

VOICES OF THE VALLEY

WATER ANALYSIS

COMPILED - 15/4/2014

HAZELWOOD MINE FIRE

INQUIRY SUBMISSION



Environmental Division (Water Resources Group)



CERTIFICATE OF ANALYSIS

Batch No:	14-12920	Page	Page 1 of 13
Interim Report	423015	Laboratory	Scoresby Laboratory
Client:	EPA Victoria	Address	Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
Contact:	EPA Front Desk	Phone	03 8756 8000
Address:	Centre for Environmental Sciences Ernest Jones Drive MACLEOD VIC 3085	Fax	03 9763 1862
Client Program Ref:	MF14-027	Contact:	
ALS Program Ref:	PROSECUT	Date Sampled:	12-Mar-2014
PO No:	P027832	Date Samples Received:	13-Mar-2014
		Date Issued:	14-Mar-2014

The sample(s) referred to in this report were analysed by the following method(s).
- NATA accreditation does not cover the performance of this service.

Analysis	Method	Laboratory	Analysis	Method	Laboratory	Analysis	Method	Laboratory
GCMS-SV	# US EPA 8270C	Scoresby	HVOL	VIC-CM047	Scoresby	MAH	VIC-CM051 & CM047	Scoresby
MS Total Metals	VIC-CM050 C	Scoresby	PAH	VIC-CM043	Scoresby	pH	VIC-CM060 B	Scoresby
SOLVENTS	VIC-CM051	Scoresby	GCMS-SV	# US EPA 8270C	Scoresby	HVOL	VIC-CM047	Scoresby
MAH	VIC-CM051 & CM047	Scoresby	MS Total Metals	VIC-CM050 C	Scoresby	PAH	VIC-CM043	Scoresby
pH	VIC-CM060 B	Scoresby	SOLVENTS	VIC-CM051	Scoresby			

Result for pH in water tested in the laboratory may be indicative only as holding time is generally not achievable.
Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Sampling officer: Sarah Cumming
Sampled date: 12/3/14

The samples were received on ice and in sealed bags.
Their IDs, bag seal IDs, site description, bottle types and samples descriptions -
05994/1 - 4080899 - 12 Wallace St (ash) - Glass jar - Ash sample.
05994/2 - 4080900 - 12 Wallace St (ash) - Plastic jar - Ash sample.
05994/3 - 4074067 - Ash (field blank) - Glass jar - Empty bottle supplied and bottle was filled with DI water in the laboratory.
05994/4 - 4074068 - Ash (field blank) - Plastic jar - Empty bottle supplied and bottle was filled with DI water in the laboratory.

Sample analysis (for water and ash samples) was commenced on:

HMFI.0011.001.0013

SV GCMS Scan - 13/3/14
PAH - 13/3/14
Metals scan - 13/3/14
pH - 13/3/14
HVOLs - 13/3/14
Solvents - 13/3/14
MAH - 13/3/14

Spike analyse is not applicable for pH and SV GCMS scan.

The results provided in this report were obtained from analytical batches that included QC data which met ALS-WRG's acceptance criteria.



Signatories

These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11

<i>Name</i>	<i>Title</i>	<i>Name</i>	<i>Title</i>
Chatura Perera	Team Leader Nutrients	Hao Zhang	Team Leader Organics
John Earl	Team Leader Metals	Kosta Christopoulos	Chemist/Analyst

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Chemistry			Analysis:	pH
Sample	Sampled Date	Your Ref	Component:	pH
			Units:	Units
			Sample Type	
3826215	12-03-14	05994/4	WATER	5.6

Soil Analysis			Analysis:	pH
Sample	Sampled Date	Your Ref	Component:	pH
			Units:	Units
			Sample Type	
3826213	12-03-14	05994/2	OTHER	10.2

Metals			Analysis:	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals
Sample	Sampled Date	Your Ref	Component:	Aluminium	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type									
3826215	12-03-14	05994/4	WATER	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	<0.0002	<0.001	<0.001

Metals			Analysis:	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals
Sample	Sampled Date	Your Ref	Component:	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type							
3826215	12-03-14	05994/4	WATER	0.002	<0.01	<0.001	<0.001	<0.0001	<0.001	<0.001

Metals			Analysis:	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals
Sample	Sampled Date	Your Ref	Component:	Strontium	Thallium	Tin	Titanium	Vanadium	Zinc
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type						
3826215	12-03-14	05994/4	WATER	<0.001	<0.001	<0.001	<0.001	<0.001	0.006

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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Soil Metals			Analysis:	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	
Sample	Sampled Date	Your Ref	Component:	Al	Sb	As	Ba	Be	B	Cd	Cr	Co
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826213	12-03-14	05994/2	OTHER	14000	<5	<5	380	<5	250	0.3	11	44

Soil Metals			Analysis:	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	
Sample	Sampled Date	Your Ref	Component:	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826213	12-03-14	05994/2	OTHER	16	28000	3	380	0.39	<5	19	7	<5

Soil Metals			Analysis:	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	
Sample	Sampled Date	Your Ref	Component:	Sr	Tl	Th	Sn	Ti	U	V	Zn	
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			Sample Type									
3826213	12-03-14	05994/2	OTHER	1300	<5	<5	<5	450	<5	16	110	

MAH			Analysis:	MAH	MAH	MAH	MAH	MAH	MAH	MAH
Sample	Sampled Date	Your Ref	Component:	Benzene	Toluene	Ethyl Benzene	Xylenes	Styrene	Cumene	124TriMethylBenz
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type							
3826214	12-03-14	05994/3	WATER	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001

Soil MAH			Analysis:	MAH	MAH	MAH	MAH	MAH	MAH	MAH
Sample	Sampled Date	Your Ref	Component:	Benzene	Toluene	Ethyl Benzene	Xylenes	Styrene	Cumene	124TriMethylBenz
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type							
3826212	12-03-14	05994/1	OTHER	<1 LORR	1.3	<1 LORR	<2 LORR	<1 LORR	<1 LORR	<1 LORR

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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PAH			Analysis:	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	
Sample	Sampled Date	Your Ref	Component:	NAP	ACY	ACE	FLU	PHE	ANT	FLA	PYR	BAA
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type									
3826214	12-03-14	05994/G	WATER	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

PAH			Analysis:	PAH	PAH	PAH	PAH	PAH	PAH	PAH	
Sample	Sampled Date	Your Ref	Component:	CHR	BBF	BKF	BAP	DBA	BGP	IPY	TOTPAH
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type								
3826214	12-03-14	05994/G	WATER	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Soil PAH			Analysis:	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	
Sample	Sampled Date	Your Ref	Component:	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benz(b)fluoranthene	Benzo(ghi)perylene	Benz(k)fluoranthene	Chrysene
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826212	12-03-14	05994/1	OTHER	<0.2 LORR	<0.2 LORR	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.2

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Soil PAH			Analysis:	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	
Sample	Sampled Date	Your Ref	Component:	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	BaP TEQ (zero)
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826212	12-03-14	05994/1	OTHER	<0.1	0.7	<0.8 LORR	<0.1	4.1	4.1	0.5	10	<0.1

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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Soil PAH			Analysis:	PAH
Sample	Sampled Date	Your Ref	Component:	BaP TEQ (LOR)
			Units:	mg/kg
			Sample Type	
3826212	12-03-14	05994/1	OTHER	0.2

Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
Sample	Sampled Date	Your Ref	Component:	1112TetraChlEthane	1122TetraChlEthane	1,1DiChloroEthane	1,1DiChloroEthene	11DiChlorPropene	123TriChlPropane	12DiBr3ChlPpane	12DiBromoEthane	12DiChlorEthene(c)
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type									
3826214	12-03-14	05994/3	WATER	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
Sample	Sampled Date	Your Ref	Component:	12DiChlorEthene(l)	12DiChloroEthane	12 DiChlPropane	13DiChlorPropane	13DiChlPropene(c)	13DiChlPropene(l)	22DiChlorPropane	2-ChloroToluene	4-ChloroToluene
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type									
3826214	12-03-14	05994/3	WATER	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
Sample	Sampled Date	Your Ref	Component:	BromChlorMethane	BroDiChlorMethane	BromoBenzene	Bromoform	CarbonTetChloride	Chloroform	ChloroBenzene	DiBroChlorMethane	DiBromoMethane
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type									
3826214	12-03-14	05994/3	WATER	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
Sample	Sampled Date	Your Ref	Component:	DiChloroMethane	TriChloroFluMethane	TetraChloroEthene	Vinyl Chloride	111TriChlorEthane	112TriChloroEthane
			Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Sample Type						
3826214	12-03-14	05994/3	WATER	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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Soil Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
Sample	Sampled Date	Your Ref	Component:	1112TetraChloroEthane	1122TetraChloroEthane	1,1DiChloroEthane	1,1DiChloroEthene	11DiChloroPropene	123TriChloroPropene	12DiBromoChloroPropene	12DiChloroEthene[c]	12DiChloroEthene[l]
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826212	12-03-14	05994/1	OTHER	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Soil Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
Sample	Sampled Date	Your Ref	Component:	12DiChloroEthane	12DiChloroPropene	13DiChloroPropene	13DiChloroPropene[c]	13DiChloroPropene[l]	22DiChloroPropene	2-ChloroToluene	4-ChloroToluene	BromoChloroMethane
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826212	12-03-14	05994/1	OTHER	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Soil Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
Sample	Sampled Date	Your Ref	Component:	BroDiChloroMethane	BromoBenzene	Bromoform	CarbonTetrachloride	Chloroform	ChloroBenzene	DiBromoChloroMethane	DiBromoMethane	12DiBromoEthane
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type									
3826212	12-03-14	05994/1	OTHER	<1 LORR	<1 LORR	<1 LORR	<1 LORR	1.1	<1 LORR	<1 LORR	<1 LORR	<1 LORR

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Soil Halo. Volatiles			Analysis:	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
Sample	Sampled Date	Your Ref	Component:	DiChloroMethane	TriChloroFluoromethane	TetraChloroEthene	Vinyl Chloride	111TriChloroEthane	112TriChloroEthane	TriChloroEthene
			Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Sample Type							
3826212	12-03-14	05994/1	OTHER	<2 LORR	<2 LORR	<1 LORR	<2 LORR	<1 LORR	<1 LORR	<1 LORR

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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Solvents

Sample	Sampled Date	Your Ref	Analysis:	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	
				Acetone mg/L	Acrylonitrile mg/L	Ethylhexyl Acrylate mg/L	Isopropanol mg/L	Methylethyl Ketone mg/L	MIBK mg/L	
3826214	12-03-14	05994/3	Component: Units: Sample Type	WATER	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Soil Solvents

Sample	Sampled Date	Your Ref	Analysis:	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	
				Acetone mg/kg	Acrylonitrile mg/kg	Ethylhexyl Acrylate mg/kg	Isopropanol mg/kg	Methylethyl Ketone mg/kg	MIBK mg/kg	
3826212	12-03-14	05994/1	Component: Units: Sample Type	OTHER	2.2	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

GC-MS Scan- Semi-Vol

Sample	Sampled Date	Your Ref	Analysis:	GCMS-SV	GCMS-SV
				GCMS-SemVol Scan	GCMS-SemVol Scan
3826212	12-03-14	05994/1	Component: Units: Sample Type	OTHER	Pending
3826214	12-03-14	05994/3		WATER	Pending

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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Quality Control

Halo. Volatiles

	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
	1112TetraClEthane	1122TetraClEthane	1,1DiChloroEthane	1,1DiChloroEthene	11DiChlorPropene	123TriChPropene	12DiB:3ChPropene	12DiBromoEthane	12DiChlorEthene[c]
3826214 DUPLICATE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3826214 DUPLICATE Duplicate Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3826214 DUPLICATE % RPD	0	0	0	0	0	0	0	0	0
3826733 BLANK Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Halo. Volatiles

	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
	12DiChlorEthene[d]	12DiChloroEthane	12 DiChloroPropane	13DiChloroPropane	13DiChlorPropene[c]	13DiChlorPropene[e]	22DiChloroPropane	2-ChloroToluene	4-ChloroToluene
3826214 DUPLICATE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3826214 DUPLICATE Duplicate Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3826214 DUPLICATE % RPD	0	0	0	0	0	0	0	0	0
3826733 BLANK Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Halo. Volatiles

	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
	BromChloroMethane	BroDiChloroMethane	BromoBenzene	Bromoform	CarbonTetChloride	Chloroform	ChloroBenzene	DiBroChloroMethane	DiBromoMethane
3826214 DUPLICATE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3826214 DUPLICATE Duplicate Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3826214 DUPLICATE % RPD	0	0	0	0	0	0	0	0	0
3826733 BLANK Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Halo. Volatiles

	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
	DiChloroMethane	TriChloroFluoromethane	TetraChloroEthane	Vinyl Chloride	111TriChloroEthane	112TriChloroEthane	TriChloroEthene
3826214 DUPLICATE Sample Value	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001
3826214 DUPLICATE Duplicate Value	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001
3826214 DUPLICATE % RPD	0	0	0	0	0	0	0
3826733 BLANK Value	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001

Soil Halo. Volatiles

	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL
	1112TetraClEthane	1122TetraClEthane	1,1DiChloroEthane	1,1DiChloroEthene	11DiChlorPropene	123TriChPropene	12DiB:3ChPropene	12DiChloroEthene[c]	12DiChloroEthene[e]
3824232 DUPLICATE Sample Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232 DUPLICATE Duplicate Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232 DUPLICATE % RPD	0	0	0	0	0	0	0	0	0
3827222 BLANK Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MMS24: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MMS26: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.



Soil Halo. Volatiles			HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
			12DichloroEthane	12 DichloroPropane	13DichloroPropane	13DichloroPropene[c]	13DichloroPropene[t]	22DichloroPropane	2-ChloroToluene	4-ChloroToluene	BromChloroMethane
3824232	DUPLICATE	Sample Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232	DUPLICATE	Duplicate Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232	DUPLICATE	% RPD	0	0	0	0	0	0	0	0	0
3827222	BLANK	Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Soil Halo. Volatiles			HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
			BromoDichloroMethane	BromoBenzene	Bromoform	CarbonTetrachloride	Chloroform	ChloroBenzene	DiBromoChloroMethane	DiBromoMethane	12DiBromoEthane
3824232	DUPLICATE	Sample Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232	DUPLICATE	Duplicate Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232	DUPLICATE	% RPD	0	0	0	0	0	0	0	0	0
3827222	BLANK	Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Soil Halo. Volatiles			HVOL	HVOL	HVOL	HVOL	HVOL	HVOL	
			DiChloroMethane	TriChloroFluoroMethane	TetraChloroEthene	Vinyl Chloride	111TriChloroEthane	112TriChloroEthane	TriChloroEthene
3824232	DUPLICATE	Sample Value	<1 LORR	<2 LORR	<0.5	<1 LORR	<0.5	<0.5	<0.5
3824232	DUPLICATE	Duplicate Value	<1 LORR	<2 LORR	<0.5	<1 LORR	<0.5	<0.5	<0.5
3824232	DUPLICATE	% RPD	0	0	0	0	0	0	0
3827222	BLANK	Value	<1	<2	<0.5	<1	<0.5	<0.5	<0.5

MAH			MAH	MAH	MAH	MAH	MAH	MAH	
			Benzene	Toluene	Ethyl Benzene	Xylenes	Styrene	Cumene	124TriMethylBenz
3826214	DUPLICATE	Sample Value	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001
3826214	DUPLICATE	Duplicate Value	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001
3826214	DUPLICATE	% RPD	0	0	0	0	0	0	0
3826735	BLANK	Value	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001

Soil MAH			MAH	MAH	MAH	MAH	MAH	MAH	
			Benzene	Toluene	Ethyl Benzene	Xylenes	Styrene	Cumene	124TriMethylBenz
3824232	DUPLICATE	Sample Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232	DUPLICATE	Duplicate Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3824232	DUPLICATE	% RPD	0	0	0	0	0	0	0
3827225	BLANK	Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.



Metals		MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	
		Aluminium	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt
3827035	BLANK Value	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	<0.0002	<0.001	<0.001
3826215	DUPLICATE Sample Value	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	<0.0002	<0.001	<0.001
3826215	DUPLICATE Duplicate Value	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	<0.0002	<0.001	<0.001
3826215	DUPLICATE % RPD	0	0	0	0	0	0	0	0	0

Metals		MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	
		Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver
3827035	BLANK Value	<0.001	<0.01	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001
3826215	DUPLICATE Sample Value	0.002	<0.01	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001
3826215	DUPLICATE Duplicate Value	0.002	<0.01	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001
3826215	DUPLICATE % RPD	2.4	0	0	0	0	0	0	0	0

Metals		MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals
		Strontium	Thallium	Tin	Titanium	Zinc
3827035	BLANK Value	<0.001	<0.001	<0.001	<0.001	<0.001
3826215	DUPLICATE Sample Value	<0.001	<0.001	<0.001	<0.001	0.006
3826215	DUPLICATE Duplicate Value	<0.001	<0.001	<0.001	<0.001	0.006
3826215	DUPLICATE % RPD	0	0	0	0	0.9

PAH		PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	
		NAP	ACY	ACE	FLU	PHE	ANT	FLA	PYR	BAA
3823739	SPIKE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3823739	SPIKE Expected Value	0.033		0.033	0.033	0.033	0.033	0.033	0.033	0.033
3823739	SPIKE % Recovery	70.4		87.6	102	96.4	95.6	89.6	92.0	88.0
3823760	DUPLICATE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3823760	DUPLICATE Duplicate Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3823760	DUPLICATE % RPD	0	0	0	0	0	0	0	0	0
3826859	BLANK Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

PAH		PAH	PAH	PAH	PAH	PAH	PAH	PAH	
		CHR	BBF	BKF	BAP	DBA	BGP	IPY	TOTPAH
3823739	SPIKE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
3823739	SPIKE Expected Value	0.033	0.033	0.033	0.033	0.033	0.033	0.033	
3823739	SPIKE % Recovery	93.2	75.2	83.2	80.8	58.8	83.2	94.8	
3823760	DUPLICATE Sample Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3823760	DUPLICATE Duplicate Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM525: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH
	CHR	BGF	BKF	BAP	DBA	BGP	IPY	TOTPAH
3823760 DUPLICATE % RPD	0	0	0	0	0	0	0	0
3826859 BLANK Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Soil PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH
	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene
3826864 BLANK Value	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Soil PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH
	Dibenz(ah)anthracene	Fluoranthene	Fluorene	Indeno(1,23)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	BaP TEQ (zero)
3826864 BLANK Value	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Soil PAH	PAH
	BaP TEQ (LOR)
3826864 BLANK Value	0.2

Soil Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals
	Al	Sb	As	Ba	Be	B	Cd	Cr	Co
3826939 BLANK Value	<5	<5	<5	<5	<5	<10	<0.2	<5	<5
3826213 DUPLICATE Sample Value	14000	<5	<5	380	<5	250	0.3	11	44
3826213 DUPLICATE Duplicate Value	13000	<5	<5	400	<5	240	0.4	11	41
3826213 DUPLICATE % RPD	3.8	0	0	6.0	0	4.1	14.0	3.8	5.1

Soil Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals
	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag
3826939 BLANK Value	<5	<10	<5	<5	<0.05	<5	<5	<3	<5
3826213 DUPLICATE Sample Value	16	28000	8	380	<5	<5	19	7	<5
3826213 DUPLICATE Duplicate Value	15	27000	8	360	<5	<5	23	7	<5
3826213 DUPLICATE % RPD	2.2	3.5	4.3	3.8	0	19.9	1.1	0	0

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

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Soil Metals			MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	MS Total Metals	
			Sr	Tl	Th	Sn	Ti	U	V	Zn
3826939	BLANK	Value	<5	<5	<5	<5	<5	<5	<5	<5
3826213	DUPLICATE	Sample Value	1300	<5	<5	<5	450	<5	16	110
3826213	DUPLICATE	Duplicate Value	1200	<5	<5	<5	440	<5	15	110
3826213	DUPLICATE	% RPD	3.7	0	0	0	2.3	0	5.4	0.2

Solvents			SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS
			Acetone	Acrylonitrile	Ethylhexyl Acrylate	Isopropanol	Methylethyl Ketone	MIBK
3826214	DUPLICATE	Sample Value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
3826214	DUPLICATE	Duplicate Value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
3826214	DUPLICATE	% RPD	0	0	0	0	0	0
3826964	BLANK	Value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Soil Solvents			SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS	SOLVENTS
			Acetone	Acrylonitrile	Ethylhexyl Acrylate	Isopropanol	Methylethyl Ketone	MIBK
3827090	BLANK	Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3826212	DUPLICATE	Sample Value	2.2	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR
3826212	DUPLICATE	Duplicate Value	2.2	<1 LORR	<1 LORR	<1 LORR	<1 LORR	<1 LORR
3826212	DUPLICATE	% RPD	1.9	0	0	0	0	0

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

HMF.I.0011.001.0029