



JBS&G 52480-111008

L003 - Preliminary Soil Assessment - Wagga Wagga Rural Referral Hospital Rev 0

19 September 2017

Daniel Herbertson
Senior Project Manager
Savills Australia
Via email: dherbertson@savills.com.au

Subsurface Site Investigation, Stage 3
Wagga Wagga Rural Referral Hospital, Wagga Wagga, NSW

Dear Daniel,

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) was engaged by Savills Australia on behalf of Health Infrastructure (HI, the client) to undertake a subsurface site investigation within Stage 3 (located in the vicinity of the Old Hospital Building and Robinson House) at Wagga Wagga Rural Referral Hospital, Wagga Wagga, NSW (the site). The site is legally known as part of Lot 334 SP1190643 and the investigation area is approximately 7000m². The site location is shown on **Figure 1** and the site layout is shown on **Figure 2**.

It is understood that the Old Hospital Building and Robinson House are to be demolished and redeveloped as part of an upgrade of the hospital facilities. Following the demolition of the former ward tower building directly to the east of the Old Hospital Building, unexpected sub surface contamination was encountered as friable asbestos within soils in the basement areas of the former structure. It is suspected that historical asbestos remediation or management works in that area have taken place, including the placement of shotcrete over exposed surfaces in the basement assumed to have been undertaken for the purpose of encapsulation of residual asbestos contamination in the area. No documented records of asbestos remediation works were held by the hospital.

A previous investigation (Preliminary Sub Surface Soil Assessment – Old Hospital Building, JBS&G (16 June 2017)) identified friable asbestos beneath the original hospital building beneath a layer of sprayed shotcrete below the Old Hospital Building. The results of the previous investigation (HA01-HA14) are included within the results summary table presented in **Attachment 4**.

The main hospital building is understood to have been constructed circa 1908 with the extensions to the west occurring circa 1922. The construction date of Robinson House is unknown, however is believed to be prior to 1950.

This subsurface soil investigation was requested to attempt to identify any occurrences of contamination in accessible areas beneath and surrounding the buildings within Stage 3 prior to demolition works commencing, so that appropriate management and/or additional investigations may be undertaken to appropriately characterise the condition of the site to assist in future planning for the site's redevelopment and for the information of demolition contractors.

This investigation is preliminary in nature and is not intended to provide a statement on proposed land use suitability.

2. Objective

The objective of the investigation was to identify, if any, the presence of asbestos impact and other contaminants of potential concern (COPC) in readily accessible areas in the vicinity of Stage 3 prior to proposed demolition works.

3. Scope of Works

The following scope of works was undertaken for the current investigation:

- Collection of representative soil samples from 26 locations via surface grab samples or hand auger to a depth of 1m below ground surface (bgs) or refusal, whichever was shallower, in readily accessible areas as requested by the client, identified areas of concern, or in a general grid pattern. The soil sampling locations were restricted to accessible areas at the site due to the presence of operation buildings, hardstand areas, services and other aspects restricting access for sampling.
- Collection of duplicate/triplicate samples for quality assurance / quality control purposes;
- Laboratory analysis of selected soil samples by Eurofins | mgt, a National Association of Testing Authorities (NATA) accredited laboratory to assess for the presence of asbestos containing material (ACM), friable asbestos (FA) and asbestos fines (AF) in accordance with NEPC (2013)¹;
- Laboratory analysis of selected soil samples by Eurofins | mgt, a NATA accredited laboratory to assess for the presence of other COPC including heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCBs) and organochlorine pesticides (OCPs).
- Comparison of soil analytical results against NEPC (2013) health-based investigation levels (HILs) applicable to the hospital use of the site and development works; and
- Preparation of this letter report documenting the findings of the assessment, conclusions and recommendations (if any).

4. Relevant Site Assessment Criteria

Soil data as generated by this investigation has been compared to health-based investigation and screening levels advised by NEPC (2013) for residential land uses with minimal access to soils (HIL/HSL-B). Though a hospital is used for a commercial/industrial purpose, the selection of more sensitive residential with minimal soil access criteria rather than commercial/industrial land use criteria is consistent with NEPC (2013) guidance, as noted below.

Schedule B7 of NEPC 2013 states “... the HILs developed for the commercial/industrial land use scenario are not applicable to a site used frequently by more sensitive groups such as children (within childcare centres, hospitals and hotels) and the elderly (within hospitals, aged care facilities and hospices).” Therefore, given the frequent site use by sensitive receptor groups (i.e., children, elderly and immunocompromised), the use of the generic commercial / industrial land use scenario provided in NEPC 2013 is considered inappropriate for the long term site use as a health services facility (i.e., hospital and associated services).

¹ National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), National Environment Protection Council, 2013 (NEPC 2013).

5. Site Works – 30 & 31 August and 1 September June 2017

The field inspection and sampling activities were undertaken by Kiu Yeung, one of JBS&G's experienced environmental consultants, on 30 & 31 August and 1 September 2017.

A summary of the completed works is as follows:

- The investigation area was limited to Stage 3, which is located in the north western portion of the Wagga Wagga Referral Hospital as shown in **Figure 1**.
- Hand auger locations HA01-HA14 were previously installed at the site in June 2017. Locations are shown on **Attachment 2 – Figure 3**.
- Hand auger HA21 was installed through the base of the empty swimming pool following concrete coring of the tile and concrete base. Locations are shown on **Attachment 2 – Figure 3**.
- Hand augers HA24, HA25, HA26, HA27 were completed following concrete coring through overlying concrete hardstand. Locations are shown on **Attachment 2 – Figure 3**.
- Locations HA23, HA30, HA38, HA39 and HA40 were surface soil samples collected from access hatches within or outside the buildings to collect samples below the elevated floor. Locations are shown on **Attachment 2 – Figure 3**.
- Locations HA25 and HA31 were collected through the floor of Robinson House while locations HA32 and HA33 were collected through the floorboards in the Old Hospital Building.
- All remaining locations were completed in unsealed areas (i.e. gardens, grass and construction). Locations are shown on **Attachment 2 – Figure 3**.
- Refusal on concrete within the fill material (potentially a secondary concrete slab or footings) was encountered at locations HA16, HA18 and HA19.
- Representative samples were collected from all hand auger/grab sample locations from the surface soils.
- Duplicate and triplicate samples were collected at HA28 0-0.1 and HA35 0-0.1 for quality assurance and quality control purposes.
- Selected samples were forwarded to the NATA accredited testing laboratory for analysis (**Attachment 5**).

Hand auger locations are provided on **Figure 3** in **Attachment 2**. Representative photographs of the site condition and select samples are provided in **Attachment 3**.

6. Results

6.1 Field Observations

Field observation made during the investigation included:

- The Old Hospital Building was observed to comprise a two level predominantly brick structure in the central and eastern portion of the investigation area.
- Robinson House comprised a single storey brick building located in the western portion of the investigation area.
- A hydrotherapy pool was located in the south western portion of the investigation area. The pool was empty of water at the time of investigation.

- A temporary café was located to the north east of the Old Hospital Building. Two temporary laboratory buildings were also observed to the north of the Old Hospital Building.
- A demountable building was observed to the north of Robinson House at the time of investigation.
- Fill material (outside the building footprint) was generally consistent comprising of brown or dark brown silty sand or sandy clay and ranged in depth between 0.15 and 0.5 m below surface level. The fill material containing minor amount of gravel, concrete, ceramics, brick and ash/charcoal inclusions at some locations.
- Fill material within the building footprint comprised silty gravelly sand, gravelly silt or silt. Due to limited access, the extent of the fill material is unknown as natural soils were not reached.
- Sandy gravel and sand was observed beneath the base of the swimming pool.
- Potential asbestos containing materials (consisting of fibre cement sheeting) was observed beneath the old hospital building.

6.2 Analytical Results

Detailed laboratory reports and chain of custody documentation is provided in **Attachment 5**. Sampling locations are provided on **Figure 3**.

A summary of notable results from the current investigation is as follows:

- Potential ACM materials were observed beneath the floor of the Old Hospital Building (consisting of fibre cement sheeting), however samples could not be collected due to access constraints.
- Friable asbestos (Asbestos Fines and Fibrous Asbestos) was reported above the HIL-B threshold (0.001% w/w) in soil sample HA38_0-0.03 with a concentration of 0.0021% w/w.
- Soil sample HA31 0.75-0.85 contained asbestos fibres, however these were below the laboratory limit of reporting and below the adopted criteria.
- A concentration of 4mg/kg of carcinogenic PAHs as benzo(a)pyrene toxicity equivalent quotient (BaP TEQ) was report in sample HA24 0.12-0.22 which is equal to the adopted criteria for the protection of human health. The remaining samples reported concentrations below the laboratory limit of reporting or the adopted human health criteria.
- Samples HA30_0-0.05 and HA31 0.75-0.85 identified concentrations of dieldrin (1.3mg/kg and 0.94mg/kg respectively) and chlordane (5.4mg/kg and 1.6mg/kg respectively). While these are below HIL and therefore do not pose an unacceptable health risk, the concentrations require appropriate regulatory controls under CCO for waste management soils at this location should soils be removed from site.
- The duplicate samples (QC01 & QC02) reported results that were considered to be generally consistent with those reported from the primary samples (HA28 0-0.1 & HA35 0-0.1).

7. Conclusions & Recommendations

Based on the observations made during the completed site works, the data obtained from this investigation and subject to the limitations in **Attachment 1**, the following conclusions are made:

- Possible shotcrete was observed beneath Robinson House, however access to this area could not be undertaken due to the confined space beneath the floor.

- Potential ACMs were observed in fibre cement sheeting fragments beneath the old hospital building.
 - Friable asbestos contamination was identified within the sub surface soils sampled from below the old hospital building (HA38 0-0.03m). Sample HA31 0.75-0.85m contained asbestos fibres, however these were below the laboratory limit of reporting and below the adopted criteria.
 - Elevated levels of PAHs (and previously lead) in soils pose a potential risk to demolition workers whom are potentially directly exposed to site soils. In addition to controls anticipated with mitigation of asbestos fibre exposures, potential direct contact to affect soils will require to be controlled throughout the redevelopment of the site.
 - Carcinogenic PAHs (as B(a)P TEQ), lead and asbestos may present a potential issue for future land use suitability, however, additional investigation is likely to be required to determine the sites suitability for the proposed future land use in line with NEPC 2013 requirements.
 - All concentrations of dieldrin and chlordane were identified below the human health criteria, however samples HA30 0-0.5 and HA31 0.75-0.85 contained concentrations that would require regulation under the *Chemicals Control Order in Relation to Scheduled Chemical Wastes 2004* should the soils be disposed offsite during redevelopment works.
 - Additional targeted soil sampling of proposed waste materials is recommended to be undertaken prior to any off site disposal.
 - Following demolition of the buildings at the site and provision of approved development plans, a site inspection and further investigation should be undertaken to assess the extent of shotcrete and ACM, lead and OCPs at the site to ensure appropriate procedures are undertaken prior to excavation works.
-

Should you require clarification, please contact the undersigned on 02 8245 0300 or by email
sburrows@jbsg.com.au.

Yours sincerely:



Scott Burrows
Senior Environmental Consultant
JBS&G Australia Pty Ltd

Reviewed/Approved by:



Matthew Bennett
Principal – Contaminated Land
JBS&G Australia Pty Ltd

Attachments

- 1) Limitations
- 2) Figures
- 3) Photographs
- 4) Results Summary Table
- 5) Laboratory Analysis Reports

Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

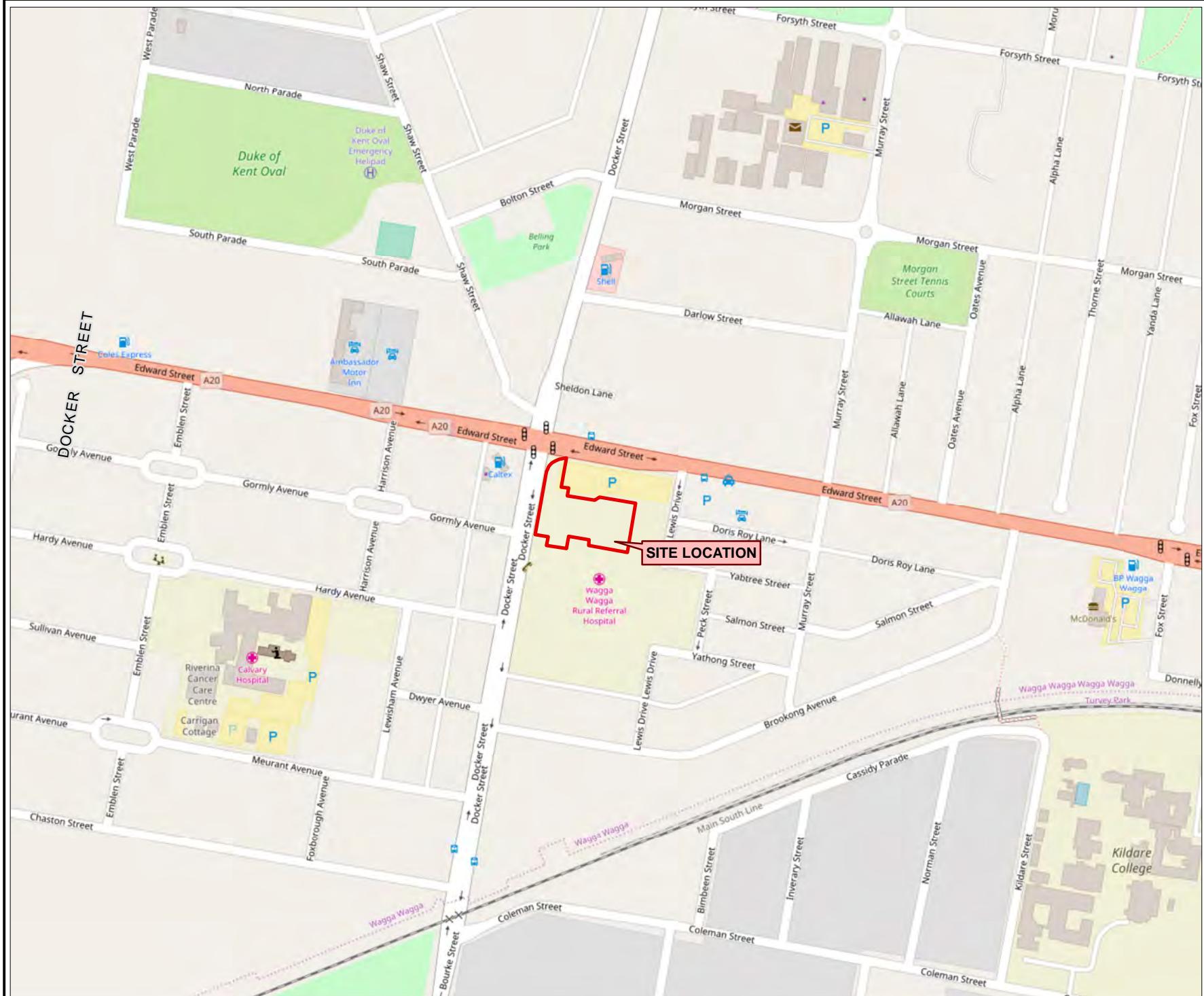
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Attachment 2 – Figures



Legend:
■ Approximate Site Boundary



Job No: 52480

Client: Health Infrastructure

Version: L003 Rev 0 Date: 05-Sep-2017

Drawn By: BC Checked By: KY

Scale 1:6,000

0 70 140
metres

Coor. Sys. GDA 1994 MGA Zone 55

Sturt Highway & Docker Street
Wagga Wagga, NSW

SITE LOCATION

FIGURE 1



Legend:
■ Approximate Site Boundary



Job No: 52480

Client: Health Infrastructure

Version: L003 Rev 0 Date: 19-Sep-2017

Drawn By: AV Checked By: SB

Scale 1:800



0 9.5 19

metres

Coor. Sys. GDA 1994 MGA Zone 55

Sturt Highway & Docker Street
Wagga Wagga, NSW

SITE LAYOUT

FIGURE 2



Job No: 52480

Client: Health Infrastructure

Version: L003 Rev 0 Date: 19-Sep-2017

Drawn By: BC Checked By: SB

Scale 1:800



0 9.5 19

metres

Coor. Sys. GDA 1994 MGA Zone 55

Sturt Highway & Docker Street
Wagga Wagga, NSW

SAMPLE LOCATIONS

FIGURE 3

Attachment 3 – Photographs

	
<p>Photo 1 – General fill material beneath the footprint of the old Hospital Building.</p>	<p>Photo 2 – Fill material at HA21 beneath the hydrotherapy pool.</p>
	
<p>Photo 3 – General area of HA15, HA16, HA17 and HA18.</p>	<p>Photo 4 – Soil below the Old Hospital Building from access hatch.</p>

Attachment 4 – Results Summary Table

Table A: Soil Analytical Results
Project Number: 52480
Project Name: Wagga Wagga Rural Referral Hospital



Statistical Summary

Table A: Soil Analytical Results
Project Number: 52480
Project Name: Wagga Wagga Rural Referral Hospital



Attachment 5 – Laboratory Analysis Reports

07299

P. 1 of 2



CHAIN OF CUSTODY

PROJECT NO.: 524f	PROJECT NAME: WAGGA WAGGA	DATE NEEDED BY: STD TA	LABORATORY BATCH NO.: K4								
SAMPLERS: K4	QC LEVEL: NEPM (2013)										
PHONE: Sydney: 02 8245 0300 Perth: 08 9488 0100 Brisbane: 07 3112 2688											
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) S.blairrows@jbsg.com.au; (3) kyeurn@jbsg.com.au m.samuel@jbsg.com.au											
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:											
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	JB2A PH GCC 1 day	BTEX	JB2 Hold	TYPE OF ASBESTOS ANALYSIS	IDENTIFICATION NEPM/NA	NOTES:
HA15: 0-0-25	Soil	30/8		JAR + BAG + ICE.		X					X
HA15: 0-3-0-35				JAR + ICE				X			
HA15: 0-35-0-45				JAR + BAG + ICE				X			
HA16: 0-0-15						X					X
HA16: 0-15-0-25								X			
HA17: 0-0-1								X			
HA17: 0-2-0-3						X					X
HA17: 0-5-0-6								X			
HA18: 0-0-0-5								X			
HA18: 0-0-15						X					X
HA19: 0-1-0-2						X	X	X			X
HA20: 0-0-1						X					X
HA21: 0-25-0-35		31/8				X					X
HA22: 0-0-1						X					X
HA22: 0-2-0-3								X			
HA23: 0-0-0-5						X					X
HA24: 0-1-0-12				JAR + ICE				X			
HA24: 0-12-0-24				JAR + BAG + ICE		X					X
HA25: 1-3-1-4						X					X
RELINQUISHED BY:	METHOD OF SHIPMENT:				RECEIVED BY:		FOR RECEIVING LAB USE ONLY:				
NAME: DATE:	CONSIGNMENT NOTE NO.				NAME: <i>Reagan</i>	DATE: <i>05/09</i>	COOLER SEAL - Yes No Intact Broken				
OF: JBS&G	TRANSPORT CO.				DATE: <i>10:30 AM</i>	deg C <i>9.2C</i>	COOLER TEMP deg C				
NAME: DATE:	CONSIGNMENT NOTE NO.				NAME: <i></i>	DATE: <i></i>	COOLER SEAL - Yes No Intact Broken				
OF: <i></i>	TRANSPORT CO				NAME: <i></i>	DATE: <i></i>	COOLER TEMP deg C				

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO Forms013 - Chain of Custody - Generic

07300

CHAIN OF CUSTODY

R.2 of 2



PROJECT NO.:	52480
PROJECT NAME:	WAGGA WAGGA
DATE NEEDED BY:	5/10/17

LABORATORY BATCH NO.:	
SAMPLERS:	KY MZ
QC LEVEL:	NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@bsg.com.au; (2) ...@bsg.com.au; (3) ...@bsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TYPE OF ASBESTOS ANALYSIS						NOTES:	
						JBS&G	PCP	C&C	N&C	Glass	BTEX	SO2	
HA26: 0-0-0.3	Soil	3/18		JAR + BAG + ICE		X							X
HA27: 0-0-0.35						XX							X
HA28: 0-0-1						XX							X
HA29: 0-0-1						X							X
HA30: 0-0-0.5						XX							X
HA31: 0-75-0.8						XX							X
HA32: 0-60-0.63						X							X
HA33: 0-90-0.98						XXX							X
HA34: 0-0-1						X							X
HA35: 0-0-1						X							X
HA36: 0-0-1			↓			X							X
HA37: 0-0-1		1/9				X							X
HA38: 0-0-0.3						X							X
HA39: 0-0-0.3						X							X
HA40: 0-0-0.3			↓			X							X
(QCO1)		3/18				X							X
(QCO2)		↓	↓			X							X
TS SB	WATER	3/18		VIALS + ICE					X				
				↓					X				

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: K.Yewng DATE: 5/9/17	CONSIGNMENT NOTE NO.	NAME: <i>Rupam</i> DATE: 05/09/17	COOLER SEAL - Yes No Intact Broken
OF: JBS&G	TRANSPORT CO.	OF: 10:30 AM	COOLER TEMP deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL - Yes No Intact Broken
OF:	TRANSPORT CO	OF:	COOLER TEMP deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd.; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO Forms013 - Chain of Custody - Generic

RINSE

WATER 30/8

BOTTLES + ICE

JB2

X

RINSE

WATER 31/8

v1

X

Enviro Sample NSW

*Rupan
05/09*

From: Kiu Yeung <KYeung@jbsg.com.au>
Sent: Tuesday, 5 September 2017 1:59 PM
To: Enviro Sample NSW
Cc: Michael Samuel; Scott Burrows; Nibha Vaidya
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 561673 : Site WAGGA WAGGA (52480)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Rupan,

Please kindly see the following.

Broken Jars for samples HA16_0.15-0.25 and HA24_0.1-0.12. Empty Bags received for samples HA24_0.1-0.12.
The above samples (HA16_0.15-0.25 and HA24_0.1-0.12) are listed to be on hold, so please place the bags on hold for now.
For HA24_0.1-0.12, only jar is listed in the COC and to be placed on hold, please don't worry about the bag.

No jar received for HA17_0.5-0.6.

The above sample is listed to be on hold, so please place the bag on hold and cancel the jar.

Sample HA18_0-0.05 not received at all, hence cancelled.

That's fine, thanks.

2x RINSATE samples received dated 30/08 and 31/08, placed on HOLD.

Please schedule JB2 analysis for the 2 x RINSATE samples as per listed at the bottom of Page 2 COC.

Should there be any questions, please do not hesitate to call.

Kind Regards,
Kiu



Kiu Yeung | Environmental Consultant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Scott Burrows
 Project name: WAGGA WAGGA
 Project ID: 52480
 COC number: Not provided
 Turn around time: 5 Day
 Date/Time received: Sep 5, 2017 10:30 AM
 Eurofins | mgt reference: **561673**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
 - Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 9.2 degrees Celsius.
 - All samples have been received as described on the above COC.
 - COC has been completed correctly.
 - Attempt to chill was evident.
 - Appropriately preserved sample containers have been used.
 - All samples were received in good condition.
 - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
 - Appropriate sample containers have been used.
 - Sample containers for volatile analysis received with zero headspace.
 - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Broken Jars for samples HA16_0.15-0.25 and HA24_0.1-0.12. Empty Bags received for samples HA24_0.1-0.12. No jar received for HA17_0.5-0.6. Sample HA18_0-0.05 not received at all, hence cancelled. 2x RINSATE samples received dated 30/08 and 31/08, placed on HOLD.

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

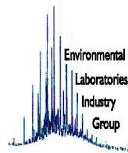
Results will be delivered electronically via e.mail to Scott Burrows - SBurrows@jbsg.com.au.



Environmental Laboratory
 Air Analysis
 Water Analysis
 Soil Contamination Analysis

NATA Accreditation
 Stack Emission Sampling & Analysis
 Trade Waste Sampling & Analysis
 Groundwater Sampling & Analysis

38 Years of Environmental Analysis & Experience



Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217			X		X		X			X	
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X			X					
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	HA15_0-0.25	Aug 30, 2017		Soil	S17-Se03921	X			X		X
2	HA16_0-0.15	Aug 30, 2017		Soil	S17-Se03922	X			X		X
3	HA17_0.2-0.3	Aug 30, 2017		Soil	S17-Se03923	X			X		X
4	HA18_0.05-0.15	Aug 30, 2017		Soil	S17-Se03924	X			X		X
5	HA19_0.1-0.2	Aug 30, 2017		Soil	S17-Se03925	X	X		X	X	X
6	HA20_0-0.1	Aug 30, 2017		Soil	S17-Se03926	X			X		X
7	HA21_0.25-0.35	Aug 31, 2017		Soil	S17-Se03927	X			X		X
8	HA22_0-0.1	Aug 31, 2017		Soil	S17-Se03928	X			X		X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
		Phone:	02 8245 0300	Priority:	5 Day
		Fax:		Contact Name:	Scott Burrows
Project Name:	WAGGA WAGGA				
Project ID:	52480				

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X
Sydney Laboratory - NATA Site # 18217						X		X		X	X
Brisbane Laboratory - NATA Site # 20794					X						
Perth Laboratory - NATA Site # 23736						X			X		
9	HA23_0-0.05	Aug 31, 2017		Soil	S17-Se03929		X				X
10	HA24_0.12-0.22	Aug 31, 2017		Soil	S17-Se03930		X				X
11	HA25_1.3-1.4	Aug 31, 2017		Soil	S17-Se03931		X				X
12	HA26_0.08-0.3	Aug 31, 2017		Soil	S17-Se03932		X				X
13	HA27_0.22-0.35	Aug 31, 2017		Soil	S17-Se03933		X				X
14	HA28_0-0.1	Aug 31, 2017		Soil	S17-Se03934		X				X
15	HA29_0-0.1	Aug 31, 2017		Soil	S17-Se03935		X				X
16	HA30_0-0.05	Aug 31, 2017		Soil	S17-Se03936		X				X
17	HA31_0.75-0.85	Aug 31, 2017		Soil	S17-Se03937		X				X
18	HA32_0.60-	Aug 31, 2017		Soil	S17-Se03938		X				X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X	X
Sydney Laboratory - NATA Site # 18217					X		X		X		X
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736				X				X			
0.63											
19	HA33_0.90-0.95	Aug 31, 2017		Soil	S17-Se03939	X	X		X	X	X
20	HA34_0-0.1	Aug 31, 2017		Soil	S17-Se03940		X				X
21	HA35_0-0.1	Aug 31, 2017		Soil	S17-Se03941		X				X
22	HA36_0-0.1	Aug 31, 2017		Soil	S17-Se03942		X				X
23	HA37_0-0.1	Sep 01, 2017		Soil	S17-Se03943		X				X
24	HA38_0-0.03	Sep 01, 2017		Soil	S17-Se03944		X				X
25	HA39_0-0.03	Sep 01, 2017		Soil	S17-Se03945		X				X
26	HA40_0-0.03	Sep 01, 2017		Soil	S17-Se03946		X				X
27	QC01	Aug 31, 2017		Soil	S17-Se03947		X				X
28	QC02	Aug 31, 2017		Soil	S17-Se03948		X				X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
						X	X	X			X
Sydney Laboratory - NATA Site # 18217											
						X					
Brisbane Laboratory - NATA Site # 20794						X					
Perth Laboratory - NATA Site # 23736							X				
29	TS	Aug 30, 2017		Water	S17-Se03949						X
30	TB	Aug 30, 2017		Water	S17-Se03950						X
31	HA15_0.35-0.45	Aug 30, 2017		Soil	S17-Se03951			X			
32	HA17_0-0.1	Aug 30, 2017		Soil	S17-Se03952			X			
33	HA17_0.5-0.6	Aug 30, 2017		Soil	S17-Se03953			X			
34	HA18_0-0.05	Aug 30, 2017		Soil	S17-Se03954		X				
35	HA22_0.2-0.3	Aug 30, 2017		Soil	S17-Se03955			X			
36	HA24_0.1-0.12	Aug 30, 2017		Soil	S17-Se03956		X				
37	HA16_0.15-0.25	Aug 30, 2017		Soil	S17-Se04025				X		
38	RINSATE	Aug 30, 2017		Water	S17-Se04026						X
39	RINSATE	Aug 31, 2017		Water	S17-Se04027						X

JBS&G Suite 2	Cation Exchange Capacity	Moisture Set	BTEX	pH (1:5 Aqueous extract)

Company Name:	JBS & G Australia (NSW) P/L		Order No.:			Received:	Sep 5, 2017 10:30 AM							
Address:	Level 1, 50 Margaret St Sydney NSW 2000		Report #:	561673		Due:	Sep 12, 2017							
Project Name:	WAGGA WAGGA		Phone:	02 8245 0300		Priority:	5 Day							
Project ID:	52480		Fax:			Contact Name:	Scott Burrows							
Eurofins mgt Analytical Services Manager : Nibha Vaidya														
Sample Detail														
Melbourne Laboratory - NATA Site # 1254 & 14271			X		X	X	X	X						
Sydney Laboratory - NATA Site # 18217			X	X		X		X						
Brisbane Laboratory - NATA Site # 20794			X											
Perth Laboratory - NATA Site # 23736			X		X									
40	HA15_0.3-0.35	Aug 30, 2017	Soil	S17-Se05292		X								
Test Counts			2	28	2	6	6	28						
						2	2	30						

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025—Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Scott Burrows
Report	561673-AID
Project Name	WAGGA WAGGA
Project ID	52480
Received Date	Sep 05, 2017
Date Reported	Sep 12, 2017

Methodology:

Asbestos Fibre Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-containing material (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos".

Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).

This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name WAGGA WAGGA
Project ID 52480
Date Sampled Aug 30, 2017 to Sep 01, 2017
Report 561673-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
HA15_0-0.25	17-Se03921	Aug 30, 2017	Approximate Sample 903g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA16_0-0.15	17-Se03922	Aug 30, 2017	Approximate Sample 834g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA17_0.2-0.3	17-Se03923	Aug 30, 2017	Approximate Sample 901g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA18_0.05-0.15	17-Se03924	Aug 30, 2017	Approximate Sample 548g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA19_0.1-0.2	17-Se03925	Aug 30, 2017	Approximate Sample 599g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA20_0-0.1	17-Se03926	Aug 30, 2017	Approximate Sample 741g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA21_0.25-0.35	17-Se03927	Aug 31, 2017	Approximate Sample 928g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA22_0-0.1	17-Se03928	Aug 31, 2017	Approximate Sample 511g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA23_0-0.05	17-Se03929	Aug 31, 2017	Approximate Sample 558g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA24_0.12-0.22	17-Se03930	Aug 31, 2017	Approximate Sample 420g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
HA25_1.3-1.4	17-Se03931	Aug 31, 2017	Approximate Sample 701g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA26_0.08-0.3	17-Se03932	Aug 31, 2017	Approximate Sample 716g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA27_0.22-0.35	17-Se03933	Aug 31, 2017	Approximate Sample 639g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA28_0-0.1	17-Se03934	Aug 31, 2017	Approximate Sample 568g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA29_0-0.1	17-Se03935	Aug 31, 2017	Approximate Sample 865g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA30_0-0.05	17-Se03936	Aug 31, 2017	Approximate Sample 362g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Synthetic mineral fibre detected. Organic fibre detected. No respirable fibres detected. ^{M11}
HA31_0.75-0.85	17-Se03937	Aug 31, 2017	Approximate Sample 557g Sample consisted of: Brown coarse grain soil and rocks	AF: Chrysotile asbestos detected in the form of loose fibre bundles. Approximate raw weight of AF = 0.00010g* Estimated asbestos content in AF = 0.000098g* Total estimated asbestos concentration in AF = 0.000018% w/w* Organic fibre detected. No respirable fibres detected. ^{M11}
HA32_0.60-0.63	17-Se03938	Aug 31, 2017	Approximate Sample 516g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA33_0.90-0.95	17-Se03939	Aug 31, 2017	Approximate Sample 679g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA34_0-0.1	17-Se03940	Aug 31, 2017	Approximate Sample 595g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA35_0-0.1	17-Se03941	Aug 31, 2017	Approximate Sample 484g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
HA36_0-0.1	17-Se03942	Aug 31, 2017	Approximate Sample 410g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA37_0-0.1	17-Se03943	Sep 01, 2017	Approximate Sample 602g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA38_0-0.03	17-Se03944	Sep 01, 2017	Approximate Sample 639g Sample consisted of: Brown coarse grain soil and rocks	AF: Chrysotile, amosite and crocidolite asbestos detected in fibre cement fragments. Chrysotile asbestos detected in the form of loose fibre bundles. Approximate raw weight of AF = 0.054g Estimated asbestos content in AF = 0.014g* Total estimated asbestos concentration in AF = 0.0021% w/w* Synthetic mineral fibre detected. Organic fibre detected. No respirable fibres detected. ^{M11}
HA39_0-0.03	17-Se03945	Sep 01, 2017	Approximate Sample 600g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
HA40_0-0.03	17-Se03946	Sep 01, 2017	Approximate Sample 645g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
QC01	17-Se03947	Aug 31, 2017	Approximate Sample 586g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
QC02	17-Se03948	Aug 31, 2017	Approximate Sample 438g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Perth	Sep 05, 2017	Indefinite

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217			X		X		X			X	
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X			X					
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	HA15_0-0.25	Aug 30, 2017		Soil	S17-Se03921	X			X		X
2	HA16_0-0.15	Aug 30, 2017		Soil	S17-Se03922	X			X		X
3	HA17_0.2-0.3	Aug 30, 2017		Soil	S17-Se03923	X			X		X
4	HA18_0.05-0.15	Aug 30, 2017		Soil	S17-Se03924	X			X		X
5	HA19_0.1-0.2	Aug 30, 2017		Soil	S17-Se03925	X	X		X	X	X
6	HA20_0-0.1	Aug 30, 2017		Soil	S17-Se03926	X			X		X
7	HA21_0.25-0.35	Aug 31, 2017		Soil	S17-Se03927	X			X		X
8	HA22_0-0.1	Aug 31, 2017		Soil	S17-Se03928	X			X		X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X			
Perth Laboratory - NATA Site # 23736						X	X		
9	HA23_0-0.05	Aug 31, 2017	Soil	S17-Se03929		X		X	X
10	HA24_0.12-0.22	Aug 31, 2017	Soil	S17-Se03930		X		X	X
11	HA25_1.3-1.4	Aug 31, 2017	Soil	S17-Se03931		X		X	X
12	HA26_0.08-0.3	Aug 31, 2017	Soil	S17-Se03932		X		X	X
13	HA27_0.22-0.35	Aug 31, 2017	Soil	S17-Se03933		X		X	X
14	HA28_0-0.1	Aug 31, 2017	Soil	S17-Se03934		X		X	X
15	HA29_0-0.1	Aug 31, 2017	Soil	S17-Se03935		X		X	X
16	HA30_0-0.05	Aug 31, 2017	Soil	S17-Se03936		X		X	X
17	HA31_0.75-0.85	Aug 31, 2017	Soil	S17-Se03937		X		X	X
18	HA32_0.60-	Aug 31, 2017	Soil	S17-Se03938		X		X	X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X	X
Sydney Laboratory - NATA Site # 18217					X		X		X		X
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X				X				
0.63											
19	HA33_0.90-0.95	Aug 31, 2017	Soil	S17-Se03939	X	X			X	X	X
20	HA34_0-0.1	Aug 31, 2017	Soil	S17-Se03940		X					X
21	HA35_0-0.1	Aug 31, 2017	Soil	S17-Se03941		X					X
22	HA36_0-0.1	Aug 31, 2017	Soil	S17-Se03942		X					X
23	HA37_0-0.1	Sep 01, 2017	Soil	S17-Se03943		X					X
24	HA38_0-0.03	Sep 01, 2017	Soil	S17-Se03944		X					X
25	HA39_0-0.03	Sep 01, 2017	Soil	S17-Se03945		X					X
26	HA40_0-0.03	Sep 01, 2017	Soil	S17-Se03946		X					X
27	QC01	Aug 31, 2017	Soil	S17-Se03947		X					X
28	QC02	Aug 31, 2017	Soil	S17-Se03948		X					X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X	X
Sydney Laboratory - NATA Site # 18217					X		X		X		X
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X				X				
29	TS	Aug 30, 2017		Water	S17-Se03949						X
30	TB	Aug 30, 2017		Water	S17-Se03950						X
31	HA15_0.35-0.45	Aug 30, 2017		Soil	S17-Se03951			X			
32	HA17_0-0.1	Aug 30, 2017		Soil	S17-Se03952			X			
33	HA17_0.5-0.6	Aug 30, 2017		Soil	S17-Se03953			X			
34	HA18_0-0.05	Aug 30, 2017		Soil	S17-Se03954		X				
35	HA22_0.2-0.3	Aug 30, 2017		Soil	S17-Se03955			X			
36	HA24_0.1-0.12	Aug 30, 2017		Soil	S17-Se03956		X				
37	HA16_0.15-0.25	Aug 30, 2017		Soil	S17-Se04025				X		
38	RINSATE	Aug 30, 2017		Water	S17-Se04026						X
39	RINSATE	Aug 31, 2017		Water	S17-Se04027						X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271				X			X	X	X	X
Sydney Laboratory - NATA Site # 18217			X		X			X		X
Brisbane Laboratory - NATA Site # 20794	X									
Perth Laboratory - NATA Site # 23736		X				X				
40 HA15_0.3-0.35 Aug 30, 2017	Soil	S17-Se05292				X				
Test Counts	2	28	2	6	6	6	2	2	28	2
										30

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis

grams per kilogram

Filter loading:

fibres/100 graticule areas

Reported Concentration:

fibres/mL

Flowrate:

L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Se03930, Se03936, Se03941, Se03942, Se03948; Sample received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable
M11	NATA accreditation does not cover the performance of this service.

Asbestos Counter/Identifier:

Edward Rowley Asbestos Analyst (WA)

Authorised by:

Rhys Thomas Senior Analyst-Asbestos (WA)



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000



Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **Scott Burrows**

Report **561673-S**
Project name **WAGGA WAGGA**
Project ID **52480**
Received Date **Sep 05, 2017**

Client Sample ID	LOR	Unit	HA15_0-0.25 Soil S17-Se03921 Aug 30, 2017	HA16_0-0.15 Soil S17-Se03922 Aug 30, 2017	HA17_0.2-0.3 Soil S17-Se03923 Aug 30, 2017	HA18_0.05-0.15 Soil S17-Se03924 Aug 30, 2017
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	78	75	67	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.9
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.5
Benzo(b&i)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HA15_0-0.25 Soil S17-Se03921 Aug 30, 2017	HA16_0-0.15 Soil S17-Se03922 Aug 30, 2017	HA17_0.2-0.3 Soil S17-Se03923 Aug 30, 2017	HA18_0.05-0.15 Soil S17-Se03924 Aug 30, 2017
Date Sampled	LOR	Unit				
Test/Reference						
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.3
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.3
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.1
2-Fluorobiphenyl (surr.)	1	%	90	88	99	96
p-Terphenyl-d14 (surr.)	1	%	141	141	144	129
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	66	62	68	71
Tetrachloro-m-xylene (surr.)	1	%	56	54	61	60
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	66	62	68	71
Tetrachloro-m-xylene (surr.)	1	%	56	54	61	60

Client Sample ID			HA15_0-0.25	HA16_0-0.15	HA17_0.2-0.3	HA18_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03921	S17-Se03922	S17-Se03923	S17-Se03924
Date Sampled			Aug 30, 2017	Aug 30, 2017	Aug 30, 2017	Aug 30, 2017
Test/Reference	LOR	Unit				
% Moisture	1	%	6.1	8.9	8.7	8.5
Heavy Metals						
Arsenic	2	mg/kg	29	22	12	12
Cadmium	0.4	mg/kg	< 0.4	0.4	< 0.4	< 0.4
Chromium	5	mg/kg	35	30	19	21
Copper	5	mg/kg	47	21	11	15
Lead	5	mg/kg	17	25	13	28
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	44	35	13	13
Zinc	5	mg/kg	84	69	40	63

Client Sample ID			HA19_0.1-0.2	HA20_0-0.1	HA21_0.25-0.35	HA22_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03925	S17-Se03926	S17-Se03927	S17-Se03928
Date Sampled			Aug 30, 2017	Aug 30, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	55	< 50	< 50	160
TRH C29-C36	50	mg/kg	51	< 50	< 50	150
TRH C10-36 (Total)	50	mg/kg	106	< 50	< 50	310
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	71	70	73	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	100	< 100	< 100	300
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.2
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	1.4
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.7
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.5	< 0.5	< 0.5	1.1
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.9

Client Sample ID			HA19_0.1-0.2 Soil S17-Se03925	HA20_0-0.1 Soil S17-Se03926	HA21_0.25-0.35 Soil S17-Se03927	HA22_0-0.1 Soil S17-Se03928
Date Sampled	LOR	Unit	Aug 30, 2017	Aug 30, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference						
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	0.6	< 0.5	< 0.5	1.0
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Chrysene	0.5	mg/kg	0.5	< 0.5	< 0.5	0.9
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.0	0.7	< 0.5	2.0
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.5	< 0.5	< 0.5	1.2
Pyrene	0.5	mg/kg	1.0	0.7	< 0.5	2.0
Total PAH*	0.5	mg/kg	4.1	1.4	< 0.5	10.5
2-Fluorobiphenyl (surr.)	1	%	89	94	89	80
p-Terphenyl-d14 (surr.)	1	%	147	143	137	129
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	59	64	60	68
Tetrachloro-m-xylene (surr.)	1	%	79	56	56	64
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			HA19_0.1-0.2 Soil S17-Se03925 Aug 30, 2017	HA20_0-0.1 Soil S17-Se03926 Aug 30, 2017	HA21_0.25-0.35 Soil S17-Se03927 Aug 31, 2017	HA22_0-0.1 Soil S17-Se03928 Aug 31, 2017
Sample Matrix	LOR	Unit				
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference						
Polychlorinated Biphenyls						
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	59	64	60	68
Tetrachloro-m-xylene (surr.)	1	%	79	56	56	64
% Clay	1	%	15	-	-	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	330	-	-	-
pH (1:5 Aqueous extract)	0.1	pH Units	6.7	-	-	-
% Moisture	1	%	12	13	1.9	23
Heavy Metals						
Arsenic	2	mg/kg	9.8	9.7	3.4	6.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	29	32	10	21
Copper	5	mg/kg	26	20	< 5	48
Lead	5	mg/kg	300	51	5.2	150
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2
Nickel	5	mg/kg	18	19	6.6	12
Zinc	5	mg/kg	170	140	11	420
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	30	-	-	-

Client Sample ID			HA23_0-0.05 Soil S17-Se03929 Aug 31, 2017	HA24_0.12-0.22 Soil S17-Se03930 Aug 31, 2017	HA25_1.3-1.4 Soil S17-Se03931 Aug 31, 2017	HA26_0.08-0.3 Soil S17-Se03932 Aug 31, 2017
Sample Matrix	LOR	Unit				
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	210	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	75	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	285	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	73	76	69	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			HA23_0-0.05 Soil S17-Se03929 Aug 31, 2017	HA24_0.12-0.22 Soil S17-Se03930 Aug 31, 2017	HA25_1.3-1.4 Soil S17-Se03931 Aug 31, 2017	HA26_0.08-0.3 Soil S17-Se03932 Aug 31, 2017
Date Sampled	LOR	Unit				
Test/Reference						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	310	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	4.0	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	4.0	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	4.0	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	3.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	2.2	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	1.4	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	1.8	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	1.7	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	2.2	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	0.9	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	6.3	1.1	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	1.7	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	7.3	0.8	< 0.5
Pyrene	0.5	mg/kg	< 0.5	5.6	1.1	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	35.7	3	< 0.5
2-Fluorobiphenyl (surr.)	1	%	111	87	87	69
p-Terphenyl-d14 (surr.)	1	%	101	135	140	109
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	0.27	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	0.27	< 0.05

Client Sample ID			HA23_0-0.05	HA24_0.12-0.22	HA25_1.3-1.4	HA26_0.08-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03929	S17-Se03930	S17-Se03931	S17-Se03932
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.27	< 0.1
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	61	78	61	81
Tetrachloro-m-xylene (surr.)	1	%	55	56	53	69
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	61	78	61	81
Tetrachloro-m-xylene (surr.)	1	%	55	56	53	69
% Moisture	1	%	7.2	15	12	16
Heavy Metals						
Arsenic	2	mg/kg	5.1	6.8	4.7	6.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	32	17	31
Copper	5	mg/kg	29	110	11	29
Lead	5	mg/kg	100	25	17	130
Mercury	0.1	mg/kg	3.3	< 0.1	0.1	< 0.1
Nickel	5	mg/kg	14	27	9.9	19
Zinc	5	mg/kg	340	47	31	110

Client Sample ID			HA27_0.22-0.35	HA28_0-0.1	HA29_0-0.1	HA30_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03933	S17-Se03934	S17-Se03935	S17-Se03936
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	59	< 50	58
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	140
TRH C10-36 (Total)	50	mg/kg	< 50	59	< 50	198
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	70	74	67	74

Client Sample ID			HA27_0.22-0.35	HA28_0-0.1	HA29_0-0.1	HA30_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03933	S17-Se03934	S17-Se03935	S17-Se03936
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	170
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.7	< 0.5	< 0.5	0.8
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	0.8	< 0.5	< 0.5	0.7
Total PAH*	0.5	mg/kg	1.5	< 0.5	< 0.5	2.1
2-Fluorobiphenyl (surr.)	1	%	87	94	86	92
p-Terphenyl-d14 (surr.)	1	%	138	147	138	144
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	5.4
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	1.3
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA27_0.22-0.35	HA28_0-0.1	HA29_0-0.1	HA30_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03933	S17-Se03934	S17-Se03935	S17-Se03936
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	1.3
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	6.7
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	5.4
Dibutylchlorendate (surr.)	1	%	87	114	137	88
Tetrachloro-m-xylene (surr.)	1	%	76	66	69	57
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	87	114	137	88
Tetrachloro-m-xylene (surr.)	1	%	76	66	69	57
% Moisture	1	%	16	10	3.6	3.1
Heavy Metals						
Arsenic	2	mg/kg	6.9	5.4	4.3	7.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	32	18	14	18
Copper	5	mg/kg	20	45	9.4	26
Lead	5	mg/kg	65	23	14	110
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	17	11	9.3	10
Zinc	5	mg/kg	78	54	37	130

Client Sample ID			HA31_0.75-0.85	HA32_0.60-0.63	HA33_0.90-0.95	HA34_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03937	S17-Se03938	S17-Se03939	S17-Se03940
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	100	110	< 50
TRH C29-C36	50	mg/kg	< 50	91	94	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	191	204	< 50

Client Sample ID			HA31_0.75-0.85	HA32_0.60-0.63	HA33_0.90-0.95	HA34_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03937	S17-Se03938	S17-Se03939	S17-Se03940
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	81	77	75	74
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	190	210	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	1.1
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.4
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.9	1.2
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	1.2
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	1.5	6.9
2-Fluorobiphenyl (surr.)	1	%	91	82	102	91
p-Terphenyl-d14 (surr.)	1	%	149	130	149	146
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	1.6	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	0.08	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	0.94	< 0.05	0.22	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA31_0.75-0.85	HA32_0.60-0.63	HA33_0.90-0.95	HA34_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-Se03937	S17-Se03938	S17-Se03939	S17-Se03940
Date Sampled			Aug 31, 2017	Aug 31, 2017	Aug 31, 2017	Aug 31, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	0.94	< 0.05	0.22	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	0.08	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	2.54	< 0.1	0.22	< 0.1
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	1.6	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	77	77	82	77
Tetrachloro-m-xylene (surr.)	1	%	53	64	87	62
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	77	77	82	77
Tetrachloro-m-xylene (surr.)	1	%	53	64	87	62
% Clay	1	%	-	-	9.1	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	-	1900	-
pH (1:5 Aqueous extract)	0.1	pH Units	-	-	7.0	-
% Moisture	1	%	9.6	8.5	1.1	9.0
Heavy Metals						
Arsenic	2	mg/kg	9.1	9.3	7.8	7.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	27	25	26
Copper	5	mg/kg	32	20	17	17
Lead	5	mg/kg	68	62	25	90
Mercury	0.1	mg/kg	< 0.1	2.8	1.4	< 0.1
Nickel	5	mg/kg	17	15	14	14
Zinc	5	mg/kg	240	67	44	120
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	22	-

Client Sample ID			HA35_0-0.1 Soil S17-Se03941	HA36_0-0.1 Soil S17-Se03942	HA37_0-0.1 Soil S17-Se03943	HA38_0-0.03 Soil S17-Se03944
Sample Matrix			Aug 31, 2017	Aug 31, 2017	Sep 01, 2017	Sep 01, 2017
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	68	77	70
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.1	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.4	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.0	1.4	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Pyrene	0.5	mg/kg	1.0	1.4	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	2	7.7	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	92	91	91
p-Terphenyl-d14 (surr.)	1	%	149	143	136	138
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.3
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA35_0-0.1 Soil S17-Se03941	HA36_0-0.1 Soil S17-Se03942	HA37_0-0.1 Soil S17-Se03943	HA38_0-0.03 Soil S17-Se03944
Sample Matrix	LOR	Unit	Aug 31, 2017	Aug 31, 2017	Sep 01, 2017	Sep 01, 2017
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference						
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.16
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.16
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.46
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.3
Dibutylchlorendate (surr.)	1	%	82	77	84	82
Tetrachloro-m-xylene (surr.)	1	%	64	66	66	63
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	82	77	84	82
Tetrachloro-m-xylene (surr.)	1	%	64	66	66	63
% Moisture	1	%	16	18	19	6.6
Heavy Metals						
Arsenic	2	mg/kg	8.2	8.1	6.2	15
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	4.3
Chromium	5	mg/kg	28	27	18	20
Copper	5	mg/kg	18	16	9.1	130
Lead	5	mg/kg	41	45	18	160
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	16	17	10	8.8
Zinc	5	mg/kg	71	54	38	170

Client Sample ID			HA39_0-0.03 Soil S17-Se03945 Sep 01, 2017	HA40_0-0.03 Soil S17-Se03946 Sep 01, 2017	QC01 Soil S17-Se03947 Aug 31, 2017	QC02 Soil S17-Se03948 Aug 31, 2017
Sample Matrix	LOR	Unit				
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	120	123	113
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.1	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.5	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.0	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	0.7	< 0.5	< 0.5	0.6
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.6	< 0.5	< 0.5	0.9
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.4	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	1.6	< 0.5	< 0.5	1.0
Total PAH*	0.5	mg/kg	7.6	< 0.5	< 0.5	2.5
2-Fluorobiphenyl (surr.)	1	%	86	92	101	91
p-Terphenyl-d14 (surr.)	1	%	135	144	130	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA39_0-0.03 Soil S17-Se03945 Sep 01, 2017	HA40_0-0.03 Soil S17-Se03946 Sep 01, 2017	QC01 Soil S17-Se03947 Aug 31, 2017	QC02 Soil S17-Se03948 Aug 31, 2017
Sample Matrix						
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	88	73	78	73
Tetrachloro-m-xylene (surr.)	1	%	65	57	59	59
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	88	73	78	73
Tetrachloro-m-xylene (surr.)	1	%	65	57	59	59
% Moisture	1	%	9.0	8.6	8.2	16
Heavy Metals						
Arsenic	2	mg/kg	17	4.7	5.6	9.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	16	19	29
Copper	5	mg/kg	18	12	26	19
Lead	5	mg/kg	100	50	14	42
Mercury	0.1	mg/kg	< 0.1	1.3	< 0.1	< 0.1
Nickel	5	mg/kg	15	11	12	18
Zinc	5	mg/kg	84	91	40	76

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C36	Melbourne	Sep 07, 2017	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Sep 07, 2017	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Sep 07, 2017	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Sep 07, 2017	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2140 PAH and Phenols in Soils by GCMS	Melbourne	Sep 07, 2017	14 Day
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Melbourne	Sep 07, 2017	14 Day
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Melbourne	Sep 07, 2017	28 Days
Metals M8 - Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)	Melbourne	Sep 07, 2017	28 Days
% Clay - Method: LTM-GEN-7040	Brisbane	Sep 11, 2017	6 Day
pH (1:5 Aqueous extract) - Method: LTM-GEN-7090 pH in soil by ISE	Melbourne	Sep 07, 2017	7 Day
Conductivity (1:5 aqueous extract at 25°C) - Method: LTM-INO-4030	Melbourne	Sep 07, 2017	7 Day
Cation Exchange Capacity - Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)	Melbourne	Sep 08, 2017	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Sep 05, 2017	14 Day

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X	X	X			X
Brisbane Laboratory - NATA Site # 20794						X					
Perth Laboratory - NATA Site # 23736						X		X			
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	HA15_0-0.25	Aug 30, 2017		Soil	S17-Se03921	X			X		X
2	HA16_0-0.15	Aug 30, 2017		Soil	S17-Se03922	X			X		X
3	HA17_0.2-0.3	Aug 30, 2017		Soil	S17-Se03923	X			X		X
4	HA18_0.05-0.15	Aug 30, 2017		Soil	S17-Se03924	X			X		X
5	HA19_0.1-0.2	Aug 30, 2017		Soil	S17-Se03925	X	X		X	X	X
6	HA20_0-0.1	Aug 30, 2017		Soil	S17-Se03926	X			X		X
7	HA21_0.25-0.35	Aug 31, 2017		Soil	S17-Se03927	X			X		X
8	HA22_0-0.1	Aug 31, 2017		Soil	S17-Se03928	X			X		X

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Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X	X	X			X
Brisbane Laboratory - NATA Site # 20794						X					
Perth Laboratory - NATA Site # 23736						X		X			
9	HA23_0-0.05	Aug 31, 2017		Soil	S17-Se03929	X			X		X
10	HA24_0.12-0.22	Aug 31, 2017		Soil	S17-Se03930	X			X		X
11	HA25_1.3-1.4	Aug 31, 2017		Soil	S17-Se03931	X			X		X
12	HA26_0.08-0.3	Aug 31, 2017		Soil	S17-Se03932	X			X		X
13	HA27_0.22-0.35	Aug 31, 2017		Soil	S17-Se03933	X			X		X
14	HA28_0-0.1	Aug 31, 2017		Soil	S17-Se03934	X			X		X
15	HA29_0-0.1	Aug 31, 2017		Soil	S17-Se03935	X			X		X
16	HA30_0-0.05	Aug 31, 2017		Soil	S17-Se03936	X			X		X
17	HA31_0.75-0.85	Aug 31, 2017		Soil	S17-Se03937	X			X		X
18	HA32_0.60-	Aug 31, 2017		Soil	S17-Se03938	X			X		X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
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Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X	X
Sydney Laboratory - NATA Site # 18217					X		X		X		X
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X				X				
0.63											
19	HA33_0.90-0.95	Aug 31, 2017	Soil	S17-Se03939	X	X			X	X	X
20	HA34_0-0.1	Aug 31, 2017	Soil	S17-Se03940		X					X
21	HA35_0-0.1	Aug 31, 2017	Soil	S17-Se03941		X					X
22	HA36_0-0.1	Aug 31, 2017	Soil	S17-Se03942		X					X
23	HA37_0-0.1	Sep 01, 2017	Soil	S17-Se03943		X					X
24	HA38_0-0.03	Sep 01, 2017	Soil	S17-Se03944		X					X
25	HA39_0-0.03	Sep 01, 2017	Soil	S17-Se03945		X					X
26	HA40_0-0.03	Sep 01, 2017	Soil	S17-Se03946		X					X
27	QC01	Aug 31, 2017	Soil	S17-Se03947		X					X
28	QC02	Aug 31, 2017	Soil	S17-Se03948		X					X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X	X	X			X
Brisbane Laboratory - NATA Site # 20794						X					
Perth Laboratory - NATA Site # 23736						X		X			
29	TS	Aug 30, 2017		Water	S17-Se03949				X		
30	TB	Aug 30, 2017		Water	S17-Se03950					X	
31	HA15_0.35-0.45	Aug 30, 2017		Soil	S17-Se03951		X				
32	HA17_0-0.1	Aug 30, 2017		Soil	S17-Se03952		X				
33	HA17_0.5-0.6	Aug 30, 2017		Soil	S17-Se03953		X				
34	HA18_0-0.05	Aug 30, 2017		Soil	S17-Se03954	X					
35	HA22_0.2-0.3	Aug 30, 2017		Soil	S17-Se03955		X				
36	HA24_0.1-0.12	Aug 30, 2017		Soil	S17-Se03956	X					
37	HA16_0.15-0.25	Aug 30, 2017		Soil	S17-Se04025			X			
38	RINSATE	Aug 30, 2017		Water	S17-Se04026						X
39	RINSATE	Aug 31, 2017		Water	S17-Se04027						X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X
Sydney Laboratory - NATA Site # 18217					X		X			X
Brisbane Laboratory - NATA Site # 20794					X					
Perth Laboratory - NATA Site # 23736					X					
40	HA15_0.3-0.35	Aug 30, 2017	Soil	S17-Se05292				X		
Test Counts		2	28	2	6	6	6	2	2	28
										30

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	mg/kg	< 20		20	Pass	
TRH C10-C14	mg/kg	< 20		20	Pass	
TRH C15-C28	mg/kg	< 50		50	Pass	
TRH C29-C36	mg/kg	< 50		50	Pass	
Method Blank						
BTEX						
Benzene	mg/kg	< 0.1		0.1	Pass	
Toluene	mg/kg	< 0.1		0.1	Pass	
Ethylbenzene	mg/kg	< 0.1		0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2		0.2	Pass	
o-Xylene	mg/kg	< 0.1		0.1	Pass	
Xylenes - Total	mg/kg	< 0.3		0.3	Pass	
Method Blank						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene	mg/kg	< 0.5		0.5	Pass	
TRH C6-C10	mg/kg	< 20		20	Pass	
TRH >C10-C16	mg/kg	< 50		50	Pass	
TRH >C16-C34	mg/kg	< 100		100	Pass	
TRH >C34-C40	mg/kg	< 100		100	Pass	
Method Blank						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	mg/kg	< 0.5		0.5	Pass	
Acenaphthylene	mg/kg	< 0.5		0.5	Pass	
Anthracene	mg/kg	< 0.5		0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5		0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5		0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5		0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Chrysene	mg/kg	< 0.5		0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5		0.5	Pass	
Fluoranthene	mg/kg	< 0.5		0.5	Pass	
Fluorene	mg/kg	< 0.5		0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5		0.5	Pass	
Naphthalene	mg/kg	< 0.5		0.5	Pass	
Phenanthrene	mg/kg	< 0.5		0.5	Pass	
Pyrene	mg/kg	< 0.5		0.5	Pass	
Method Blank						
Organochlorine Pesticides						
Chlordanes - Total	mg/kg	< 0.1		0.1	Pass	
4,4'-DDD	mg/kg	< 0.05		0.05	Pass	
4,4'-DDE	mg/kg	< 0.05		0.05	Pass	
4,4'-DDT	mg/kg	< 0.05		0.05	Pass	
a-BHC	mg/kg	< 0.05		0.05	Pass	
Aldrin	mg/kg	< 0.05		0.05	Pass	
b-BHC	mg/kg	< 0.05		0.05	Pass	
d-BHC	mg/kg	< 0.05		0.05	Pass	
Dieldrin	mg/kg	< 0.05		0.05	Pass	
Endosulfan I	mg/kg	< 0.05		0.05	Pass	
Endosulfan II	mg/kg	< 0.05		0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C)	uS/cm	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	107			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	116			70-130	Pass	
Ethylbenzene	%	115			70-130	Pass	
m&p-Xylenes	%	120			70-130	Pass	
Xylenes - Total	%	118			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	102			70-130	Pass	
TRH C6-C10	%	102			70-130	Pass	
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	104			70-130	Pass	
Acenaphthylene	%	119			70-130	Pass	
Anthracene	%	87			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	%	125			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	%	100			70-130	Pass	
Benzo(g.h.i)perylene	%	116			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	110			70-130	Pass	
Dibenz(a.h)anthracene	%	108			70-130	Pass	
Fluoranthene	%	121			70-130	Pass	
Fluorene	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	111			70-130	Pass	
Phenanthrene	%	105			70-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	77			70-130	Pass	
4,4'-DDE	%	82			70-130	Pass	
4,4'-DDT	%	92			70-130	Pass	
a-BHC	%	78			70-130	Pass	
Aldrin	%	81			70-130	Pass	
b-BHC	%	78			70-130	Pass	
d-BHC	%	82			70-130	Pass	
Dieldrin	%	79			70-130	Pass	
Endosulfan I	%	81			70-130	Pass	
Endosulfan II	%	79			70-130	Pass	
Endosulfan sulphate	%	81			70-130	Pass	
Endrin	%	81			70-130	Pass	
Endrin aldehyde	%	79			70-130	Pass	
Endrin ketone	%	81			70-130	Pass	
g-BHC (Lindane)	%	80			70-130	Pass	
Heptachlor	%	83			70-130	Pass	
Heptachlor epoxide	%	78			70-130	Pass	
Hexachlorobenzene	%	76			70-130	Pass	
Methoxychlor	%	83			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	84			70-130	Pass	
LCS - % Recovery							
% Clay	%	96			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	102			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	111			80-120	Pass	
Lead	%	119			80-120	Pass	
Mercury	%	100			75-125	Pass	
Nickel	%	108			80-120	Pass	
Zinc	%	105			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
TRH C10-C14	M17-Se09755	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
TRH >C10-C16	M17-Se09755	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Se03922	CP	%	83			70-130	Pass	
Acenaphthylene	S17-Se03922	CP	%	94			70-130	Pass	
Anthracene	S17-Se03922	CP	%	82			70-130	Pass	
Benz(a)anthracene	S17-Se03922	CP	%	102			70-130	Pass	
Benzo(a)pyrene	S17-Se03922	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Se03922	CP	%	85			70-130	Pass	
Benzo(g.h.i)perylene	S17-Se03922	CP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S17-Se03922	CP	%	75			70-130	Pass	
Chrysene	S17-Se03922	CP	%	98			70-130	Pass	
Dibenz(a.h)anthracene	S17-Se03922	CP	%	94			70-130	Pass	
Fluoranthene	S17-Se03922	CP	%	102			70-130	Pass	
Fluorene	S17-Se03922	CP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Se03922	CP	%	97			70-130	Pass	
Naphthalene	S17-Se03922	CP	%	84			70-130	Pass	
Phenanthrene	S17-Se03922	CP	%	103			70-130	Pass	
Pyrene	S17-Se03922	CP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Se03922	CP	%	107			75-125	Pass	
Cadmium	S17-Se03922	CP	%	109			75-125	Pass	
Chromium	S17-Se03922	CP	%	115			75-125	Pass	
Copper	S17-Se03922	CP	%	118			75-125	Pass	
Lead	S17-Se03922	CP	%	106			75-125	Pass	
Mercury	S17-Se03922	CP	%	114			70-130	Pass	
Nickel	S17-Se03922	CP	%	82			75-125	Pass	
Zinc	S17-Se03922	CP	%	94			75-125	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S17-Se03924	CP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Se03925	CP	%	94			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Se03925	CP	%	101			70-130	Pass	
Toluene	S17-Se03925	CP	%	108			70-130	Pass	
Ethylbenzene	S17-Se03925	CP	%	106			70-130	Pass	
m&p-Xylenes	S17-Se03925	CP	%	112			70-130	Pass	
o-Xylene	S17-Se03925	CP	%	108			70-130	Pass	
Xylenes - Total	S17-Se03925	CP	%	111			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Se03925	CP	%	72			70-130	Pass	
TRH C6-C10	S17-Se03925	CP	%	91			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthene	S17-Se03932	CP	%	91			70-130	Pass	
Acenaphthylene	S17-Se03932	CP	%	107			70-130	Pass	
Anthracene	S17-Se03932	CP	%	105			70-130	Pass	
Benz(a)anthracene	S17-Se03932	CP	%	124			70-130	Pass	
Benzo(a)pyrene	S17-Se03932	CP	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Se03932	CP	%	100			70-130	Pass	
Benzo(g.h.i)perylene	S17-Se03932	CP	%	112			70-130	Pass	
Benzo(k)fluoranthene	S17-Se03932	CP	%	103			70-130	Pass	
Chrysene	S17-Se03932	CP	%	99			70-130	Pass	
Dibenz(a.h)anthracene	S17-Se03932	CP	%	111			70-130	Pass	
Fluoranthene	S17-Se03932	CP	%	103			70-130	Pass	
Fluorene	S17-Se03932	CP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Se03932	CP	%	111			70-130	Pass	
Naphthalene	S17-Se03932	CP	%	98			70-130	Pass	
Phenanthrene	S17-Se03932	CP	%	108			70-130	Pass	
Pyrene	S17-Se03932	CP	%	105			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDE	S17-Se03938	CP	%	85			70-130	Pass	
4,4'-DDT	S17-Se03938	CP	%	129			70-130	Pass	
a-BHC	S17-Se03938	CP	%	76			70-130	Pass	
Aldrin	S17-Se03938	CP	%	74			70-130	Pass	
b-BHC	S17-Se03938	CP	%	86			70-130	Pass	
d-BHC	S17-Se03938	CP	%	83			70-130	Pass	
Dieldrin	S17-Se03938	CP	%	79			70-130	Pass	
Endosulfan I	S17-Se03938	CP	%	73			70-130	Pass	
Endosulfan II	S17-Se03938	CP	%	87			70-130	Pass	
Endosulfan sulphate	S17-Se03938	CP	%	89			70-130	Pass	
Endrin	S17-Se03938	CP	%	97			70-130	Pass	
Endrin aldehyde	S17-Se03938	CP	%	71			70-130	Pass	
Endrin ketone	S17-Se03938	CP	%	75			70-130	Pass	
g-BHC (Lindane)	S17-Se03938	CP	%	83			70-130	Pass	
Heptachlor	S17-Se03938	CP	%	98			70-130	Pass	
Heptachlor epoxide	S17-Se03938	CP	%	79			70-130	Pass	
Hexachlorobenzene	S17-Se03938	CP	%	76			70-130	Pass	
Methoxychlor	S17-Se03938	CP	%	103			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Se03942	CP	%	87			70-130	Pass	
Acenaphthylene	S17-Se03942	CP	%	102			70-130	Pass	
Anthracene	S17-Se03942	CP	%	98			70-130	Pass	
Benz(a)anthracene	S17-Se03942	CP	%	113			70-130	Pass	
Benzo(a)pyrene	S17-Se03942	CP	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Se03942	CP	%	78			70-130	Pass	
Benzo(g.h.i)perylene	S17-Se03942	CP	%	113			70-130	Pass	
Benzo(k)fluoranthene	S17-Se03942	CP	%	99			70-130	Pass	
Chrysene	S17-Se03942	CP	%	96			70-130	Pass	
Dibenz(a.h)anthracene	S17-Se03942	CP	%	117			70-130	Pass	
Fluoranthene	S17-Se03942	CP	%	97			70-130	Pass	
Fluorene	S17-Se03942	CP	%	101			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Se03942	CP	%	106			70-130	Pass	
Naphthalene	S17-Se03942	CP	%	88			70-130	Pass	
Phenanthrene	S17-Se03942	CP	%	103			70-130	Pass	
Pyrene	S17-Se03942	CP	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals									
Arsenic	S17-Se03942	CP	%	107			75-125	Pass	
Cadmium	S17-Se03942	CP	%	105			75-125	Pass	
Chromium	S17-Se03942	CP	%	107			75-125	Pass	
Copper	S17-Se03942	CP	%	113			75-125	Pass	
Lead	S17-Se03942	CP	%	107			75-125	Pass	
Mercury	S17-Se03942	CP	%	100			70-130	Pass	
Nickel	S17-Se03942	CP	%	105			75-125	Pass	
Zinc	S17-Se03942	CP	%	110			75-125	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls									
Aroclor-1260	S17-Se03944	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
TRH C6-C9	S17-Se03945	CP	%	90			70-130	Pass	
Spike - % Recovery									
BTEX									
Benzene	S17-Se03945	CP	%	100			70-130	Pass	
Toluene	S17-Se03945	CP	%	106			70-130	Pass	
Ethylbenzene	S17-Se03945	CP	%	105			70-130	Pass	
m&p-Xylenes	S17-Se03945	CP	%	111			70-130	Pass	
o-Xylene	S17-Se03945	CP	%	107			70-130	Pass	
Xylenes - Total	S17-Se03945	CP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
Naphthalene	S17-Se03945	CP	%	73			70-130	Pass	
TRH C6-C10	S17-Se03945	CP	%	85			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides									
4,4'-DDD	S17-Se03948	CP	%	74			70-130	Pass	
4,4'-DDE	S17-Se03948	CP	%	82			70-130	Pass	
4,4'-DDT	S17-Se03948	CP	%	81			70-130	Pass	
a-BHC	S17-Se03948	CP	%	77			70-130	Pass	
Aldrin	S17-Se03948	CP	%	82			70-130	Pass	
b-BHC	S17-Se03948	CP	%	80			70-130	Pass	
d-BHC	S17-Se03948	CP	%	73			70-130	Pass	
Dieldrin	S17-Se03948	CP	%	78			70-130	Pass	
Endosulfan I	S17-Se03948	CP	%	73			70-130	Pass	
Endosulfan II	S17-Se03948	CP	%	72			70-130	Pass	
Endrin	S17-Se03948	CP	%	88			70-130	Pass	
g-BHC (Lindane)	S17-Se03948	CP	%	78			70-130	Pass	
Heptachlor	S17-Se03948	CP	%	87			70-130	Pass	
Heptachlor epoxide	S17-Se03948	CP	%	78			70-130	Pass	
Hexachlorobenzene	S17-Se03948	CP	%	80			70-130	Pass	
Methoxychlor	S17-Se03948	CP	%	81			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons									
Benzo(b&j)fluoranthene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S17-Se03921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	B17-Se05769	NCP	%	9.8	9.2	6.0	30%	Pass	
Duplicate									
Heavy Metals									
Arsenic	S17-Se03921	CP	mg/kg	29	31	6.0	30%	Pass	
Cadmium	S17-Se03921	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S17-Se03921	CP	mg/kg	35	36	1.0	30%	Pass	
Copper	S17-Se03921	CP	mg/kg	47	50	8.0	30%	Pass	
Lead	S17-Se03921	CP	mg/kg	17	17	3.0	30%	Pass	
Mercury	S17-Se03921	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-Se03921	CP	mg/kg	44	41	7.0	30%	Pass	
Zinc	S17-Se03921	CP	mg/kg	84	81	4.0	30%	Pass	
Duplicate									
Heavy Metals									
Arsenic	S17-Se03922	CP	mg/kg	22	22	1.0	30%	Pass	
Cadmium	S17-Se03922	CP	mg/kg	0.4	0.4	1.0	30%	Pass	
Chromium	S17-Se03922	CP	mg/kg	30	30	1.0	30%	Pass	
Copper	S17-Se03922	CP	mg/kg	21	21	2.0	30%	Pass	
Lead	S17-Se03922	CP	mg/kg	25	25	1.0	30%	Pass	
Mercury	S17-Se03922	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-Se03922	CP	mg/kg	35	36	2.0	30%	Pass	
Zinc	S17-Se03922	CP	mg/kg	69	67	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Se03924	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Se03924	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S17-Se03924	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S17-Se03924	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S17-Se03924	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S17-Se03924	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S17-Se03924	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Se03924	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S17-Se03924	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Conductivity (1:5 aqueous extract at 25°C)	M17-Se04917	NCP	uS/cm	130	130	5.0	30%	Pass	
pH (1:5 Aqueous extract)	M17-Se04917	NCP	pH Units	9.0	9.1	pass	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S17-Se03928	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S17-Se03928	CP	mg/kg	160	170	5.0	30%	Pass
TRH C29-C36	S17-Se03928	CP	mg/kg	150	140	8.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S17-Se03928	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S17-Se03928	CP	mg/kg	300	310	2.0	30%	Pass
TRH >C34-C40	S17-Se03928	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g.h.i)perylene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a.h)anthracene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S17-Se03931	CP	mg/kg	1.1	1.0	7.0	30%	Pass
Fluorene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S17-Se03931	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S17-Se03931	CP	mg/kg	0.8	0.8	1.0	30%	Pass
Pyrene	S17-Se03931	CP	mg/kg	1.1	0.9	12	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S17-Se03934	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S17-Se03934	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S17-Se03934	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S17-Se03934	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S17-Se03934	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S17-Se03934	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S17-Se03934	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S17-Se03934	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S17-Se03934	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
% Clay				Result 1	Result 2	RPD		
% Clay	S17-Se03939	CP	%	9.1	9.3	2.0	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g.h.i)perylene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Chrysene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a.h)anthracene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S17-Se03941	CP	mg/kg	1.0	0.8	18	30%	Pass
Fluorene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S17-Se03941	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S17-Se03941	CP	mg/kg	1.0	0.9	15	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S17-Se03941	CP	mg/kg	8.2	7.5	9.0	30%	Pass
Cadmium	S17-Se03941	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S17-Se03941	CP	mg/kg	28	27	2.0	30%	Pass
Copper	S17-Se03941	CP	mg/kg	18	17	6.0	30%	Pass
Lead	S17-Se03941	CP	mg/kg	41	42	5.0	30%	Pass
Mercury	S17-Se03941	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S17-Se03941	CP	mg/kg	16	16	5.0	30%	Pass
Zinc	S17-Se03941	CP	mg/kg	71	66	6.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S17-Se03942	CP	mg/kg	8.1	7.8	4.0	30%	Pass
Cadmium	S17-Se03942	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S17-Se03942	CP	mg/kg	27	27	<1	30%	Pass
Copper	S17-Se03942	CP	mg/kg	16	16	<1	30%	Pass
Lead	S17-Se03942	CP	mg/kg	45	44	1.0	30%	Pass
Mercury	S17-Se03942	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S17-Se03942	CP	mg/kg	17	16	2.0	30%	Pass
Zinc	S17-Se03942	CP	mg/kg	54	56	5.0	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S17-Se03943	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S17-Se03943	CP	mg/kg	< 1	< 1	<1	30%	Pass

Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S17-Se03943	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S17-Se03944	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S17-Se03944	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S17-Se03944	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S17-Se03944	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S17-Se03944	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S17-Se03944	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S17-Se03944	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S17-Se03944	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S17-Se03944	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S17-Se03947	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S17-Se03947	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate							
Polychlorinated Biphenyls				Result 1	Result 2	RPD	
Aroclor-1260	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30% Pass
Total PCB*	S17-Se03947	CP	mg/kg	< 0.1	< 0.1	<1	30% Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Matthew Deaves	Senior Analyst-Asbestos (WA)
Rhys Thomas	Senior Analyst-Asbestos (WA)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000



Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **Scott Burrows**

Report **561673-W**
Project name **WAGGA WAGGA**
Project ID **52480**
Received Date **Sep 05, 2017**

Client Sample ID	LOR	Unit	TS Water S17-Se03949 Aug 30, 2017	TB Water S17-Se03950 Aug 30, 2017	RINSATE Water S17-Se04026 Aug 30, 2017	RINSATE Water S17-Se04027 Aug 31, 2017
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	-	-	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1	< 0.1
BTEX						
Comments			R20			
Benzene	0.001	mg/L	97	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	98	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	96	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	91	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	100	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	96	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	66	56	93	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	-	-	< 0.01	< 0.01
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	-	-	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	-	-	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	-	-	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	-	-	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001	< 0.001

Client Sample ID			TS Water S17-Se03949	TB Water S17-Se03950	RINSATE Water S17-Se04026	RINSATE Water S17-Se04027
Sample Matrix	LOR	Unit	Aug 30, 2017	Aug 30, 2017	Aug 30, 2017	Aug 31, 2017
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference						
Polycyclic Aromatic Hydrocarbons						
Indeno(1,2,3-cd)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	-	-	< 0.001	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Total PAH*	0.001	mg/L	-	-	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	61	77
p-Terphenyl-d14 (surr.)	1	%	-	-	66	81
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	-	-	< 0.001	< 0.001
4,4'-DDD	0.0001	mg/L	-	-	< 0.0001	< 0.0001
4,4'-DDE	0.0001	mg/L	-	-	< 0.0001	< 0.0001
4,4'-DDT	0.0001	mg/L	-	-	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	-	< 0.0001	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Vic EPA IWRG 621 Organochlorine pesticides (Total)*	0.001	mg/L	-	-	< 0.001	< 0.001
Vic EPA IWRG 621 Other organochlorine pesticides (Total)*	0.001	mg/L	-	-	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	-	-	79	132
Tetrachloro-m-xylene (surr.)	1	%	-	-	61	96
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	-	-	< 0.001	< 0.001
Aroclor-1221	0.001	mg/L	-	-	< 0.001	< 0.001
Aroclor-1232	0.001	mg/L	-	-	< 0.001	< 0.001
Aroclor-1242	0.001	mg/L	-	-	< 0.001	< 0.001
Aroclor-1248	0.001	mg/L	-	-	< 0.001	< 0.001
Aroclor-1254	0.001	mg/L	-	-	< 0.001	< 0.001
Aroclor-1260	0.001	mg/L	-	-	< 0.001	< 0.001
Total PCB*	0.001	mg/L	-	-	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	-	-	79	132
Tetrachloro-m-xylene (surr.)	1	%	-	-	61	96

Client Sample ID			TS Water S17-Se03949	TB Water S17-Se03950	RINSATE Water S17-Se04026	RINSATE Water S17-Se04027
Sample Matrix						
Eurofins mgt Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	< 0.001
Cadmium	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Chromium	0.001	mg/L	-	-	< 0.001	< 0.001
Copper	0.001	mg/L	-	-	< 0.001	0.001
Lead	0.001	mg/L	-	-	< 0.001	< 0.001
Mercury	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Nickel	0.001	mg/L	-	-	< 0.001	< 0.001
Zinc	0.005	mg/L	-	-	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
 A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 07, 2017	7 Day
- Method: LTM-ORG-2010 TRH C6-C36			
BTEX	Melbourne	Sep 06, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 06, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 07, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 07, 2017	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS			
Organochlorine Pesticides	Melbourne	Sep 07, 2017	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Sep 07, 2017	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Sep 06, 2017	28 Days
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217			X		X		X			X	
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X			X					
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	HA15_0-0.25	Aug 30, 2017		Soil	S17-Se03921	X			X		X
2	HA16_0-0.15	Aug 30, 2017		Soil	S17-Se03922	X			X		X
3	HA17_0.2-0.3	Aug 30, 2017		Soil	S17-Se03923	X			X		X
4	HA18_0.05-0.15	Aug 30, 2017		Soil	S17-Se03924	X			X		X
5	HA19_0.1-0.2	Aug 30, 2017		Soil	S17-Se03925	X	X		X	X	X
6	HA20_0-0.1	Aug 30, 2017		Soil	S17-Se03926	X			X		X
7	HA21_0.25-0.35	Aug 31, 2017		Soil	S17-Se03927	X			X		X
8	HA22_0-0.1	Aug 31, 2017		Soil	S17-Se03928	X			X		X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

				X			X	X	X	X
9	HA23_0-0.05	Aug 31, 2017		Soil	S17-Se03929	X				X
10	HA24_0.12-0.22	Aug 31, 2017		Soil	S17-Se03930	X				X
11	HA25_1.3-1.4	Aug 31, 2017		Soil	S17-Se03931	X				X
12	HA26_0.08-0.3	Aug 31, 2017		Soil	S17-Se03932	X				X
13	HA27_0.22-0.35	Aug 31, 2017		Soil	S17-Se03933	X				X
14	HA28_0-0.1	Aug 31, 2017		Soil	S17-Se03934	X				X
15	HA29_0-0.1	Aug 31, 2017		Soil	S17-Se03935	X				X
16	HA30_0-0.05	Aug 31, 2017		Soil	S17-Se03936	X				X
17	HA31_0.75-0.85	Aug 31, 2017		Soil	S17-Se03937	X				X
18	HA32_0.60-	Aug 31, 2017		Soil	S17-Se03938	X				X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X	X
Sydney Laboratory - NATA Site # 18217					X		X		X		X
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736				X				X			
0.63											
19	HA33_0.90-0.95	Aug 31, 2017		Soil	S17-Se03939	X	X		X	X	X
20	HA34_0-0.1	Aug 31, 2017		Soil	S17-Se03940		X				X
21	HA35_0-0.1	Aug 31, 2017		Soil	S17-Se03941		X				X
22	HA36_0-0.1	Aug 31, 2017		Soil	S17-Se03942		X				X
23	HA37_0-0.1	Sep 01, 2017		Soil	S17-Se03943		X				X
24	HA38_0-0.03	Sep 01, 2017		Soil	S17-Se03944		X				X
25	HA39_0-0.03	Sep 01, 2017		Soil	S17-Se03945		X				X
26	HA40_0-0.03	Sep 01, 2017		Soil	S17-Se03946		X				X
27	QC01	Aug 31, 2017		Soil	S17-Se03947		X				X
28	QC02	Aug 31, 2017		Soil	S17-Se03948		X				X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
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Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X	X	X			X
Brisbane Laboratory - NATA Site # 20794						X					
Perth Laboratory - NATA Site # 23736						X		X			
29	TS	Aug 30, 2017		Water	S17-Se03949				X		
30	TB	Aug 30, 2017		Water	S17-Se03950					X	
31	HA15_0.35-0.45	Aug 30, 2017		Soil	S17-Se03951		X				
32	HA17_0-0.1	Aug 30, 2017		Soil	S17-Se03952		X				
33	HA17_0.5-0.6	Aug 30, 2017		Soil	S17-Se03953		X				
34	HA18_0-0.05	Aug 30, 2017		Soil	S17-Se03954	X					
35	HA22_0.2-0.3	Aug 30, 2017		Soil	S17-Se03955		X				
36	HA24_0.1-0.12	Aug 30, 2017		Soil	S17-Se03956	X					
37	HA16_0.15-0.25	Aug 30, 2017		Soil	S17-Se04025			X			
38	RINSATE	Aug 30, 2017		Water	S17-Se04026						X
39	RINSATE	Aug 31, 2017		Water	S17-Se04027						X

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Sep 5, 2017 10:30 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	561673	Due:	Sep 12, 2017
Project Name:	WAGGA WAGGA	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	52480	Fax:		Contact Name:	Scott Burrows
Eurofins mgt Analytical Services Manager : Nibha Vaidya					

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271					X			X	X	X	X
Sydney Laboratory - NATA Site # 18217					X		X		X		X
Brisbane Laboratory - NATA Site # 20794		X									
Perth Laboratory - NATA Site # 23736			X				X				
40	HA15_0.3-0.35	Aug 30, 2017	Soil	S17-Se05292				X			
Test Counts		2	28	2	6	6	6	2	2	28	2
											30

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	mg/L	< 0.02		0.02	Pass	
TRH C10-C14	mg/L	< 0.05		0.05	Pass	
TRH C15-C28	mg/L	< 0.1		0.1	Pass	
TRH C29-C36	mg/L	< 0.1		0.1	Pass	
Method Blank						
BTEX						
Benzene	mg/L	< 0.001		0.001	Pass	
Toluene	mg/L	< 0.001		0.001	Pass	
Ethylbenzene	mg/L	< 0.001		0.001	Pass	
m&p-Xylenes	mg/L	< 0.002		0.002	Pass	
o-Xylene	mg/L	< 0.001		0.001	Pass	
Xylenes - Total	mg/L	< 0.003		0.003	Pass	
Method Blank						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene	mg/L	< 0.01		0.01	Pass	
TRH C6-C10	mg/L	< 0.02		0.02	Pass	
TRH >C10-C16	mg/L	< 0.05		0.05	Pass	
TRH >C16-C34	mg/L	< 0.1		0.1	Pass	
TRH >C34-C40	mg/L	< 0.1		0.1	Pass	
Method Blank						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	mg/L	< 0.001		0.001	Pass	
Acenaphthylene	mg/L	< 0.001		0.001	Pass	
Anthracene	mg/L	< 0.001		0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001		0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001		0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001		0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001		0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001		0.001	Pass	
Chrysene	mg/L	< 0.001		0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001		0.001	Pass	
Fluoranthene	mg/L	< 0.001		0.001	Pass	
Fluorene	mg/L	< 0.001		0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001		0.001	Pass	
Naphthalene	mg/L	< 0.001		0.001	Pass	
Phenanthrene	mg/L	< 0.001		0.001	Pass	
Pyrene	mg/L	< 0.001		0.001	Pass	
Method Blank						
Organochlorine Pesticides						
Chlordanes - Total	mg/L	< 0.001		0.001	Pass	
4,4'-DDD	mg/L	< 0.0001		0.0001	Pass	
4,4'-DDE	mg/L	< 0.0001		0.0001	Pass	
4,4'-DDT	mg/L	< 0.0001		0.0001	Pass	
a-BHC	mg/L	< 0.0001		0.0001	Pass	
Aldrin	mg/L	< 0.0001		0.0001	Pass	
b-BHC	mg/L	< 0.0001		0.0001	Pass	
d-BHC	mg/L	< 0.0001		0.0001	Pass	
Dieldrin	mg/L	< 0.0001		0.0001	Pass	
Endosulfan I	mg/L	< 0.0001		0.0001	Pass	
Endosulfan II	mg/L	< 0.0001		0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	92			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	88			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	
Xylenes - Total	%	85			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	110			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	107			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	98			70-130	Pass	
Acenaphthylene	%	101			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	
Benzo(a)pyrene	%	79			70-130	Pass	
Benzo(b&i)fluoranthene	%	72			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Benzo(g.h.i)perylene	%	79			70-130	Pass			
Benzo(k)fluoranthene	%	86			70-130	Pass			
Chrysene	%	97			70-130	Pass			
Dibenz(a.h)anthracene	%	74			70-130	Pass			
Fluoranthene	%	94			70-130	Pass			
Fluorene	%	100			70-130	Pass			
Indeno(1.2.3-cd)pyrene	%	79			70-130	Pass			
Naphthalene	%	100			70-130	Pass			
Phenanthrene	%	100			70-130	Pass			
Pyrene	%	96			70-130	Pass			
LCS - % Recovery									
Organochlorine Pesticides									
4,4'-DDD	%	125			70-130	Pass			
4,4'-DDE	%	100			70-130	Pass			
4,4'-DDT	%	96			70-130	Pass			
a-BHC	%	113			70-130	Pass			
Aldrin	%	101			70-130	Pass			
b-BHC	%	120			70-130	Pass			
d-BHC	%	116			70-130	Pass			
Dieldrin	%	106			70-130	Pass			
Endosulfan I	%	94			70-130	Pass			
Endosulfan II	%	102			70-130	Pass			
Endosulfan sulphate	%	117			70-130	Pass			
Endrin	%	93			70-130	Pass			
Endrin aldehyde	%	102			70-130	Pass			
Endrin ketone	%	110			70-130	Pass			
g-BHC (Lindane)	%	125			70-130	Pass			
Heptachlor	%	104			70-130	Pass			
Heptachlor epoxide	%	109			70-130	Pass			
Hexachlorobenzene	%	101			70-130	Pass			
Methoxychlor	%	106			70-130	Pass			
LCS - % Recovery									
Heavy Metals									
Arsenic	%	96			80-120	Pass			
Cadmium	%	94			80-120	Pass			
Chromium	%	95			80-120	Pass			
Copper	%	93			80-120	Pass			
Lead	%	93			80-120	Pass			
Mercury	%	90			75-125	Pass			
Nickel	%	93			80-120	Pass			
Zinc	%	98			80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M17-Se01711	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M17-Se01711	NCP	%	129			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Se06284	NCP	%	117			70-130	Pass	
Acenaphthylene	S17-Se06284	NCP	%	100			70-130	Pass	
Anthracene	S17-Se06284	NCP	%	85			70-130	Pass	
Benz(a)anthracene	S17-Se06284	NCP	%	109			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	S17-Se06284	NCP	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Se06284	NCP	%	99			70-130	Pass	
Benzo(g.h.i)perylene	S17-Se06284	NCP	%	110			70-130	Pass	
Benzo(k)fluoranthene	S17-Se06284	NCP	%	114			70-130	Pass	
Chrysene	S17-Se06284	NCP	%	120			70-130	Pass	
Dibenz(a.h)anthracene	S17-Se06284	NCP	%	103			70-130	Pass	
Fluoranthene	S17-Se06284	NCP	%	115			70-130	Pass	
Fluorene	S17-Se06284	NCP	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Se06284	NCP	%	97			70-130	Pass	
Naphthalene	S17-Se06284	NCP	%	101			70-130	Pass	
Phenanthrene	S17-Se06284	NCP	%	99			70-130	Pass	
Pyrene	S17-Se06284	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	M17-Au37043	NCP	%	81			70-130	Pass	
4,4'-DDE	M17-Au37043	NCP	%	84			70-130	Pass	
4,4'-DDT	M17-Au37043	NCP	%	87			70-130	Pass	
a-BHC	M17-Au37043	NCP	%	98			70-130	Pass	
Aldrin	M17-Au37043	NCP	%	84			70-130	Pass	
b-BHC	M17-Au37043	NCP	%	103			70-130	Pass	
d-BHC	M17-Au37043	NCP	%	98			70-130	Pass	
Dieldrin	M17-Au37043	NCP	%	96			70-130	Pass	
Endosulfan I	M17-Au37043	NCP	%	83			70-130	Pass	
Endosulfan II	M17-Au37043	NCP	%	95			70-130	Pass	
Endosulfan sulphate	M17-Au37043	NCP	%	115			70-130	Pass	
Endrin	M17-Au37043	NCP	%	84			70-130	Pass	
Endrin aldehyde	M17-Au37043	NCP	%	80			70-130	Pass	
Endrin ketone	M17-Au37043	NCP	%	102			70-130	Pass	
g-BHC (Lindane)	M17-Au37043	NCP	%	106			70-130	Pass	
Heptachlor	M17-Au37043	NCP	%	94			70-130	Pass	
Heptachlor epoxide	M17-Au37043	NCP	%	98			70-130	Pass	
Hexachlorobenzene	M17-Au37043	NCP	%	84			70-130	Pass	
Methoxychlor	M17-Au37043	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	P17-Se02841	NCP	%	96			75-125	Pass	
Cadmium	P17-Se02841	NCP	%	85			75-125	Pass	
Chromium	P17-Se02841	NCP	%	90			75-125	Pass	
Copper	P17-Se02841	NCP	%	85			75-125	Pass	
Lead	P17-Se02841	NCP	%	85			75-125	Pass	
Mercury	P17-Se02841	NCP	%	90			70-130	Pass	
Nickel	P17-Se02841	NCP	%	86			75-125	Pass	
Zinc	P17-Se02841	NCP	%	85			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1	Result 2	RPD		
TRH C6-C9	M17-Se04810	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M17-Se01709	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-Se01709	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-Se01709	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate								
BTEX								
Benzene	M17-Se04810	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	M17-Se04810	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Ethylbenzene	M17-Se04810	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	M17-Se04810	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
o-Xylene	M17-Se04810	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Xylenes - Total	M17-Se04810	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M17-Se04810	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
TRH C6-C10	M17-Se04810	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH >C10-C16	M17-Se01709	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	M17-Se01709	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	M17-Se01709	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g.h.i)perylene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a.h)anthracene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	S17-Se06283	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4,4'-DDD	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
4,4'-DDE	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
4,4'-DDT	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
a-BHC	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Aldrin	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
b-BHC	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
d-BHC	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Dieldrin	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan I	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan II	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan sulphate	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin aldehyde	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin ketone	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
g-BHC (Lindane)	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Heptachlor	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Heptachlor epoxide	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Hexachlorobenzene	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Methoxychlor	M17-Se05355	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Toxaphene	M17-Se05355	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass

Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Aroclor-1221	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Aroclor-1232	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Aroclor-1242	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Aroclor-1248	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Aroclor-1254	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Aroclor-1260	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Total PCB*	M17-Se05355	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	P17-Se02841	NCP	mg/L	0.001	0.001	5.0	30%	Pass
Cadmium	P17-Se02841	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	P17-Se02841	NCP	mg/L	0.003	0.003	2.0	30%	Pass
Copper	P17-Se02841	NCP	mg/L	0.002	0.002	4.0	30%	Pass
Lead	P17-Se02841	NCP	mg/L	0.003	0.003	<1	30%	Pass
Mercury	P17-Se02841	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	P17-Se02841	NCP	mg/L	0.001	0.001	11	30%	Pass
Zinc	P17-Se02841	NCP	mg/L	0.007	0.010	36	30%	Fail
								Q15

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CERTIFICATE OF ANALYSIS 174951

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Kiu Yeung
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	<u>52480 Wagga Wagga</u>
Number of Samples	2 Soils
Date samples received	05/09/2017
Date completed instructions received	05/09/2017

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	12/09/2017
Date of Issue	12/09/2017
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Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Identifier: Lucy Zhu
 Authorised by Asbestos Approved Signatory: Lulu Scott

Authorised By



David Springer, General Manager

Results Approved By

Giovanni Agosti, Group Technical Manager
 Jeremy Faircloth, Organics Supervisor
 Lulu Scott, Asbestos Supervisor
 Steven Luong, Chemist

Client Reference: 52480 Wagga Wagga

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		174951-1	174951-2
Your Reference	UNITS	QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date extracted	-	06/09/2017	06/09/2017
Date analysed	-	07/09/2017	07/09/2017
TRH C ₆ - C ₉	mg/kg	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	110	102

svTRH (C10-C40) in Soil			
Our Reference	UNITS	174951-1	174951-2
Your Reference		QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date extracted	-	06/09/2017	06/09/2017
Date analysed	-	06/09/2017	06/09/2017
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100
TRH >C ₁₀ - C ₁₆	mg/kg	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH >C ₁₆ - C ₃₄	mg/kg	<100	<100
TRH >C ₃₄ - C ₄₀	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	78	77

PAHs in Soil			
Our Reference	UNITS	174951-1	174951-2
Your Reference		QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date extracted	-	06/09/2017	06/09/2017
Date analysed	-	06/09/2017	06/09/2017
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.4
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.8
Pyrene	mg/kg	<0.1	0.9
Benzo(a)anthracene	mg/kg	<0.1	0.4
Chrysene	mg/kg	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.7
Benzo(a)pyrene	mg/kg	<0.05	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.5
Total +ve PAH's	mg/kg	<0.05	4.4
Surrogate p-Terphenyl-d14	%	90	91

Organochlorine Pesticides in soil			
Our Reference	UNITS	174951-1	174951-2
Your Reference		QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date extracted	-	06/09/2017	06/09/2017
Date analysed	-	07/09/0207	07/09/0207
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	81	82

Client Reference: 52480 Wagga Wagga

PCBs in Soil			
Our Reference		174951-1	174951-2
Your Reference	UNITS	QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date extracted	-	06/09/2017	06/09/2017
Date analysed	-	07/09/2017	07/09/2017
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	81	82

Acid Extractable metals in soil			
Our Reference		174951-1	174951-2
Your Reference	UNITS	QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date prepared	-	06/09/2017	06/09/2017
Date analysed	-	06/09/2017	06/09/2017
Arsenic	mg/kg	<4	5
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	17	26
Copper	mg/kg	30	16
Lead	mg/kg	16	33
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	11	15
Zinc	mg/kg	41	59

Moisture			
Our Reference		174951-1	174951-2
Your Reference	UNITS	QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date prepared	-	06/09/2017	06/09/2017
Date analysed	-	07/09/2017	07/09/2017
Moisture	%	11	15

Asbestos ID - soils NEPM - ASB-001			
Our Reference	UNITS	174951-1	174951-2
Your Reference		QA01	QA02
Date Sampled		31/08/2017	31/08/2017
Type of sample		Soil	Soil
Date analysed	-	11/09/2017	11/09/2017
Sample mass tested	g	604.67	442.33
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos*#1	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—
FA and AF Estimation*	g	—	—
ACM >7mm Estimation*	% (w/w)	<0.01	<0.01
FA and AF Estimation*#2	% (w/w)	<0.001	<0.001

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation.
	NOTE #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF)
	NOTE #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.
	Estimation = Estimated asbestos weight
	Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
	Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-005	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.</p> <p>Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.</p>
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.</p> <p>Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.</p>
Org-012	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.</p> <p>For soil results:-</p> <ol style="list-style-type: none"> 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. <p>Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.</p>
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	<p>Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.</p> <p>Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.</p>

Client Reference: 52480 Wagga Wagga

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Date analysed	-			07/09/2017	[NT]	[NT]	[NT]	[NT]	07/09/2017	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	78	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	90	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	101	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	109	[NT]	[NT]	[NT]	[NT]	112	[NT]

Client Reference: 52480 Wagga Wagga

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Date analysed	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
Surrogate o-Terphenyl	%		Org-003	103	[NT]	[NT]	[NT]	[NT]	93	[NT]

Client Reference: 52480 Wagga Wagga

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Date analysed	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	104	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	82	[NT]	[NT]	[NT]	[NT]	108	[NT]

Client Reference: 52480 Wagga Wagga

QUALITY CONTROL: Organochlorine Pesticides in soil							Duplicate		Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Date analysed	-			07/09/2027	[NT]	[NT]	[NT]	[NT]	07/09/2027	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	91	[NT]	[NT]	[NT]	[NT]	106	[NT]

Client Reference: 52480 Wagga Wagga

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Date analysed	-			07/09/2027	[NT]	[NT]	[NT]	[NT]	07/09/2027	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	91	[NT]	[NT]	[NT]	[NT]	82	[NT]

Client Reference: 52480 Wagga Wagga

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Date analysed	-			06/09/2017	[NT]	[NT]	[NT]	[NT]	06/09/2017	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	118	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	113	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 174951-2 is below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

07298

CHAIN OF CUSTODY



PROJECT NO.:	LABORATORY BATCH NO.:						
PROJECT NAME:	SAMPLERS: F.Y., M.C.						
DATE NEEDED BY:	QC LEVEL: NEPM (2013)						
PHONE: Sydney: 02 8245 0300 Perth: 08 9488 0100 Brisbane: 07 3112 2688	SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) SPURKREW.S@jbsg.com.au; (3) f.yehang.....@jbsg.com.au						
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: Please transfer to EnviroLab							
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	NOTES:	
QA01	Soil	31/8		Zinc + Sulfuric Acid	X		
QA02			↓		X		
RELINQUISHED BY:							
NAME: F. Yehang Date: 5/9/17	METHOD OF SHIPMENT:						
OF: JBS&G	CONSIGNMENT NOTE NO.:						
NAME: DATE:	TRANSPORT CO.						
OF:	CONSIGNMENT NOTE NO.:						
NAME: DATE:	TRANSPORT CO.						
OF:	COOLER TEMP deg C						
NAME: DATE:	COOLER SEAL - Yes No Intact Broken						
OF:	COOLER TEMP deg C						
FOR RECEIVING LAB USE ONLY:							
NAME: DATE: OF:	COOLER SEAL - Yes No Intact Broken						
Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd							
IMSO Forms013 - Chain of Custody - Generic							