CO PTY LTD	Laboratory	: Coal Division Lithgow
Contact	: MR ROB CORKERY	Contact	: Almudena Bryce
Address	: PO BOX 239 BROOKLYN NSW, AUSTRALIA 2083	Address	: Unit 2, 16 Donald Street LITHGOW NSW Australia 2790
E-mail	: rob@rwcorkery.com	E-mail	: Almudena.Bryce@alsglobal.com
Telephone	: 0263 625411	Telephone	: 61-2-6350-7400
Facsimile	: 0263 613622	Facsimile	: +61-2-6352-3583
Project	: Marrangaroo	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	:	Date Samples Received	: 13-OCT-2016
C-O-C number	:	Issue Date	: 18-OCT-2016
Sampler	:	No. of samples received	: 4
Order number	:	No. of samples analysed	: 4
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 Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

ADDRESS Unit2, 16 Donald Street LITHGOW NSW Australia 2790 | PHONE +61 2 6350 7400 | FAX +61 2 6352 3583
ACIRL Pty Ltd ABN 41 000 513 888 Part of the ALS Group A Campbell Brothers Limited Company



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: AIR

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA120: Ash Content							
Dust Gauge - Copper Sulfate (EA120) MD2 , MD3, MD4, MD5	04-OCT-2016	---	01-NOV-2016	----	05-OCT-2016	03-NOV-2016	✓
EA125: Combustible Matter							
Dust Gauge - Copper Sulfate (EA125) MD2 , MD3, MD4, MD5	04-OCT-2016	---	01-NOV-2016	----	05-OCT-2016	03-NOV-2016	✓
EA141: Total Insoluble Matter							
Dust Gauge - Copper Sulfate (EA141) MD2 , MD3, MD4, MD5	04-OCT-2016	---	01-NOV-2016	----	05-OCT-2016	03-NOV-2016	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Ash Content (AC)	EA120	AIR	AS 3580.10.1 - 2003 A gravimetric procedure reporting Ash content in deposited dust.
Combustible Matter (CM)	EA125	AIR	AS 3580.10.1 - 2003 A gravimetric procedure reporting Combustible Matter in deposited dust.
Total Insoluble Matter (TIM)	EA141	AIR	AS 3580.10.1 - 2003 A gravimetric procedure reporting Total Insoluble solids in deposited dust.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QW/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For all matrices, no Matrix Spike outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.