

Soil Contamination Risk Site Validation Report

***Homestead Areas,
2 & 4 Glovers Road,
Halswell, Christchurch***

June 2021



Malloch Environmental Ltd

19 Robertsons Road, Kirwee

RD1, Christchurch 7671

021 132 0321

www.mallochenviro.co.nz

QUALITY CONTROL AND CERTIFICATION SHEET

Client: Your Section Ltd

Date of issue: 14 June 2021

Report written by:

Fran Hobkirk, Environmental Scientist, BSc
(4 years contaminated land experience)

Signed: 

Report reviewed and certified as a Suitably Qualified and Experienced Practitioner by:

Nicola Peacock, Principal Environmental Engineer, NZCE, CEnvP
(12 years contaminated land experience within 28 years environmental experience)

Signed: 



CONTENTS

1	Executive Summary.....	4
2	Objectives of the Report	5
3	Scope of Work Undertaken.....	5
4	Site Identification	6
5	Site Description and Surrounding Environment	7
6	Geology and Hydrology.....	7
7	Basis for Guideline Values.....	8
7.1	Activity Description	8
7.2	Zoning.....	8
7.3	Soil Guideline Values.....	8
8	Summary of DSI Results	8
9	Summary of Remediation Action Plan	9
10	Remediation Actions and Validation Sampling.....	10
11	Field Quality Assurance and Quality Control	12
12	Laboratory Quality Assurance and Quality Control	13
13	Results Summary.....	13
14	Site Characterisation and Conclusion	14
15	Limitations.....	15

APPENDICES

- A. DSI Sample Location Plan
- B. Asbestos Delineation Sampling Plan
- C. Validation Sample Location Plans
- D. Table of Validation XRF Results
- E. Table of Validation Results
- F. Laboratory Report
- G. Asbestos Air Monitoring Reports
- H. Disposal Documentation
- I. Photographs of Remediation

1 Executive Summary

The subject site involves two rural residential lots with street addresses 2 and 4 Glovers Road, Christchurch. It is proposed to subdivide and develop the site for a residential use. This will change the use of the land and result in disturbance of soils. An assessment in terms of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) was carried out to determine the likelihood of soil contamination being present. It is noted also that Malloch Environmental Ltd is obligated to consider the requirements of Section 10 of the Health and Safety at Work (Asbestos) Regulations 2016.

Preliminary and Detailed Site Investigations were completed by Malloch Environmental Ltd (MEL) in November 2020. The investigations identified risks of contamination on the subject site from multiple historical and current uses. Soil sampling then confirmed that contamination above 'residential 10% produce' soil guideline values is present on the subject site. Lead contamination with some arsenic contamination was found around previous and existing old buildings on the north of the subject site. This contamination is shown on the plan in **Appendix A**. Arsenic contamination was found in two areas of the paddocks on the southern half of 2 Glovers Road. A burn area and adjacent stockpiled material on the southern end of 4 Glovers Road contained arsenic and lead contamination.

It was recommended that the contaminated areas be remediated prior to development of the subject site. It was proposed to remediate the contaminated areas by excavating and disposing an approved facility. The majority of the contaminated soils met the acceptance criteria for Burwood Landfill. The more highly contaminated soils should meet Burwood Landfill acceptance criteria after mixing, this will be confirmed by XRF testing prior to disposal.

This Site Validation Report details the remediation undertaken to ensure the homestead areas on the north of the subject site are suitable for residential use. Separate reports will be completed to cover the remediation of the arsenic contamination within the paddocks and the burn area. Remediation of the homestead areas of the subject site took place in multiple stages from the 26th of February until the 28th of May 2021. Prior to remediation most of the buildings within the homestead area were demolished. A site walkover by MEL on the 26th of February identified two areas contaminated with broken asbestos cement board (ACM). Remediation of the heavy metal contamination was postponed until remediation of any overlapping ACM impacted soils was completed.

A few isolated pieces of ACM were removed from around demolished sheds and a garage on 2 Glovers Road. No asbestos was detected in any of the six 'asbestos in soils' samples taken from across the area. No further ACM debris was identified during a second walkover. The ACM in this area was considered successfully remediated.

The ACM impacted soils identified around the demolished shed on 4 Glovers Road were excavated until no visible pieces of ACM remained on the base or walls of the excavation. Validation sampling was used to confirm no asbestos contamination remained. As agreed with the client, where a validation result was positive for asbestos further excavation was undertaken until only results of 'no asbestos detected' remained. Most of the ACM impacted soils were sent to Kate Valley Landfill for disposal. Once sampling showed only minor amounts of asbestos remaining the final excavated soils were sent to Hororata Managed Fill Site. To delineate and validate the asbestos contamination, a total of 47 'asbestos in soil' samples were submitted to the laboratory for asbestos presence/absence analysis with semi-quantitative

analysis to follow any positive results. No asbestos was detected in any sample locations remaining in-situ.

Remediation of the heavy metal contaminated areas was undertaken by excavation with disposal to Burwood Landfill. Two areas, to cover all the locations from the DSI with results exceeding 'residential 10% produce' SGVs, were excavated to 300mm. Parts of the eastern area had already been excavated to remediate the ACM impacted soils. XRF testing was used to identify any remaining soils with heavy metals above residential SGVs, which were then excavated. Validation samples were submitted to the lab for heavy metal analysis to confirm the XRF results. One result exceeded the 'residential 10% produce' SGV for lead. Additional excavation was undertaken, and the area was re-validated. None of the subsequent samples exceeded 'residential 10% produce' SGVs. In total, twenty-nine validation samples were submitted to the lab for seven heavy metal analysis. The laboratory results show one location exceeds the ecological guideline value for zinc. As the sample location is not near any ecological features this is not considered to pose a risk. Lead and zinc are above expected background levels in 11 locations. Arsenic, cadmium, chromium, and copper are also above expected background levels in some locations.

A total of 108.82 tonnes of soil were disposed of at Kate Valley Landfill and 32.92 tonnes of soil were disposed of at Hororata Managed Fill Site from the remediation of the homestead areas. The attempted remediation of the arsenic affected soils within the paddocks of the site by excavation and disposal to Burwood Landfill was undertaken at the same time as the homestead areas and under the same waste manifest. Therefore, it is not possible to isolate the soils sent to Burwood from the homestead area. A total of 5,548.06 tonnes of soil was disposed of at Burwood Landfill from the subject site as a whole during the period of remediation activities.

The remediation actions have successfully remediated the ACM and heavy metal contamination within the homestead areas. This northern part of the subject site is considered to be suitable for its proposed residential use with no further actions required.

2 Objectives of the Report

The objective of the report is to detail the remedial actions undertaken which will ensure the site is suitable for future residential use. It also describes the validation sampling undertaken and results received.

It has been completed in accordance with the Ministry for the Environment's (MfE) "Contaminated Land Management Guidelines No 1: Reporting on Contaminated Sites in New Zealand".

3 Scope of Work Undertaken

This report includes all requirements for a Stage 4 Validation report and includes:

- A summary of the site and the results of the previous reports
- Details of the remedial works undertaken
- Details of the validation sampling undertaken and results analysis
- Preparation of report in accordance with MfE guidelines

4 Site Identification

The subject site is located at 2 and 4 Glovers Road in the Halswell area of Christchurch as shown on the plan in **Figure 1** below. The subject site is legally described as Lot 1 and Lot 2 DP 83635 and has a total area of approximately 8.3064Ha.

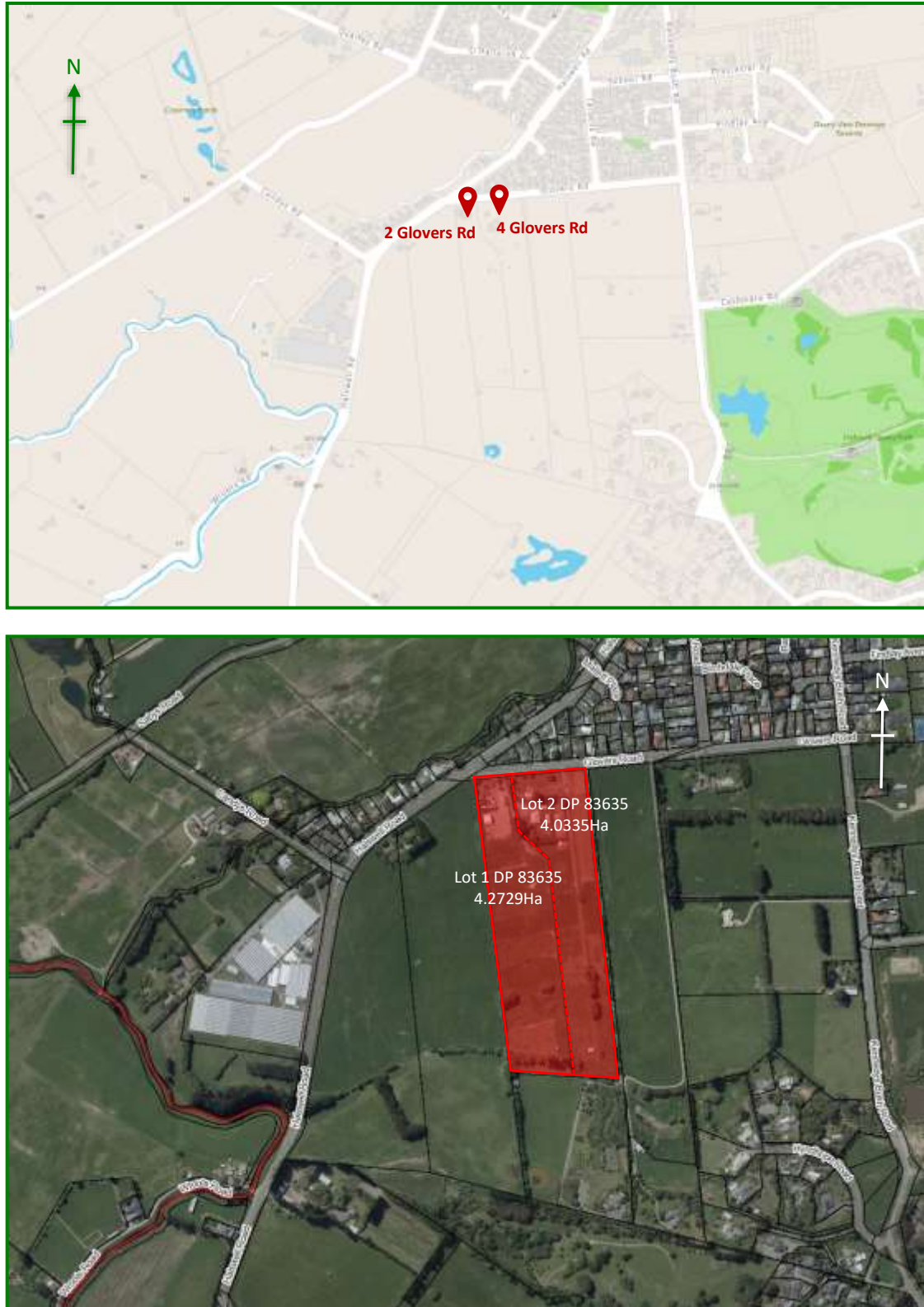


Figure 1 – Location Plan

5 Site Description and Surrounding Environment

The subject site is generally flat rural residential land on Glovers Road in Christchurch. Prior to demolition or removal, there were dwellings, garages and sheds on the north of the subject site. The rest of the subject site was used for grazing horses with some additional sheds. The subject site is clearly defined by existing hedges and fences. It is bounded by rural residential land except to the north where there are residential lots.

6 Geology and Hydrology

The ECan GIS describes the soils as a combination of Waimakariri deep loam, Kaiapoi deep silty loam and Matapihi deep silty loam. Trace elements are a combination of 'Regional, Recent' and 'Regional, Gley'. The soil types and trace elements are shown on the plan in **Figure 2** below. White lines indicate the soil type boundaries, coloured shading indicates the two different trace element areas. Wells in the area indicate that topsoils are underlain by layers of sand, clay, sandy gravels and gravels.

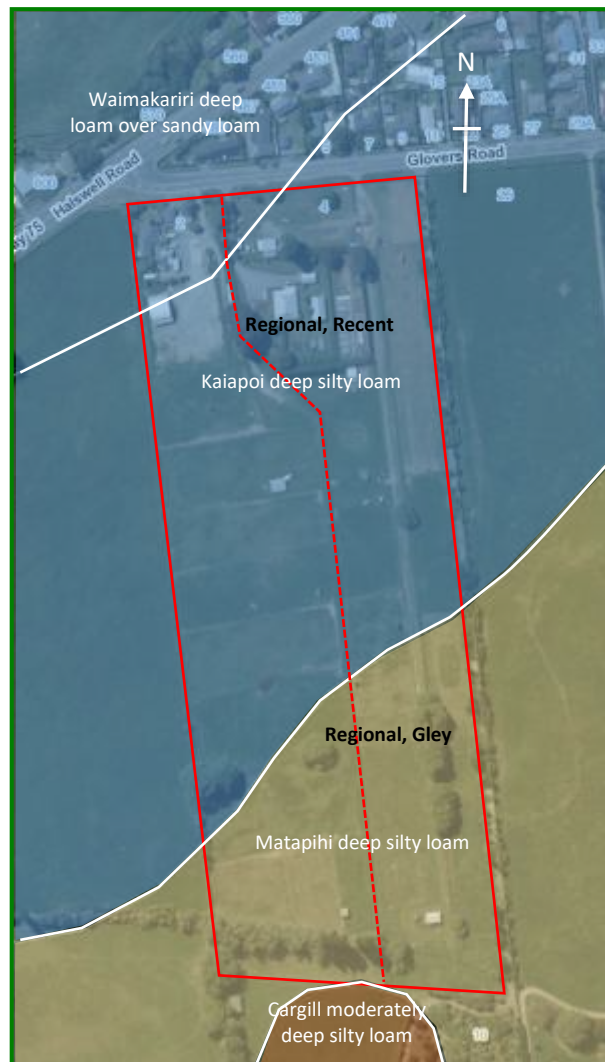


Figure 2 – Soil Type Plan

The subject site lies over the coastal confined gravel aquifer system. Ground water levels recorded on on-site bore logs are between 0.50m and 1.17m deep. The direction of ground

water flow is generally in a south-easterly direction. The nearest active down gradient well is approximately 42m to the south-east.

An open drain flows across the subject site. Nottingham Stream lies approximately 50m north of the subject site.

7 Basis for Guideline Values

7.1 Activity Description

This report has been written for the following activities:

- Subdivision and development of the subject site for residential use
- Soil disturbance activities associated with the above use and development.

7.2 Zoning

The subject site is currently zoned Residential New Neighbourhood Zone in the Christchurch District Plan.

7.3 Soil Guideline Values

Human health soil contaminant standards for a group of 12 priority contaminants were derived under a set of five land-use scenarios and are legally binding under The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Health) Regulations 2011 (NES). These standards have been applied where applicable. The regulations describe these as Soil Contaminant Standards. For contaminants other than the 12 priority contaminants, the hierarchy as set out in the Ministry for the Environment Contaminated Land Management Guidelines No 2 has been followed. These are generally described as Soil Guideline Values. For simplicity, this report uses the terminology Soil Guideline Values (SGV) when referring to the appropriate soil contaminant standard or other derived value from the hierarchy. For soil, guideline values are predominantly risk based, in that they are typically derived using designated exposure scenarios that relate to different land uses. For each exposure scenario, selected pathways of exposure are used to derive guideline values. These pathways typically include soil ingestion, inhalation and dermal adsorption. The guideline values for the appropriate land use scenario relate to the most critical pathway.

The land-use scenarios applicable for the proposed use of the subject site and any associated earth disturbing activities include 'residential 10% produce' and 'commercial/industrial/outdoor workers' as a proxy value to protect the health of construction workers.

8 Summary of DSI Results

Preliminary and Detailed Site Investigations (PSI & DSI) on the subject site were completed by Malloch Environmental Ltd in November 2020. The PSI identified potential sources of contamination on the subject site from multiple historical and current uses. Soil sampling then confirmed contamination above 'residential 10% produce' soil guideline values is present on the subject site.

Homestead Areas

Lead contamination with some arsenic contamination is present around existing and previous old buildings on the north of the site within the homestead areas of both 2 and 4 Glovers Road. The highest lead result was 1,190mg/kg and the highest arsenic result was 41.1mg/kg. The average level of lead contamination exceeding the SGV was approximately 470mg/kg. The contamination has not yet been fully delineated, but this can occur using XRF during remediation. The affected areas are shown on the sampling location plan in **Appendix A**.

Two Arsenic Contaminated Paddock Areas

Two areas of arsenic contamination are present within the paddocks on the southern half of 2 Glovers Road. The area around SS30 measures approximately 760m² and the area around SS5 measures approximately 880m² giving a total affected area of approximately 1,640m². The highest arsenic result was 46mg/kg, the average of the arsenic results above the SGV is approximately 30mg/kg. Sampling showed arsenic below background levels at 450-500mm depth within these two areas.

Burn Area

A burn area is present on the southern end of 4 Glovers Road with an adjacent stockpile of soil and green waste that was noted to include ash. Sampling has shown the burn area and stockpile contain arsenic above the 'residential 10% produce' SGV. Arsenic also exceeded the commercial/industrial/outdoor worker SGV in the burn area samples. Lead exceeded the 'residential 10% produce' SGV in the 250mm depth burn area sample.

The DSI recommended that the contaminated areas of the site be remediated prior to development to ensure that the site is suitable for residential use.

9 Summary of Remediation Action Plan

A Remediation Action Plan (RAP) was produced that covered all the contaminated areas identified by the DSI. As this Site Validation Report only covers the remediation of the homestead areas on the north of the subject site only those parts of the RAP are summarised here.

The viable remediation options considered for were:

- Excavating and relocating the contaminated soils to an alternative location on site such as a recreational area or bund.
- Excavating and removing all contaminated soils and disposal to an approved landfill or location.

After discussions with the client, it was decided the contaminated areas would be remediated by excavation of the contaminated soils with disposal to an approved landfill.

The remediation goals were:

- Ensure that the remaining soils within residential areas of the site have arsenic and lead concentrations below the 'residential 10% produce' SGV of 20mg/kg for arsenic and 210mg/kg for lead.
- Ensure that any contaminated soil removed off-site is disposed of to an approved facility.

Proposed Remedial Actions:

The contaminated soils will be excavated and disposed of at an approved facility. A portable XRF may be used during the remediation of the homestead areas to delineate the contamination and to minimise the volume of material requiring excavation while ensuring the remediation goals are met. Following remediation of the contaminated areas, site validation by XRF will be conducted as well as soil sampling for laboratory testing. Validation samples will be analysed for heavy metals.

The majority of the contaminated soils meet the acceptance criteria for Burwood Landfill. The more highly contaminated soils should meet Burwood Landfill acceptance criteria after mixing, this should be confirmed by XRF testing prior to disposal.

10 Remediation Actions and Validation Sampling

The remediation of the homestead areas progressed in stages between the 26th February and the 28th May 2021. The majority of the buildings within the homestead areas of 2 and 4 Glovers Road were demolished prior to remediation. The house on 4 Glovers Road was relocated off site during remediation works on 30th March 2021. A sleepout on 4 Glovers Road remains in place.

On completion of the demolition works, Malloch Environmental Ltd (MEL) attended the subject site on the 26th of February to mark out the areas requiring remediation. Two rectangular areas were defined to cover all the locations identified during the DSI as having heavy metal contamination above residential SGVs. A walkover of the demolition areas identified suspected asbestos cement board (ACM) across two parts of the homestead areas. A bulk sample of suspected ACM from each area was submitted to Analytica Laboratories for asbestos presence/absence analysis. Both samples were confirmed to contain asbestos. Remediation of the heavy metal contamination was postponed until the two areas of asbestos were delineated and remediated.

Asbestos Remediation

Isolated pieces of ACM were found on the 2 Glovers Road homestead area. These were handpicked and removed from the site on the 26th of February. A second inspection of the area was undertaken on the 1st of March and no more pieces of ACM were found. Six asbestos in soil samples were taken and submitted to Analytica Laboratories for semi-quantitative asbestos analysis. All six sample results were 'no asbestos detected'. Therefore, the ACM contamination on 2 Glovers Road was considered remediated and remediation of the western area of heavy metal contamination could commence.

More widespread ACM was found on 4 Glovers Road around a recently demolished farm shed. Fourteen 'asbestos in soil' samples were taken to delineate the affected area and to determine the class of asbestos works to assist in complying with the Health and Safety at Work (Asbestos) Regulations 2016. The sample results showed some free fibres were present at either end of the visibly contaminated area, but no free fibres were found in the less contaminated middle section. The highest asbestos result of 0.037 %w/w fibrous asbestos/asbestos fines (FA/AF) meant the remediation work would be classed as 'Class B Asbestos Works'. An updated site management plan for Class B work was provided to the client and contractors. It was proposed to remediate the less contaminated middle section by raking and handpicking. The areas affected by free fibres were to be remediated by excavation and disposal to Kate Valley. The areas of ACM affected soils and the locations of the delineation samples are shown on the Asbestos Delineation Sampling Plan in **Appendix B**.

Environmental Services NZ Ltd (ESNZ) raked and handpicked the middle section on the 22nd of March. MEL then undertook an inspection of the area and identified significant quantities of ACM still present on the surface and up to 100mm depth. It was decided that the ACM was too widespread and deep for raking and handpicking to successfully remediate the area. This area was added to the extent requiring remediation by excavation and disposal to Kate Valley.

Excavation of the ACM impacted soils started on 29th March and took three days. ESNZ supervised the works and engaged Reasoned Analysis Ltd to undertake air monitoring. The air monitoring detected <0.01 f/ml at all four sample locations on each of the three days of excavation works. A copy of the air monitoring reports is included in **Appendix G**. During excavation, several pits of broken asbestos cement board were uncovered. The highest concentration of ACM was under the recently demolished farm shed. There were also several pits with general waste including glass, metal, burnt wood, and ceramics. The pits were excavated, and the contents sent to Kate Valley Landfill for disposal.

MEL undertook validation sampling on the 1st of April. 16 of the 18 validation results were 'no asbestos detected'. However, two samples did have asbestos present, one with a cement board fragment and one with free fibres. The quantities in both samples were below the NZ GAMAS guideline values for residential use. It was agreed with the client that the goal for the remediation was no asbestos remaining on site so further remediation by excavation and disposal was arranged. Given the low levels of asbestos in the results the additional remediation was classed as 'unlicensed asbestos work'.

The low levels of remaining asbestos meant that Hororata Managed Fill Site could be a viable disposal option for the additional soils requiring disposal. XRF testing of the areas on April 13th showed that heavy metal concentrations in the soils exceeded the 'residential 10% produce' SGVs used as acceptance criteria by Hororata. However, the landfill operator confirmed they had sufficient additional material to successfully dilute the contaminants and that they would accept the soils. Excavation of the remaining two areas of ACM impacted soils with disposal at Hororata Landfill was undertaken on 14th of April. MEL inspected the area and took five validation samples on the 15th of April. Two of the sample locations were placed outside the excavation to confirm that no asbestos contamination affected the area still requiring excavation for heavy metal remediation. No asbestos was detected in any of the samples. The asbestos affected area was considered successfully remediated and excavation of the eastern area of heavy metal contamination could commence.

Heavy Metal Remediation

Excavation of the western area of heavy metal contamination within the homestead areas commenced on 23rd of March. This area is herein referred to as the 'western homestead area'. The marked area was excavated to a depth of 300mm. XRF testing indicated the northern wall and the base of the excavation were successfully remediated to below residential SGVs. However, further excavation was required along sections of the western, southern and eastern walls of the excavation. The necessary additional excavation was completed in conjunction with XRF testing over several days until XRF testing on the 15th of April indicated that remediation of the 'western homestead area' excluding the eastern wall was complete. Further excavation along the eastern wall was not undertaken at this time due to the close proximity to the remaining ACM contaminated soils. Thirteen validation samples, VS_Y1 to VS_Y13, were submitted to the laboratory for heavy metal analysis to confirm this area was successfully remediated.

Excavation of the eastern area of heavy metal contamination within the homestead areas was undertaken following successful remediation of the overlapping ACM impacted soils. This area is herein referred to as the 'eastern homestead area'. Any parts of the marked area not already sufficiently excavated during the ACM remediation were excavated to a depth of 300mm. Additional rubbish pits with general waste including glass, metal, burnt wood, and ceramics were identified, excavated and the waste items sent to Kate Valley Landfill for disposal. The excavated soils were mixed and stockpiled within the excavated area for XRF testing prior to disposal. XRF testing of the stockpiles on the 4th of May showed no contamination exceeding Burwood Landfill acceptance criteria and the soils were cleared for disposal at Burwood Landfill.

Additional excavation of the 'eastern homestead area' was undertaken in conjunction with XRF testing from the 4th to the 14th of May. The excavated area extends up to the southern end of the eastern wall of the 'western homestead area' so validation of that wall was undertaken as part of the 'eastern homestead area' validation. On May 14th, XRF testing indicated all but a section of the eastern wall of the excavation was successfully remediated. Ten validation samples were submitted to the laboratory for heavy metal analysis. One result, VS_Y16, exceeded the residential SGV for lead.

The final excavation of the 'eastern homestead area' was undertaken on the 28th of May. Once XRF testing indicated the eastern wall and the area around VS_Y16 were successfully remediated, six validation samples were taken and submitted for heavy metal analysis. None of the results exceeded residential SGVs and the remediation was considered successful.

A total of 108.82 tonnes of soil were disposed of at Kate Valley Landfill and 32.92 tonnes of soil were disposed of at Hororata Managed Fill Site from the remediation of the homestead area of the site. The attempted remediation of the arsenic affected soils within the paddocks of the site by excavation and disposal to Burwood Landfill was undertaken at the same time as the homestead areas and under the same waste manifest. Therefore, it is not possible to isolate the soils sent to Burwood from the homestead area. A total of 5,548.06 tonnes of soil was disposed of at Burwood Landfill from the subject site as a whole during the period of remediation activities. Disposal documentation is attached in **Appendix H**.

The validation sample plans, included in **Appendix C**, show the extent of the remediated areas and the validation sample locations. A table of XRF results is included in **Appendix D**. A table of laboratory results is included in **Appendix E**, with the full laboratory reports are in **Appendix F**. Photographs of the excavations are included in **Appendix I**.

11 Field Quality Assurance and Quality Control

The Contaminated Land Management Guidelines No 5, Ministry for the Environment was followed for all aspects of the investigation. Field quality control procedures included ensuring decontamination procedures were followed. Samples were taken using a stainless steel trowel or fresh disposable nitrile gloves. All equipment was decontaminated between samples using Decon 90 and rinsed with tap water.

Samples were collected in laboratory supplied containers and immediately placed in chilled bins. Following sampling, the samples were delivered to Analytica Laboratories under chain-of-custody documentation.

12 Laboratory Quality Assurance and Quality Control

All samples were submitted to Analytica Laboratories in Hamilton or Christchurch for analysis. Analytica Laboratories hold IANZ accreditation. As part of holding accreditation the laboratory follows appropriate testing and quality control procedures. No quality control issues were identified.

13 Results Summary

ACM Remediation:

A few isolated pieces of ACM were removed from around demolished sheds and a garage on 2 Glovers Road. No asbestos was detected in any of the six 'asbestos in soils' samples taken from across the area. No further ACM debris was identified during a second walkover.

The ACM impacted soils identified around the demolished shed on 4 Glovers Road were excavated until no visible pieces of ACM remained on the base or walls of the excavation. Validation sampling was used to confirm no asbestos contamination remained. As agreed with the client, where a validation result was positive for asbestos further excavation was undertaken until only results of 'no asbestos detected' remained.

To delineate and validate the asbestos contamination, a total of 47 'asbestos in soil' samples were submitted to the laboratory for asbestos presence/absence analysis with semi-quantitative analysis to follow any positive results.

Heavy Metal Remediation:

The regression analysis completed during the DSI did not generate reliable equivalent SGVs for the XRF for lead on 2 Glovers Road or for arsenic on either 2 or 4 Glovers Road. It did indicate that any soils with XRF readings under 126.9mg/kg for lead could reliably be expected to be below the 'residential 10% produce' SGV on 4 Glovers Road. Therefore, given this regression analysis information and previous experience with similar sites, XRF readings below 126mg/kg for lead and 15mg/kg for arsenic were taken to indicate successful remediation, and then followed up with lab sampling.

XRF tests were performed approximately 2-3m apart over the walls and bases of the excavated areas in a rough grid. In total 793 XRF readings were taken across the two remediation areas to delineate the contamination, determine appropriate disposal locations and to indicate successful remediation.

Validation samples were submitted to the lab for heavy metal analysis to confirm the XRF results. One result, VS_Y16, exceeded the 'residential 10% produce' SGV for lead. Additional excavation was undertaken and the area was re-validated. None of the subsequent samples exceeded 'residential 10% produce' SGVs. In total, twenty-nine validation samples were submitted to the lab for seven heavy metal analysis. Excluding the results from VS_Y16 where soils have now been removed from the subject site, the laboratory validation results show zinc above ecological guideline values in 1 location. As the sample location is not near any ecological features this is not considered to pose a risk. Lead and zinc are above expected background levels in 11 locations. Arsenic, cadmium, chromium, and copper are also above expected background levels in some locations. However, the concentrations are well below the 'residential 10% produce' SGVs.

A table of XRF results is included in **Appendix D**. A table of laboratory results is included in **Appendix E**, with the full laboratory reports are in **Appendix F**.

14 Site Characterisation and Conclusion

Remediation of the homestead areas of the subject site took place in multiple stages from the 26th of February until the 28th of May 2021. Prior to remediation most of the buildings within the homestead area were demolished. A site walkover by MEL on the 26th of February identified two areas contaminated with broken asbestos cement board (ACM). Remediation of the heavy metal contamination was postponed until remediation of the ACM was completed.

A few isolated pieces of ACM were removed from around demolished sheds and a garage on 2 Glovers Road. No asbestos was detected in any of the six 'asbestos in soils' samples taken from across the area. No further ACM debris was identified during a second walkover. The ACM in this area was considered successfully remediated. The ACM impacted soils identified around the demolished shed on 4 Glovers Road were excavated until no visible pieces of ACM remained on the base or walls of the excavation. Validation sampling was used to confirm no asbestos contamination remained. As agreed with the client, where a validation result was positive for asbestos further excavation was undertaken until only results of 'no asbestos detected' remained. Most of the ACM impacted soils were sent to Kate Valley Landfill for disposal. Once sampling showed only minor amounts of asbestos remaining the final excavated soils were sent to Hororata Managed Fill Site. To delineate and validate the asbestos contamination, a total of 47 'asbestos in soil' samples were submitted to the laboratory for asbestos presence/absence analysis with semi-quantitative analysis to follow any positive results. No asbestos was detected in any sample locations remaining in-situ.

Remediation of the heavy metal contaminated areas was undertaken by excavation with disposal to Burwood Landfill. Two areas, to cover all the locations from the DSI with results exceeding 'residential 10% produce' SGVs, were excavated to 300mm. Parts of the eastern area had already been excavated to remediate the ACM impacted soils. XRF testing was used to identify any remaining soils with heavy metals above residential SGVs which were then excavated. Validation samples were submitted to the lab for heavy metal analysis to confirm the XRF results. One result exceeded the 'residential 10% produce' SGV for lead. Additional excavation was undertaken and the area was re-validated. None of the subsequent samples exceeded 'residential 10% produce' SGVs. In total, twenty-nine validation samples were submitted to the lab for seven heavy metal analysis. The laboratory results show one location exceeds the ecological guideline value for zinc. As the sample location is not near any ecological features this is not considered to pose a risk. Lead and zinc are above expected background levels in 11 locations. Arsenic, cadmium, chromium, and copper are also above expected background levels in some locations.

A total of 108.82 tonnes of soil were disposed of at Kate Valley Landfill and 32.92 tonnes of soil were disposed of at Hororata Managed Fill Site from the remediation of the homestead areas. The attempted remediation of the arsenic affected soils within the paddocks of the site by excavation and disposal to Burwood Landfill was undertaken at the same time as the homestead areas and under the same waste manifest. Therefore, it is not possible to isolate the soils sent to Burwood from the homestead area. A total of 5,548.06 tonnes of soil was disposed of at Burwood Landfill from the subject site as a whole during the period of remediation activities.

The remediation actions have successfully remediated the ACM and heavy metal contamination within the homestead areas. This northern part of the subject site is considered to be suitable for its proposed residential use with no further actions required.

15 Limitations

Malloch Environmental Limited has performed services for this project in accordance with current professional standards for environmental site assessments, and in terms of the client's financial and technical brief for the work. Any reliance on this report by other parties shall be at such party's own risk. It does not purport to completely describe all the site characteristics and properties. Where data is supplied by the client or any third party, it has been assumed that the information is correct, unless otherwise stated. Malloch Environmental Limited accepts no responsibility for errors or omissions in the information provided. Should further information become available regarding the conditions at the site, Malloch Environmental Limited reserves the right to review the report in the context of the additional information.

Opinions and judgments expressed in this report are based on an understanding and interpretation of regulatory standards at the time of writing and should not be construed as legal opinions. As regulatory standards are constantly changing, conclusions and recommendations considered to be acceptable at the time of writing, may in the future become subject to different regulatory standards which cause them to become unacceptable. This may require further assessment and/or remediation of the site to be suitable for the existing or proposed land use activities. There is no investigation that is thorough enough to preclude the presence of materials at the site that presently or in the future may be considered hazardous.

No part of this report may be reproduced, distributed, publicly displayed, or made into a derivative work without the permission of Malloch Environmental Ltd, other than the distribution in its entirety for the purposes it is intended.

Appendix A – DSI Sample Location Plan



Plan must be printed
in colour

LEGEND

- **SS1** Soil sample location XRF tested
- **SS1** Soil sample location XRF and laboratory tested
- **SS1** Soil sample location laboratory tested
- **SS1** Soil sample location that exceeds the residential SGV for lead
- **SS1** Soil sample location that exceeds the residential SGV for lead and arsenic
- **Y11** Planned sample location not used, dog prevented access

Notes:

1. This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
2. Any measurements taken from this plan which are not dimensioned on the



Malloch Environmental Ltd
19 Robertsons Road, Kirwee
RD1, Christchurch 7671
021 132 0321
www.mallochenviro.co.nz

Sampling Location Plan - Homestead Areas 2 & 4 Glovers Road, Christchurch

Scale: NTS

Date: 06 October 2020

Drawing No: 01475/2

Appendix B – Asbestos Delineation Sampling Plan



Plan must be printed
in colour

LEGEND

- **A_D1** Asbestos soil sample location
- **A_D1** Asbestos soil sample location - sample held cold
- A_D1** Soil sample location with result above NZ GAMAS guidelines
- A_D1** Soil sample location with result below NZ GAMAA guidelines
- Approx. extent of ACM affected areas
- Area with free asbestos fibres requiring disposal at Kate Valley
- Area to be raked and handpicked by ESNZ. MEL to validate afterwards.
- Approx. area requiring remediation for lead

Notes:

1. This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
2. Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
3. Soil sample locations are approximate only.



Malloch Environmental Ltd
19 Robertsons Road, Kirwee
RD1, Christchurch 7671
021 132 0321
www.mallochenviro.co.nz

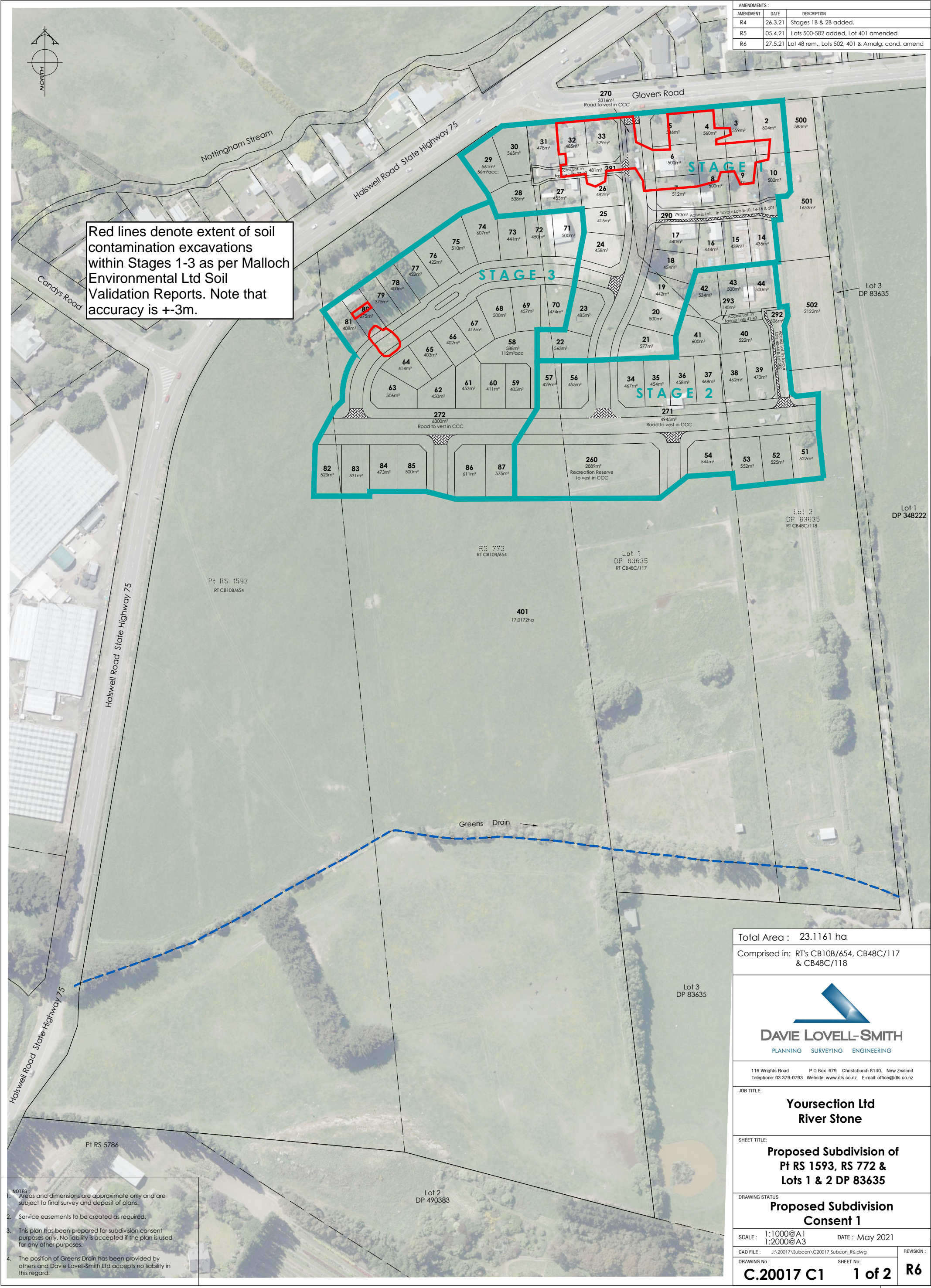
Asbestos Delineation Sampling Location Plan 2 & 4 Glovers Road, Christchurch

Scale: NTS

Date: 17 March 2021

Drawing No: 01475/5

Appendix C – Validation Sample Location Plans




Red lines denote extent of soil contamination excavations within Stages 1-3 as per Malloch Environmental Ltd Soil Validation Reports. Note that accuracy is +/-3m.

AMENDMENTS:		
AMENDMENT	DATE	DESCRIPTION
R4	26.3.21	Stages 1B & 2B added.
R5	05.4.21	Lots 500-502 added, Lot 401 amended
R6	27.5.21	Lot 48 rem., Lots 502, 401 & Amalg. cond. amend

- NOTES:
- Areas and dimensions are approximate only and are subject to final survey and deposit of plans.
 - Service easements to be created as required.
 - This plan has been prepared for subdivision consent purposes only. No liability is accepted if the plan is used for any other purposes.
 - The position of Greens Drain has been provided by others and Davie Lovell-Smith Ltd accepts no liability in this regard.

Total Area : 23.1161 ha

Comprised in: RT's CB10B/654, CB48C/117 & CB48C/118


DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140. New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:
**Yoursection Ltd
River Stone**

SHEET TITLE:
**Proposed Subdivision of
Pt RS 1593, RS 772 &
Lots 1 & 2 DP 83635**

DRAWING STATUS
**Proposed Subdivision
Consent 1**

SCALE: 1:1000@A1 DATE: May 2021
1:2000@A3

CAD FILE: J:\20017\Subcon\C20017 Subcon_R6.dwg

DRAWING No.: C.20017 C1 SHEET No: 1 of 2

REVISION: R6



Plan must be printed
in colour



LEGEND

• VS_A1 Asbestos soil sample location

• VS_A1 Soil sample location with
result below NZ GAMAS
guidelines

Approx. extent of excavated
affected area

Approx. area still requiring
remediation for lead

Approx. extent of
subject site shown
on this plan

Notes:

1. This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
2. Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
3. Soil sample locations are approximate only.



Malloch Environmental Ltd
19 Robertsons Road, Kirwee
RD1, Christchurch 7671
021 132 0321
www.mallochenviro.co.nz

Asbestos Validation Sampling Plan - 01 April 2021
2 & 4 Glovers Road, Christchurch

Scale: NTS

Date: 09 April 2021

Drawing No: 01475/6



Plan must be printed
in colour



LEGEND

• VS_A1 Asbestos soil sample location

Approx. extent of additional excavated area

Approx. extent of excavation to date

Approx. area still requiring remediation for lead

Notes:

1. This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
2. Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
3. Soil sample locations are approximate only.



Malloch Environmental Ltd
19 Robertsons Road, Kirwee
RD1, Christchurch 7671
021 132 0321
www.mallochenviron.co.nz

Asbestos Validation Sampling Plan - 15 April 2021
2 & 4 Glovers Road, Christchurch

Scale: NTS

Date: 22 April 2021

Drawing No: 01475/7



Plan must be printed
in colour



LEGEND

• VS_Y1 Validation soil sample location

⊙ VS_Y16 Soil sample location exceeding
residential SGV for lead

Area with lead XRF readings
above residential SGV

Approx. extent of excavated
areas

Approx. extent of
subject site shown
on this plan

Notes:

1. This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
2. Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
3. Soil sample locations are approximate only.



Malloch Environmental Ltd

19 Robertsons Road, Kirwee
RD1, Christchurch 7671
021 132 0321
www.mallochenviro.co.nz

Heavy Metal Validation Sampling Plan

26 March to 14 May 2021

Homestead Area - 2 & 4 Glovers Road, Christchurch

Scale: NTS

Date: 19 May 2021

Drawing No: 01475/8





Plan must be printed
in colour



LEGEND

• **VS1** Validation soil sample location

 Approx. extent of latest excavated area

 Approx. extent of previously excavated areas

Approx. extent of
subject site shown
on this plan

Notes:

1. This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
2. Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
3. Soil sample locations are approximate only.



Malloch Environmental Ltd

19 Robertsons Road, Kirwee
RD1, Christchurch 7671
021 132 0321
www.mallochenviro.co.nz

Heavy Metal Validation Sampling Plan - 28 May 2021
Homestead Area - 2 & 4 Glovers Road, Christchurch

Scale: NTS

Date: 04 June 2021

Drawing No: 01475/9

Appendix D – Table of Validation XRF Results

XRF Validation Results - 2 & 4 Glovers Road

Dates of testing: Various from 23rd March to 28th May 2021

Units: ppm

Reading No	Time	Area Tested	Type	Duration	Pb	Pb Error	As	As Error
1274	23/03/2021 12:12	Western homestead area (pit)	Removed to Burwood	30.06	941.61	26.82	209.98	21.49
1275	23/03/2021 12:13	Western homestead area	Remains in-situ	30.08	65.2	8.48	<LOD	9.32
1276	23/03/2021 12:14	Western homestead area	Remains in-situ	18.51	62.18	12.42	<LOD	14.14
1277	23/03/2021 13:02	Western homestead area	Remains in-situ	30.08	17.3	7.09	<LOD	7.65
1278	23/03/2021 13:03	Western homestead area	Remains in-situ	30.08	<LOD	10.06	<LOD	7.32
1279	23/03/2021 13:04	Western homestead area	Removed to Burwood	28.79	110.04	12.08	20	9.22
1280	23/03/2021 13:04	Western homestead area	Remains in-situ	30.08	110.05	12.95	<LOD	13.82
1281	23/03/2021 13:05	Western homestead area	Remains in-situ	30.07	52.91	9.83	<LOD	10.7
1282	23/03/2021 13:06	Western homestead area	Remains in-situ	30.55	23.64	8.57	<LOD	9.48
1283	23/03/2021 13:07	Western homestead area	Remains in-situ	30.08	11.3	7.53	<LOD	7.93
1284	23/03/2021 13:08	Western homestead area	Remains in-situ	27.28	<LOD	10.75	<LOD	8.1
1285	23/03/2021 13:08	Western homestead area	Remains in-situ	26.48	<LOD	11.27	<LOD	7.9
1286	23/03/2021 13:10	Western homestead area	Remains in-situ	30.07	<LOD	10.04	<LOD	7.47
1287	23/03/2021 13:11	Western homestead area	Remains in-situ	28.88	<LOD	10.1	8.38	5.15
1288	23/03/2021 13:11	Western homestead area	Remains in-situ	30.07	25.3	7.92	<LOD	8.83
1289	23/03/2021 13:12	Western homestead area	Removed to Burwood	30.08	184.65	14.71	<LOD	16.19
1290	23/03/2021 13:13	Western homestead area	Remains in-situ	30.07	38.22	8.34	<LOD	9.3
1291	23/03/2021 13:14	Western homestead area	Remains in-situ	30.07	49.65	10.39	<LOD	11.5
1292	23/03/2021 13:15	Western homestead area	Remains in-situ	30.08	32.22	8.15	<LOD	9
1293	23/03/2021 13:15	Western homestead area	Remains in-situ	30.08	12.57	6.68	<LOD	7.24
1294	23/03/2021 13:16	Western homestead area	Remains in-situ	30.07	86.83	10.27	<LOD	11.21
1295	23/03/2021 13:17	Western homestead area	Remains in-situ	30.08	15.64	6.89	<LOD	7.67
1296	23/03/2021 13:18	Western homestead area	Remains in-situ	30.08	<LOD	9.46	<LOD	6.98
1297	23/03/2021 13:19	Western homestead area	Remains in-situ	30.07	28.57	7.28	9.82	5.53
1298	23/03/2021 13:20	Western homestead area	Remains in-situ	30.08	55.34	10.06	<LOD	10.84
1299	23/03/2021 13:21	Western homestead area	Remains in-situ	32.15	58.37	10.07	<LOD	11.19
1300	23/03/2021 13:22	Western homestead area	Remains in-situ	31.36	25.83	8.3	<LOD	9.25
1301	23/03/2021 13:22	Western homestead area	Removed to Burwood	26.41	42.81	9.54	29.83	7.96
1302	23/03/2021 13:23	Western homestead area	Remains in-situ	30.95	21.04	8.16	<LOD	9.13
1303	23/03/2021 13:24	Western homestead area	Remains in-situ	24.89	22.14	9.17	<LOD	9.58
1304	23/03/2021 13:25	Western homestead area	Remains in-situ	30.08	<LOD	10.69	<LOD	7.93
1305	23/03/2021 13:26	Western homestead area	Remains in-situ	30.08	<LOD	10.67	8.16	5.4
1306	23/03/2021 13:26	Western homestead area	Remains in-situ	30.08	106.61	11.91	<LOD	12.63
1307	23/03/2021 13:27	Western homestead area	Remains in-situ	30.07	73.09	10.49	<LOD	11.45
1308	23/03/2021 13:28	Western homestead area	Remains in-situ	30.07	32.72	8.49	<LOD	8.99
1309	23/03/2021 13:29	Western homestead area	Remains in-situ	24.09	41.73	9.4	<LOD	10.15
1310	23/03/2021 13:29	Western homestead area	Remains in-situ	30.07	12.74	6.95	<LOD	7.58
1311	23/03/2021 13:30	Western homestead area	Remains in-situ	26.49	<LOD	9.94	<LOD	7.09
1312	23/03/2021 13:31	Western homestead area	Remains in-situ	30.08	59.51	8.79	<LOD	9.75
1313	23/03/2021 13:32	Western homestead area	Remains in-situ	30.08	14.36	7.3	<LOD	7.95
1314	23/03/2021 13:33	Western homestead area	Remains in-situ	30.08	37.28	8.43	<LOD	9.29
1316	23/03/2021 13:44	Western homestead area	Remains in-situ	30.17	<LOD	10.11	11.18	5.34
1317	23/03/2021 13:45	Western homestead area	Remains in-situ	30.07	<LOD	14.41	<LOD	10.77
35	25/03/2021 11:22	Western homestead area	Remains in-situ	30.08	63.74	11.87	<LOD	12.85
36	25/03/2021 11:22	Western homestead area	Removed to Burwood	30.08	117.22	11.43	18.9	8.68
37	25/03/2021 11:23	Western homestead area	Remains in-situ	30.28	38.29	8.6	14.29	6.65
38	25/03/2021 11:24	Western homestead area	Remains in-situ	30.07	88.48	11.02	<LOD	12.08
39	25/03/2021 11:25	Western homestead area	Remains in-situ	30.06	96.07	11.41	13.06	8.58
40	25/03/2021 11:28	Western homestead area	Remains in-situ	30.08	124.11	12.01	<LOD	12.96
41	25/03/2021 11:29	Western homestead area	Remains in-situ	30.07	80.5	10.23	11.74	7.66
42	25/03/2021 11:30	Western homestead area	Remains in-situ	30.07	47.6	8.31	<LOD	9.01
43	25/03/2021 11:30	Western homestead area	Removed to Burwood	30.17	101.51	11.6	16.56	8.82
44	25/03/2021 11:31	Western homestead area	Remains in-situ	30.07	31.58	8.36	<LOD	9.32
45	25/03/2021 11:32	Western homestead area	Remains in-situ	30.08	121.18	12.95	<LOD	13.96
46	25/03/2021 11:33	Western homestead area	Removed to Burwood	30.08	129.96	13.7	<LOD	15.05
47	25/03/2021 11:34	Western homestead area	Remains in-situ	30.07	36.16	8.63	<LOD	9.6
48	25/03/2021 11:34	Western homestead area	Remains in-situ	30.07	26.48	7.56	13.18	5.89
49	25/03/2021 11:35	Western homestead area	Remains in-situ	30.07	84.01	11.03	14.89	8.37
50	25/03/2021 11:36	Western homestead area	Removed to Burwood	23.69	199.98	17.26	<LOD	18.7
51	25/03/2021 11:37	Western homestead area	Removed to Burwood	30.08	126.76	12.91	<LOD	14.06
52	25/03/2021 11:37	Western homestead area	Removed to Burwood	25.29	196.85	16.29	<LOD	17.44
53	25/03/2021 11:38	Western homestead area	Removed to Burwood	26.08	185.78	16.28	<LOD	17.62
54	25/03/2021 11:45	Western homestead area	Removed to Burwood	30.07	180.77	14.54	<LOD	15.69
55	25/03/2021 11:46	Western homestead area	Remains in-situ	27.28	109.28	12.49	<LOD	13.96
56	25/03/2021 11:47	Western homestead area	Remains in-situ	30.08	114.37	12.05	<LOD	13.21
57	25/03/2021 11:47	Western homestead area	Remains in-situ	30.07	87.87	11.61	<LOD	13.04
58	25/03/2021 11:48	Western homestead area	Remains in-situ	30.07	84.57	10.9	<LOD	12.03
59	25/03/2021 11:49	Western homestead area	Remains in-situ	30.08	94.93	10.49	<LOD	11.35
60	25/03/2021 11:50	Western homestead area	Remains in-situ	30.02	77.93	9.85	12.69	7.42
61	25/03/2021 11:51	Western homestead area	Remains in-situ	30.08	124.61	13.17	<LOD	14.21
62	25/03/2021 11:52	Western homestead area	Remains in-situ	30.08	124.33	11.85	<LOD	13.1
63	25/03/2021 11:53	Western homestead area	Removed to Burwood	8.13	140.54	27.08	<LOD	28.81
64	25/03/2021 11:53	Western homestead area	Removed to Burwood	20.1	97.29	14.38	17	10.94
65	25/03/2021 11:54	Western homestead area	Removed to Burwood	30.37	117.72	12.17	25.56	9.44
66	25/03/2021 11:54	Western homestead area	Removed to Burwood	12.52	242.99	25.8	30.31	19.59
67	25/03/2021 11:56	Western homestead area	Remains in-situ	31.76	99.74	11.98	<LOD	13.08

68	25/03/2021 11:57	Western homestead area	Remains in-situ	30.07	111.14	11.68	<LOD	13.08
69	25/03/2021 11:58	Western homestead area	Removed to Burwood	30.28	151.28	13.24	18.18	9.98
70	25/03/2021 11:58	Western homestead area	Remains in-situ	30.07	62.83	10.27	<LOD	11.47
71	25/03/2021 11:59	Western homestead area	Removed to Burwood	30.08	164.99	13.87	<LOD	15.22
72	25/03/2021 12:00	Western homestead area	Removed to Burwood	30.08	128.28	12.65	<LOD	13.74
73	25/03/2021 12:01	Western homestead area	Removed to Burwood	30.08	130.82	13.87	<LOD	15.15
74	25/03/2021 12:02	Western homestead area	Removed to Burwood	4.94	284.54	46.5	<LOD	47.21
75	25/03/2021 12:02	Western homestead area	Removed to Burwood	5.74	228.77	39.6	<LOD	43.17
76	25/03/2021 12:03	Western homestead area	Remains in-situ	26.88	40.41	10.16	<LOD	11.48
77	25/03/2021 12:05	Western homestead area	Remains in-situ	21.29	118.13	15.72	<LOD	16.93
78	25/03/2021 12:11	Western homestead area	Removed to Burwood	30.13	134	12.67	28.38	9.84
79	25/03/2021 12:12	Western homestead area	Removed to Burwood	30.06	113.9	12.35	17.61	9.35
80	25/03/2021 12:14	Western homestead area	Remains in-situ	30.03	64.32	10.64	13.64	8.11
81	25/03/2021 12:15	Western homestead area	Remains in-situ	30.08	74.3	10.76	<LOD	12.13
82	25/03/2021 12:16	Western homestead area	Remains in-situ	30.07	96.9	11.64	<LOD	12.7
83	25/03/2021 12:17	Western homestead area	Remains in-situ	30.06	47.07	8.03	9.93	6.04
84	25/03/2021 12:18	Western homestead area	Remains in-situ	33.76	105.02	10.87	<LOD	11.97
85	25/03/2021 12:20	Western homestead area	Remains in-situ	30.38	56.26	9.02	11.97	6.83
86	25/03/2021 12:24	Western homestead area	Remains in-situ	30.04	125.26	11.37	13.04	8.47
87	25/03/2021 12:25	Western homestead area	Remains in-situ	33.73	82.74	10.53	13.53	7.93
88	25/03/2021 12:25	Western homestead area	Removed to Burwood	6.94	29.01	18.98	34.04	16.5
89	25/03/2021 12:26	Western homestead area	Removed to Burwood	30.08	235.98	15.95	<LOD	17.35
90	25/03/2021 12:27	Western homestead area	Remains in-situ	30.07	52.75	10.49	<LOD	11.83
91	25/03/2021 12:28	Western homestead area	Remains in-situ	30.05	86.86	11.24	<LOD	12.63
92	25/03/2021 12:31	Western homestead area	Removed to Burwood	29.68	477.04	23.31	<LOD	24.93
93	25/03/2021 12:31	Western homestead area	Removed to Burwood	13.65	62.35	14.92	44.13	12.84
94	25/03/2021 12:31	Western homestead area	Removed to Burwood	12.51	57.82	16.07	39.99	13.69
95	25/03/2021 12:32	Western homestead area	Removed to Burwood	22.57	54.56	11.66	24.45	9.35
96	25/03/2021 12:33	Western homestead area	Removed to Burwood	20.47	100.41	14.42	28.57	11.41
97	25/03/2021 12:34	Western homestead area	Removed to Burwood	30.11	49.29	9.43	17.98	7.39
98	25/03/2021 12:36	Western homestead area	Remains in-situ	30.07	38.56	9.27	<LOD	10.36
99	25/03/2021 12:38	Western homestead area	Removed to Burwood	60.09	50.76	7.29	20.77	5.79
100	25/03/2021 12:39	Western homestead area	Removed to Burwood	30.31	55.19	10.52	20.88	8.3
101	25/03/2021 12:41	Western homestead area	Removed to Burwood	26.73	60.19	10.82	21.23	8.55
102	25/03/2021 12:42	Western homestead area	Remains in-situ	54.9	105.27	8.49	10.99	6.3
103	25/03/2021 12:43	Western homestead area	Remains in-situ	30.07	48.87	13.29	<LOD	14.62
104	25/03/2021 12:44	Western homestead area	Remains in-situ	30.57	69.78	11.85	<LOD	13.37
105	25/03/2021 12:46	Western homestead area	Removed to Burwood	60.02	50.4	7.26	15.14	5.62
106	25/03/2021 12:47	Western homestead area	Removed to Burwood	30.37	50.85	10.01	17.61	7.82
107	25/03/2021 12:49	Western homestead area	Remains in-situ	32.56	35.69	8.25	11.48	6.3
108	25/03/2021 12:51	Western homestead area	Removed to Burwood	60.22	38.43	6.22	16.35	4.86
109	25/03/2021 13:00	Western homestead area	Removed to Burwood	30.08	39.89	8.53	17.96	6.73
110	25/03/2021 13:02	Western homestead area	Remains in-situ	30.07	35.22	8.12	<LOD	9.06
111	25/03/2021 13:06	Western homestead area	Remains in-situ	46.91	70.4	8.37	10.77	6.27
112	25/03/2021 13:08	Western homestead area	Remains in-situ	30.97	21.37	8.12	<LOD	8.85
113	25/03/2021 13:09	Western homestead area	Removed to Burwood	30.36	15.33	9.06	48.61	8.79
114	25/03/2021 13:12	Western homestead area	Remains in-situ	30.06	44.75	9.24	13.03	7.07
115	25/03/2021 13:13	Western homestead area	Remains in-situ	52.09	84.09	8.36	<LOD	9.3
116	25/03/2021 13:14	Western homestead area	Remains in-situ	47.71	88.96	8.24	<LOD	9.09
117	25/03/2021 13:15	Western homestead area	Remains in-situ	26.09	<LOD	10.81	<LOD	7.95
118	25/03/2021 13:17	Western homestead area	Removed to Burwood	56.9	87.18	8.63	17.3	6.6
119	25/03/2021 13:17	Western homestead area	Removed to Burwood	30.08	174.51	15.21	<LOD	16.54
120	25/03/2021 13:19	Western homestead area	Remains in-situ	60.09	61.36	8.22	11.41	6.2
121	25/03/2021 13:21	Western homestead area	Remains in-situ	60.1	106.32	8.64	<LOD	9.56
122	25/03/2021 13:22	Western homestead area	Remains in-situ	30.07	28.48	8.63	<LOD	9.64
123	25/03/2021 13:23	Western homestead area	Removed to Burwood	12.9	71.57	17.15	57.04	15.12
124	25/03/2021 13:23	Western homestead area	Remains in-situ	35.76	53.56	9.72	<LOD	10.82
125	25/03/2021 13:25	Western homestead area	Removed to Burwood	55.25	150.91	10.09	17.52	7.58
126	25/03/2021 13:25	Western homestead area	Removed to Burwood	30.08	182.92	16.23	31.04	12.49
127	25/03/2021 13:26	Western homestead area	Removed to Burwood	36.54	157.24	12.48	<LOD	13.33
128	25/03/2021 13:29	Western homestead area	Remains in-situ	60.09	98.6	9	<LOD	9.88
129	25/03/2021 13:30	Western homestead area	Remains in-situ	32.56	51.02	9.73	<LOD	10.89
130	25/03/2021 13:31	Western homestead area	Remains in-situ	52.51	93.61	8.64	<LOD	9.53
131	25/03/2021 13:32	Western homestead area	Removed to Burwood	10.12	385.39	33.35	<LOD	35.66
132	25/03/2021 13:33	Western homestead area	Remains in-situ	30.03	60	8.7	11.25	6.54
133	25/03/2021 13:34	Western homestead area	Remains in-situ	30.16	45.58	9.5	<LOD	10.71
134	25/03/2021 13:36	Western homestead area	Remains in-situ	30.08	61.21	10.52	<LOD	11.85
135	25/03/2021 13:37	Western homestead area	Removed to Burwood	20.5	158.69	16.57	<LOD	18.42
136	25/03/2021 13:38	Western homestead area	Remains in-situ	30.08	108.09	11.75	<LOD	12.62
137	25/03/2021 13:39	Western homestead area	Removed to Burwood	6.53	240.88	38.22	<LOD	42.41
138	25/03/2021 13:39	Western homestead area	Remains in-situ	10.13	106.63	20.38	<LOD	22.92
139	25/03/2021 13:40	Western homestead area	Remains in-situ	30.08	105.68	13.16	<LOD	14.31
140	25/03/2021 13:41	Western homestead area	Remains in-situ	30.07	60.86	10.08	<LOD	11.04
141	25/03/2021 13:41	Western homestead area	Remains in-situ	30.4	36.28	8.55	12.04	6.56
142	25/03/2021 13:42	Western homestead area	Remains in-situ	30.08	48.68	9.14	<LOD	10.19
143	25/03/2021 13:43	Western homestead area	Removed to Burwood	30.07	59.21	9.67	22.91	7.69
144	25/03/2021 13:44	Western homestead area	Remains in-situ	60.06	81.55	7.72	12.28	5.8
229	26/03/2021 11:18	Western homestead area	Remains in-situ	30.08	22.46	7.8	<LOD	8.51
230	26/03/2021 11:19	Western homestead area	Remains in-situ	30.07	40.21	8.81	<LOD	9.5
231	26/03/2021 11:20	Western homestead area	Remains in-situ	28.08	28.46	8.33	<LOD	9.12
232	26/03/2021 11:20	Western homestead area	Remains in-situ	30.08	80.68	10.7	<LOD	11.79

233	26/03/2021 11:21	Western homestead area	Removed to Burwood	7.32	249.08	33.4	<LOD	38.11
234	26/03/2021 11:21	Western homestead area	Removed to Burwood	30.08	150.93	13.69	<LOD	15.23
235	26/03/2021 11:22	Western homestead area	Remains in-situ	30.08	22.14	7.6	<LOD	8.22
236	26/03/2021 11:23	Western homestead area	Remains in-situ	30.07	14.99	7.76	<LOD	8.62
237	26/03/2021 11:24	Western homestead area	Remains in-situ	30.08	<LOD	9.99	<LOD	7.42
238	26/03/2021 11:24	Western homestead area	Remains in-situ	26.09	18.91	8.02	<LOD	8.77
239	26/03/2021 11:25	Western homestead area	Remains in-situ	30.07	16.58	7.38	<LOD	7.96
240	26/03/2021 11:26	Western homestead area	Remains in-situ	30.07	10.39	6.91	<LOD	7.69
241	26/03/2021 11:27	Western homestead area	Remains in-situ	30.08	74.91	10.87	<LOD	11.97
242	26/03/2021 11:27	Western homestead area	Removed to Burwood	32.16	95.44	10.72	15.5	8.11
243	26/03/2021 11:28	Western homestead area	Remains in-situ	30.06	46.34	10.2	<LOD	11.54
244	26/03/2021 11:29	Western homestead area	Remains in-situ	30.08	29.42	9.01	<LOD	9.87
245	26/03/2021 11:30	Western homestead area	Remains in-situ	30.07	46.44	8.8	<LOD	9.64
246	26/03/2021 11:31	Western homestead area	Remains in-situ	30.08	70.58	9.66	<LOD	10.55
247	26/03/2021 11:32	Western homestead area	Remains in-situ	30.08	17.36	7.16	<LOD	7.93
248	26/03/2021 11:35	Western homestead area	Remains in-situ	30.08	54.2	10.36	<LOD	11.49
249	26/03/2021 11:35	Western homestead area	Remains in-situ	30.08	43.74	8.67	<LOD	9.68
250	26/03/2021 11:36	Western homestead area	Remains in-situ	30.08	27.83	8.05	<LOD	8.66
251	26/03/2021 11:37	Western homestead area	Remains in-situ	30.07	16.52	7.61	<LOD	8.49
252	26/03/2021 11:38	Western homestead area	Remains in-situ	30.08	42.87	9.21	<LOD	9.63
253	26/03/2021 11:38	Western homestead area	Remains in-situ	30.07	56.41	9.99	<LOD	10.75
254	26/03/2021 11:39	Western homestead area	Remains in-situ	22.89	16.16	8.39	<LOD	9.14
255	26/03/2021 11:40	Western homestead area	Remains in-situ	30.07	17.62	7.25	<LOD	8.12
256	26/03/2021 11:40	Western homestead area	Remains in-situ	30.08	54.59	9.51	<LOD	10.35
257	26/03/2021 11:41	Western homestead area	Remains in-situ	30.08	63.71	9.93	<LOD	11.05
258	26/03/2021 11:42	Western homestead area	Remains in-situ	30.07	51.14	10.39	<LOD	11.27
259	26/03/2021 11:43	Western homestead area	Remains in-situ	30.07	54.79	9.49	<LOD	10.3
260	26/03/2021 11:44	Western homestead area	Remains in-situ	60.39	47.07	6.63	14.28	5.11
261	26/03/2021 11:45	Western homestead area	Remains in-situ	30.08	32.62	10.04	<LOD	11.05
262	26/03/2021 11:47	Western homestead area	Remains in-situ	30.08	12.07	7.31	<LOD	8.01
263	26/03/2021 11:47	Western homestead area	Remains in-situ	30.07	12.22	7.37	<LOD	7.96
264	26/03/2021 11:48	Western homestead area	Remains in-situ	30.08	49.76	9.54	<LOD	10.24
265	26/03/2021 11:49	Western homestead area	Remains in-situ	30.08	36.55	8.54	<LOD	9.2
266	26/03/2021 11:50	Western homestead area	Remains in-situ	30.08	47.29	8.79	<LOD	9.62
267	26/03/2021 11:51	Western homestead area	Remains in-situ	30.07	34.54	8.35	<LOD	9.19
268	26/03/2021 11:51	Western homestead area	Remains in-situ	30.04	35.54	8.69	11.09	6.62
269	26/03/2021 11:52	Western homestead area	Remains in-situ	30.08	55.09	10.97	<LOD	12.36
270	26/03/2021 11:53	Western homestead area	Remains in-situ	30.07	76.51	10.04	<LOD	11.12
271	26/03/2021 11:54	Western homestead area	Remains in-situ	30.07	63.16	10.02	<LOD	10.87
272	26/03/2021 11:54	Western homestead area	Remains in-situ	30.08	56.45	9.16	<LOD	9.81
273	26/03/2021 11:55	Western homestead area	Remains in-situ	30.08	61.24	9.49	<LOD	10.52
274	26/03/2021 11:56	Western homestead area	Remains in-situ	30.16	80.99	11.23	<LOD	11.5
275	26/03/2021 11:57	Western homestead area	Remains in-situ	30.03	81.18	10.96	<LOD	12.14
276	26/03/2021 11:57	Western homestead area	Remains in-situ	29.28	15.6	7.75	<LOD	8.51
277	26/03/2021 11:58	Western homestead area	Remains in-situ	30.08	<LOD	10.71	<LOD	8.03
278	26/03/2021 11:59	Western homestead area	Remains in-situ	30.08	11.25	7.17	<LOD	7.89
279	26/03/2021 12:00	Western homestead area	Remains in-situ	30.08	30.78	8.36	<LOD	9.15
280	26/03/2021 12:00	Western homestead area	Remains in-situ	25.69	30.1	8.66	<LOD	9.23
281	26/03/2021 12:02	Western homestead area	Remains in-situ	30.07	36.75	8.85	<LOD	9.73
282	26/03/2021 12:03	Western homestead area	Remains in-situ	41.74	44.03	7.51	13.51	5.79
283	26/03/2021 12:04	Western homestead area	Remains in-situ	32.12	39.51	8.7	14.07	6.73
284	26/03/2021 12:05	Western homestead area	Remains in-situ	30.07	38.48	8.82	<LOD	9.72
285	26/03/2021 12:06	Western homestead area	Remains in-situ	30.08	26.09	8.17	<LOD	9
286	26/03/2021 12:07	Western homestead area	Remains in-situ	34.87	68.46	10.16	13.78	7.73
287	26/03/2021 12:08	Western homestead area	Remains in-situ	30.07	36.01	9.18	<LOD	10.04
288	26/03/2021 12:09	Western homestead area	Remains in-situ	30.07	61.27	9.96	<LOD	10.89
289	26/03/2021 12:10	Western homestead area	Remains in-situ	30.07	22.32	8.06	<LOD	9
290	26/03/2021 12:11	Western homestead area	Remains in-situ	30.07	103.95	10.82	<LOD	11.67
291	26/03/2021 12:12	Western homestead area	Remains in-situ	30.07	75.57	10.46	<LOD	11.38
292	26/03/2021 12:12	Western homestead area	Remains in-situ	30.07	20.29	7.47	<LOD	8.24
293	26/03/2021 12:13	Western homestead area	Remains in-situ	30.08	51.12	9.01	<LOD	9.91
294	26/03/2021 12:14	Western homestead area	Remains in-situ	30.08	39.06	9.15	<LOD	9.89
295	26/03/2021 12:15	Western homestead area	Remains in-situ	30.08	56.85	9.53	<LOD	10.34
296	26/03/2021 12:15	Western homestead area	Remains in-situ	33.35	71.39	10.61	<LOD	11.61
297	26/03/2021 12:16	Western homestead area	Remains in-situ	30.08	27.72	8.4	<LOD	9.43
298	26/03/2021 12:17	Western homestead area	Remains in-situ	30.08	11.92	7.57	<LOD	8.34
299	26/03/2021 12:17	Western homestead area	Remains in-situ	30.08	<LOD	10.21	7.77	5.18
300	26/03/2021 12:18	Western homestead area	Remains in-situ	30.07	53.78	9.63	<LOD	10.26
301	26/03/2021 12:19	Western homestead area	Remains in-situ	31.36	40.82	10.05	<LOD	11.11
302	26/03/2021 12:20	Western homestead area	Remains in-situ	30.08	48.87	9.41	<LOD	10.19
303	26/03/2021 12:20	Western homestead area	Remains in-situ	30.08	20.91	7.83	<LOD	8.56
304	26/03/2021 12:21	Western homestead area	Remains in-situ	30.07	32.35	8.03	<LOD	8.7
305	26/03/2021 12:22	Western homestead area	Remains in-situ	30.08	69.19	10.2	<LOD	11.1
306	26/03/2021 12:22	Western homestead area	Removed to Burwood	7.72	2411.12	102.3	<LOD	112.92
307	26/03/2021 12:23	Western homestead area	Remains in-situ	30.08	28.91	8.27	<LOD	9.11
308	26/03/2021 12:24	Western homestead area	Remains in-situ	30.08	38.61	9.01	<LOD	9.91
309	26/03/2021 12:25	Western homestead area	Remains in-situ	30.07	43.3	9.42	<LOD	10.28
310	26/03/2021 12:25	Western homestead area	Remains in-situ	30.08	27.22	8.46	<LOD	9.05
311	26/03/2021 12:32	Western homestead area	Remains in-situ	30.38	56.46	10.62	12.7	8.09
312	26/03/2021 12:33	Western homestead area	Remains in-situ	30.07	78.44	11.71	<LOD	12.53
313	26/03/2021 12:34	Western homestead area	Remains in-situ	30.08	67.24	10.96	<LOD	11.76

314	26/03/2021 12:35	Western homestead area	Remains in-situ	30.07	90.51	11.83	<LOD	13.25
315	26/03/2021 12:36	Western homestead area	Remains in-situ	30.17	43.47	10.18	<LOD	11.26
316	26/03/2021 12:37	Western homestead area	Remains in-situ	30.08	61.98	10.03	<LOD	10.85
317	26/03/2021 12:38	Western homestead area	Removed to Burwood	30.08	168.44	14.73	<LOD	16.31
318	26/03/2021 12:38	Western homestead area	Removed to Burwood	24.09	138.34	14.72	<LOD	16.14
319	26/03/2021 12:39	Western homestead area	Remains in-situ	30.07	80.66	11.01	<LOD	11.97
320	26/03/2021 12:39	Western homestead area	Removed to Burwood	30.07	126.77	12.91	<LOD	14.03
321	26/03/2021 12:40	Western homestead area	Remains in-situ	30.07	91.76	11.39	<LOD	12.4
322	26/03/2021 12:41	Western homestead area	Remains in-situ	30.08	96.71	11.99	<LOD	12.99
323	26/03/2021 12:42	Western homestead area	Remains in-situ	30.08	30.36	8.57	<LOD	9.55
324	26/03/2021 12:43	Western homestead area	Remains in-situ	30.07	29.08	8.79	<LOD	9.49
325	26/03/2021 13:06	Western homestead area	Removed to Burwood	17.7	198.65	19.8	<LOD	21.56
326	26/03/2021 13:06	Western homestead area	Remains in-situ	14.12	52.67	14	<LOD	15.28
327	26/03/2021 13:09	Western homestead area	Remains in-situ	10.12	<LOD	21.35	<LOD	16.25
328	26/03/2021 13:15	Western homestead area	Remains in-situ	12.51	32.26	14.3	<LOD	15.39
329	26/03/2021 13:18	Western homestead area	Remains in-situ	12.52	17.89	11.48	<LOD	12.34
395	1/04/2021 12:37	Western homestead area	Remains in-situ	30.07	91.08	10.9	<LOD	11.9
396	1/04/2021 12:38	Western homestead area	Remains in-situ	30.07	60.71	9.14	<LOD	10.06
397	1/04/2021 12:39	Western homestead area	Removed to Burwood	30.07	158.26	14.83	<LOD	16.36
398	1/04/2021 12:40	Western homestead area	Remains in-situ	30.07	64.4	10.18	<LOD	11.2
399	1/04/2021 12:40	Western homestead area	Removed to Burwood	9.33	177.59	26.22	<LOD	28.53
400	1/04/2021 12:41	Western homestead area	Remains in-situ	30.39	28.47	8.29	10.28	6.31
401	1/04/2021 12:41	Western homestead area	Removed to Burwood	14.11	148.51	20.76	<LOD	22.38
402	1/04/2021 12:42	Western homestead area	Remains in-situ	30.08	96.73	11.2	<LOD	12.35
403	1/04/2021 12:43	Western homestead area	Remains in-situ	30.07	125.75	13.17	<LOD	14.5
404	1/04/2021 12:44	Western homestead area	Remains in-situ	30.07	64.85	10.6	<LOD	11.82
405	1/04/2021 12:46	Western homestead area	Remains in-situ	30.07	113.17	10.4	<LOD	11.37
406	1/04/2021 12:47	Western homestead area	Remains in-situ	30.07	69.2	9.38	<LOD	10.32
407	1/04/2021 12:47	Western homestead area	Remains in-situ	30.07	100.74	10.37	<LOD	11.25
408	1/04/2021 12:49	Western homestead area	Remains in-situ	30.08	94.86	9.95	<LOD	10.69
409	1/04/2021 12:50	Western homestead area	Remains in-situ	30.07	28.12	8.68	<LOD	9.79
410	1/04/2021 12:51	Western homestead area	Remains in-situ	30.08	52.48	9.44	<LOD	10.4
411	1/04/2021 12:53	Western homestead area	Remains in-situ	30.07	109.99	11.67	<LOD	12.97
412	1/04/2021 12:53	Western homestead area	Removed to Burwood	30.29	61.27	9.99	21.48	7.87
413	1/04/2021 12:54	Western homestead area	Removed to Burwood	30.18	118.88	12.02	37.49	9.66
414	1/04/2021 12:55	Western homestead area	Removed to Burwood	16.12	225.03	22.92	<LOD	25.53
415	1/04/2021 12:56	Western homestead area	Remains in-situ	30.07	35.68	8.05	<LOD	8.62
416	1/04/2021 12:57	Western homestead area	Remains in-situ	36.16	85.15	9.96	14.87	7.55
417	1/04/2021 12:58	Western homestead area	Remains in-situ	30.07	112.97	11.34	<LOD	12.14
418	1/04/2021 12:59	Western homestead area	Remains in-situ	30.07	90.61	11.29	<LOD	12.51
419	1/04/2021 13:00	Western homestead area	Remains in-situ	30.08	103.22	11.38	<LOD	12.27
420	1/04/2021 13:00	Western homestead area	Removed to Burwood	30.07	144.13	12.72	<LOD	13.59
421	1/04/2021 13:01	Western homestead area	Remains in-situ	25.29	16.24	7.64	<LOD	8
422	1/04/2021 13:02	Western homestead area	Remains in-situ	30.08	77.63	11.01	<LOD	12.23
423	1/04/2021 13:03	Western homestead area	Remains in-situ	30.07	38.37	8.2	<LOD	8.95
424	1/04/2021 13:04	Western homestead area	Remains in-situ	30.07	33.29	8.63	<LOD	9.83
559	13/04/2021 9:53	ACM affected area - verify disposal options	Removed to Kate Valley	19.3	376.21	24.29	<LOD	26.98
560	13/04/2021 9:55	ACM affected area - verify disposal options	Removed to Kate Valley	27.96	161.86	13.51	20.06	10.2
561	13/04/2021 9:56	ACM affected area - verify disposal options	Removed to Kate Valley	30.07	63.25	9.41	<LOD	10.38
562	13/04/2021 10:13	ACM affected area - verify disposal options	Removed to Kate Valley	17.3	186.19	18.8	34.19	14.55
563	13/04/2021 10:41	ACM affected area - verify disposal options	Removed to Kate Valley	6.13	252.01	38.17	<LOD	41.95
564	13/04/2021 10:42	ACM affected area - verify disposal options	Removed to Kate Valley	30.07	59.47	9.92	<LOD	10.68
565	13/04/2021 10:43	ACM affected area - verify disposal options	Removed to Kate Valley	30.07	108.11	11.88	<LOD	13.04
566	13/04/2021 10:44	ACM affected area - verify disposal options	Removed to Kate Valley	24.88	169.04	15.87	<LOD	17.12
567	13/04/2021 10:44	ACM affected area - verify disposal options	Removed to Kate Valley	30.07	87.3	11.14	<LOD	12.02
568	13/04/2021 10:45	ACM affected area - verify disposal options	Removed to Kate Valley	4.54	198.37	41.94	<LOD	46.14
569	13/04/2021 10:45	ACM affected area - verify disposal options	Removed to Kate Valley	17.31	91.4	14.98	<LOD	16.32
570	13/04/2021 10:46	ACM affected area - verify disposal options	Removed to Kate Valley	14.11	121.78	19.06	<LOD	20.26
571	13/04/2021 10:46	ACM affected area - verify disposal options	Removed to Kate Valley	9.72	610.55	48.1	<LOD	51.88
572	13/04/2021 10:48	Western homestead area	Removed to Burwood	28.11	60.12	11.3	22.63	8.99
573	13/04/2021 10:48	Western homestead area	Remains in-situ	30.05	26.19	7.98	9.22	6.04
574	13/04/2021 10:49	Western homestead area	Remains in-situ	30.07	42.57	11.13	<LOD	12.35
575	13/04/2021 10:55	Western homestead area	Remains in-situ	60.29	111.51	9.32	13.7	6.99
576	13/04/2021 10:56	Western homestead area	Remains in-situ	49.33	59.87	7.59	12.12	5.74
577	13/04/2021 10:57	Western homestead area	Removed to Burwood	30.05	124.39	11.48	18.85	8.71
578	13/04/2021 10:58	Western homestead area	Remains in-situ	30.07	34.51	8.3	<LOD	8.89
579	13/04/2021 10:59	Western homestead area	Removed to Burwood	30.07	133.98	11.85	<LOD	12.95
580	13/04/2021 10:59	Western homestead area	Remains in-situ	30.07	17.09	7.5	<LOD	8.05
581	13/04/2021 11:00	Western homestead area	Remains in-situ	30.07	28.69	7.77	<LOD	8.52
582	13/04/2021 11:01	Western homestead area	Remains in-situ	30.08	69.31	10.4	<LOD	11.19
583	13/04/2021 11:03	Western homestead area	Remains in-situ	30.07	111.87	10.95	<LOD	12.15
584	13/04/2021 11:04	Western homestead area	Remains in-situ	30.08	92.37	9.98	<LOD	11.14
585	13/04/2021 11:04	Western homestead area	Removed to Burwood	31.26	52.37	10.02	18.54	7.85
586	13/04/2021 11:05	Western homestead area	Removed to Burwood	30.07	57.03	10.06	16.71	7.8
587	13/04/2021 11:06	Western homestead area	Remains in-situ	30.08	20.51	7.94	<LOD	8.59
588	13/04/2021 11:07	Western homestead area	Remains in-situ	30.08	42.68	8.7	<LOD	8.96
589	13/04/2021 11:08	Western homestead area	Remains in-situ	30.08	33.09	10.03	<LOD	11.06
590	13/04/2021 11:10	Western homestead area	Remains in-situ	60.41	33.52	5.91	14.24	4.59
591	13/04/2021 11:11	Western homestead area	Removed to Burwood	30.01	33.64	8.89	16.66	7.04
592	13/04/2021 11:12	Western homestead area	Remains in-situ	30.56	53.74	11.72	<LOD	13
593	13/04/2021 11:13	Western homestead area	Remains in-situ	30.07	49.51	11.99	<LOD	12.79

594	13/04/2021 11:14	Western homestead area	Remains in-situ	30.39	68.71	11.21	13.88	8.5
595	13/04/2021 11:15	Western homestead area	Remains in-situ	30.95	116.02	12.2	<LOD	13.26
596	13/04/2021 11:15	Western homestead area	Remains in-situ	30.07	115.04	11.6	<LOD	12.7
597	13/04/2021 11:17	Western homestead area	Remains in-situ	30.07	55.19	9.18	<LOD	10.13
598	13/04/2021 11:17	Western homestead area	Remains in-situ	30.08	<LOD	10.42	<LOD	7.89
599	13/04/2021 11:18	Western homestead area	Remains in-situ	30.08	<LOD	9.96	<LOD	7.28
600	13/04/2021 11:19	Western homestead area	Remains in-situ	30.07	69.2	9.94	<LOD	10.76
601	13/04/2021 11:19	Western homestead area	Remains in-situ	30.07	13.38	7.29	<LOD	7.93
602	13/04/2021 11:20	Western homestead area	Remains in-situ	30.07	82.33	10.86	14.04	8.21
603	13/04/2021 11:21	Western homestead area	Remains in-situ	30.07	10.23	6.66	<LOD	7.16
604	13/04/2021 11:24	Western homestead area	Remains in-situ	30.07	43.35	9.28	<LOD	10.03
654	15/04/2021 11:05	Western homestead area	Remains in-situ	30.06	54.3	8.68	10.02	6.52
655	15/04/2021 11:06	Western homestead area	Remains in-situ	30.08	<LOD	9.98	<LOD	7.15
656	15/04/2021 11:06	Western homestead area	Remains in-situ	30.08	<LOD	9.93	9.94	5.17
657	15/04/2021 11:07	Western homestead area	Remains in-situ	30.07	19.74	7.33	<LOD	8.22
658	15/04/2021 11:08	Western homestead area	Remains in-situ	30.07	34.84	7.73	<LOD	8.27
659	15/04/2021 11:08	Western homestead area	Remains in-situ	30.08	26.72	8.38	<LOD	9.35
660	15/04/2021 11:09	Western homestead area	Remains in-situ	30.08	30.63	8	<LOD	8.86
661	15/04/2021 11:10	Western homestead area	Removed to Burwood	30.34	38.36	8.63	23.51	7.01
662	15/04/2021 11:11	Western homestead area	Remains in-situ	30.08	78.06	10.42	<LOD	11.31
663	15/04/2021 11:12	Western homestead area	Removed to Burwood	30.08	43.98	9.57	16.51	7.45
664	15/04/2021 11:13	Western homestead area	Remains in-situ	30.07	33.39	8.2	<LOD	8.98
665	15/04/2021 11:40	Western homestead area	Remains in-situ	30.07	62.8	10.07	<LOD	11.05
666	15/04/2021 11:41	Western homestead area	Remains in-situ	30.08	68.36	9.27	<LOD	10.27
667	15/04/2021 11:41	Western homestead area	Remains in-situ	30.07	39.8	8.3	<LOD	8.82
668	15/04/2021 11:42	Western homestead area	Remains in-situ	30.08	<LOD	10.88	<LOD	8.22
669	15/04/2021 11:43	Western homestead area	Remains in-situ	30.07	52.52	10.48	<LOD	11.56
670	15/04/2021 11:44	Western homestead area	Remains in-situ	30.08	54.54	9.02	<LOD	9.77
671	15/04/2021 11:44	Western homestead area	Remains in-situ	30.08	32.19	7.83	<LOD	8.4
672	15/04/2021 12:02	Western homestead area	Removed to Burwood	38.37	31.13	8.57	21.67	6.97
673	15/04/2021 12:03	Western homestead area	Remains in-situ	30.08	31.3	8.98	<LOD	9.78
964	4/05/2021 9:37	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	142.56	12.31	<LOD	13.68
965	4/05/2021 9:38	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	196.48	14.05	<LOD	15.22
966	4/05/2021 9:39	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	175.13	13.34	<LOD	14.57
967	4/05/2021 9:40	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	156.47	12.94	<LOD	13.84
968	4/05/2021 9:41	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	162.52	12.86	<LOD	14.01
969	4/05/2021 9:42	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	184.74	13.28	<LOD	14.46
970	4/05/2021 9:43	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	49.74	8.55	<LOD	9.43
971	4/05/2021 9:44	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	121.93	11.92	15.31	8.96
972	4/05/2021 9:45	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	130.14	11.91	<LOD	12.81
973	4/05/2021 9:50	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	170.73	15.77	<LOD	16.89
974	4/05/2021 9:51	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	86.56	10.55	<LOD	11.71
975	4/05/2021 9:52	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	85.86	10.44	<LOD	11.29
976	4/05/2021 9:53	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	122.91	11.14	<LOD	12.25
977	4/05/2021 9:54	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.07	64.01	9.09	<LOD	9.99
978	4/05/2021 9:54	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	108.9	11.73	<LOD	12.95
979	4/05/2021 9:56	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	125.11	11.97	<LOD	12.71
980	4/05/2021 9:58	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	44.76	10.18	<LOD	11.5
981	4/05/2021 10:01	Stockpile testing - eastern homestead area	OK for disposal at Burwood	30.08	46.78	8.46	<LOD	9.3
983	4/05/2021 10:09	Eastern homestead area	Removed to Burwood	13.72	278.02	24.22	<LOD	25.49
984	4/05/2021 10:09	Eastern homestead area	Removed to Burwood	11.72	263.83	27.08	<LOD	28.53
985	4/05/2021 10:10	Eastern homestead area	Removed to Burwood	11.72	279.35	29.83	<LOD	33.14
986	4/05/2021 10:11	Eastern homestead area	Remains in-situ	30.08	88.08	10.63	<LOD	11.73
987	4/05/2021 10:11	Eastern homestead area	Remains in-situ	30.17	47.76	8.97	<LOD	9.76
988	4/05/2021 10:12	Eastern homestead area	Remains in-situ	30.07	46.83	8.88	<LOD	9.89
989	4/05/2021 10:13	Eastern homestead area	Remains in-situ	30.07	36.23	8.41	<LOD	9.37
990	4/05/2021 10:14	Eastern homestead area	Remains in-situ	30.07	70.25	8.56	<LOD	9.21
991	4/05/2021 10:15	Eastern homestead area	Remains in-situ	30.08	67.16	9.26	<LOD	9.82
992	4/05/2021 10:15	Eastern homestead area	Remains in-situ	30.08	32.45	9.54	<LOD	10.38
993	4/05/2021 10:16	Eastern homestead area	Remains in-situ	30.07	13.75	7.55	<LOD	7.85
994	4/05/2021 10:17	Eastern homestead area	Remains in-situ	42.13	61.19	7.34	13.17	5.58
995	4/05/2021 10:18	Eastern homestead area	Removed to Burwood	30.07	27.59	8	19.02	6.43
996	4/05/2021 10:19	Eastern homestead area	Removed to Burwood	30.1	41.35	11.91	39.46	10.44
997	4/05/2021 10:19	Eastern homestead area	Remains in-situ	30.07	29.36	8.7	<LOD	9.4
998	4/05/2021 10:20	Eastern homestead area	Remains in-situ	30.07	31.54	8.7	<LOD	9.53
999	4/05/2021 10:21	Eastern homestead area	Remains in-situ	30.08	33.93	8.59	<LOD	9.66
1000	4/05/2021 10:22	Eastern homestead area	Remains in-situ	30.08	30.83	7.75	<LOD	8.39
1001	4/05/2021 10:23	Eastern homestead area	Remains in-situ	30.08	33.99	8.02	<LOD	8.75
1002	4/05/2021 10:23	Eastern homestead area	Remains in-situ	30.08	26.4	7.05	<LOD	7.47
1003	4/05/2021 10:26	Eastern homestead area	Remains in-situ	30.07	41.16	8.17	<LOD	8.63
1004	4/05/2021 10:26	Eastern homestead area	Remains in-situ	30.07	15.68	7.23	<LOD	8.01
1005	4/05/2021 10:28	Eastern homestead area	Removed to Burwood	60.09	64.62	8.08	19.46	6.3
1006	4/05/2021 10:28	Eastern homestead area	Remains in-situ	30.07	36.36	7.98	<LOD	8.81
1007	4/05/2021 10:29	Eastern homestead area	Remains in-situ	30.07	19.73	6.4	<LOD	6.86
1008	4/05/2021 10:30	Eastern homestead area	Remains in-situ	30.08	48.33	8.41	<LOD	9.03
1009	4/05/2021 10:31	Eastern homestead area	Remains in-situ	30.07	47.93	8.24	<LOD	9.18
1010	4/05/2021 10:32	Eastern homestead area	Remains in-situ	30.07	45.69	9.38	<LOD	10.32
1011	4/05/2021 10:32	Eastern homestead area	Remains in-situ	30.08	46.06	9.83	<LOD	10.59
1012	4/05/2021 10:33	Eastern homestead area	Remains in-situ	30.08	45.89	8.98	<LOD	9.54
1013	4/05/2021 10:34	Eastern homestead area	Remains in-situ	30.08	50.97	9.77	<LOD	10.49
1014	4/05/2021 10:35	Eastern homestead area	Remains in-situ	30.08	43.87	9.37	<LOD	10.52

1015	4/05/2021 10:36	Eastern homestead area	Remains in-situ	30.07	55.9	9.94	<LOD	10.88
1016	4/05/2021 10:37	Eastern homestead area	Remains in-situ	30.07	47.16	9.14	<LOD	9.9
1017	4/05/2021 10:38	Eastern homestead area	Remains in-situ	30.08	33.72	10.17	<LOD	10.91
1018	4/05/2021 10:38	Eastern homestead area	Remains in-situ	30.08	68.53	10.75	<LOD	11.91
1019	4/05/2021 10:50	Eastern homestead area	Removed to Burwood	30.08	480.22	22.56	<LOD	24.68
1020	4/05/2021 10:51	Eastern homestead area	Remains in-situ	30.08	72.79	10.74	<LOD	11.44
1021	4/05/2021 10:51	Eastern homestead area	Remains in-situ	30.08	84.18	11.27	<LOD	12.72
1022	4/05/2021 10:52	Eastern homestead area	Remains in-situ	30.07	119.31	11.82	<LOD	12.98
1023	4/05/2021 10:53	Eastern homestead area	Remains in-situ	30.16	61.25	9.71	<LOD	10.42
1024	4/05/2021 10:54	Eastern homestead area	Remains in-situ	30.08	102.84	11.63	<LOD	12.43
1025	4/05/2021 10:55	Eastern homestead area	Removed to Burwood	13.71	577.16	39.68	<LOD	43.17
1026	4/05/2021 10:56	Eastern homestead area	Remains in-situ	30.07	66.82	9.87	<LOD	10.44
1027	4/05/2021 10:57	Eastern homestead area	Removed to Burwood	26.09	650.91	24.88	30.25	18.34
1028	4/05/2021 10:58	Eastern homestead area	Remains in-situ	30.08	10.57	6.75	<LOD	7.2
1029	4/05/2021 10:59	Eastern homestead area	Remains in-situ	30.08	76.12	8.44	<LOD	9.29
1030	4/05/2021 11:00	Eastern homestead area	Remains in-situ	30.07	94.72	11.02	<LOD	12.1
1031	4/05/2021 11:01	Eastern homestead area	Remains in-situ	30.08	82.72	10.78	<LOD	11.97
1032	4/05/2021 11:02	Eastern homestead area	Remains in-situ	30.08	111.35	12.67	<LOD	13.6
1033	4/05/2021 11:03	Eastern homestead area	Remains in-situ	30.07	60.79	10.09	<LOD	11.3
1034	4/05/2021 11:04	Eastern homestead area	Remains in-situ	30.08	48.99	8.84	<LOD	9.5
1035	4/05/2021 11:04	Eastern homestead area	Remains in-situ	30.07	79.24	10.05	<LOD	11.26
1036	4/05/2021 11:05	Eastern homestead area	Remains in-situ	30.07	41.18	8.89	<LOD	9.65
1037	4/05/2021 11:06	Eastern homestead area	Remains in-situ	30.08	105.84	11.62	<LOD	12.37
1038	4/05/2021 11:07	Eastern homestead area	Removed to Burwood	30.08	127.72	12.41	<LOD	13.7
1039	4/05/2021 11:08	Eastern homestead area	Removed to Burwood	30.07	132.82	12.68	<LOD	13.85
1040	4/05/2021 11:13	Eastern homestead area	Remains in-situ	30.08	120.93	12.17	<LOD	13.18
1041	4/05/2021 11:14	Eastern homestead area	Remains in-situ	30.07	99.78	11.67	<LOD	12.46
1042	4/05/2021 11:15	Eastern homestead area	Remains in-situ	30.08	121.69	12.69	<LOD	13.51
1043	4/05/2021 11:17	Eastern homestead area	Removed to Burwood	17.7	152.84	18.02	29.26	13.96
1044	4/05/2021 11:17	Eastern homestead area	Removed to Burwood	30.04	130.68	13.39	<LOD	14.79
1045	4/05/2021 11:18	Eastern homestead area	Removed to Burwood	30.07	164.57	14.15	<LOD	15.5
1046	4/05/2021 11:19	Eastern homestead area	Removed to Burwood	15.31	440.65	30.87	<LOD	33.74
1047	4/05/2021 11:20	Eastern homestead area	Remains in-situ	30.07	59.73	9.67	<LOD	10.82
1048	4/05/2021 11:21	Eastern homestead area	Remains in-situ	30.07	83.6	10.28	<LOD	11.4
1049	4/05/2021 11:23	Eastern homestead area	Remains in-situ	30.08	97.64	12.18	<LOD	13.22
1050	4/05/2021 11:23	Eastern homestead area	Removed to Burwood	15.31	281.39	23.65	<LOD	25.92
1051	4/05/2021 11:29	Eastern homestead area	Removed to Burwood	22.5	205.38	17.44	<LOD	18.83
1052	4/05/2021 11:31	Eastern homestead area	Remains in-situ	30.08	118.4	12.11	<LOD	13.23
1053	4/05/2021 11:32	Eastern homestead area	Remains in-situ	30.08	17.73	7.26	<LOD	7.71
1054	4/05/2021 11:33	Eastern homestead area	Remains in-situ	30.08	35.26	9.11	<LOD	9.57
1055	4/05/2021 11:33	Eastern homestead area	Remains in-situ	30.07	40.83	8.61	<LOD	9.11
1056	4/05/2021 11:34	Eastern homestead area	Remains in-situ	30.07	19.04	8.14	<LOD	8.5
1057	4/05/2021 11:35	Eastern homestead area	Remains in-situ	30.07	27.99	8.26	<LOD	9.1
1058	4/05/2021 11:37	Eastern homestead area	Removed to Burwood	30.07	41.76	9.2	26.17	7.55
1059	4/05/2021 11:37	Eastern homestead area	Remains in-situ	30.08	70.58	10.55	<LOD	11.55
1060	4/05/2021 11:39	Eastern homestead area	Remains in-situ	30.08	95.7	11.73	<LOD	13.16
1061	4/05/2021 11:39	Eastern homestead area	Removed to Burwood	30.08	61.16	9.45	16.93	7.31
1062	4/05/2021 11:40	Eastern homestead area	Remains in-situ	30.08	62.11	10.26	<LOD	11.31
1063	4/05/2021 11:41	Eastern homestead area	Remains in-situ	30.08	69.98	10.53	<LOD	11.71
1064	4/05/2021 11:42	Eastern homestead area	Removed to Burwood	30.08	132.83	13.57	<LOD	14.78
1065	4/05/2021 11:43	Eastern homestead area	Remains in-situ	30.07	31.62	7.01	<LOD	7.78
1066	4/05/2021 11:44	Eastern homestead area	Remains in-situ	30.08	69.18	10.95	<LOD	11.98
1067	4/05/2021 11:45	Eastern homestead area	Remains in-situ	30.08	68.24	10.45	<LOD	11.22
1068	4/05/2021 11:46	Eastern homestead area	Remains in-situ	30.07	59.25	9.34	<LOD	10.23
1069	4/05/2021 11:47	Eastern homestead area	Removed to Burwood	18.05	94.07	15.3	24.39	11.98
1070	4/05/2021 11:48	Eastern homestead area	Remains in-situ	30.08	89.06	11.71	<LOD	12.95
1071	4/05/2021 11:51	Eastern homestead area	Remains in-situ	30.07	62.19	9.57	<LOD	10.5
1072	4/05/2021 12:02	Eastern homestead area	Remains in-situ	30.08	29.34	7.74	<LOD	8.43
1073	4/05/2021 12:03	Eastern homestead area	Remains in-situ	30.07	38.23	8.84	<LOD	9.45
1074	4/05/2021 12:04	Eastern homestead area	Remains in-situ	30.07	27.08	8.16	<LOD	9.02
1075	4/05/2021 12:04	Eastern homestead area	Remains in-situ	28.88	29.39	8.39	<LOD	9.19
1076	4/05/2021 12:05	Eastern homestead area	Remains in-situ	30.07	46.97	9.52	<LOD	10.27
1077	4/05/2021 12:06	Eastern homestead area	Remains in-situ	30.08	68.57	10.19	<LOD	10.74
1078	4/05/2021 12:07	Eastern homestead area	Remains in-situ	30.08	59.5	9.99	<LOD	10.8
1079	4/05/2021 12:08	Eastern homestead area	Removed to Burwood	13.72	377.99	31.04	<LOD	34.8
1080	4/05/2021 12:08	Eastern homestead area	Remains in-situ	29.28	47.17	9.58	<LOD	10.69
1081	4/05/2021 12:09	Eastern homestead area	Removed to Burwood	26.69	70.2	11.23	18.9	8.73
1082	4/05/2021 12:10	Eastern homestead area	Remains in-situ	30.89	94.19	12.69	<LOD	14.28
1083	4/05/2021 12:11	Eastern homestead area	Remains in-situ	30.08	93.03	10.51	<LOD	11.43
1084	4/05/2021 12:12	Eastern homestead area	Removed to Burwood	30.31	248.79	15.48	61.43	12.34
1085	4/05/2021 12:12	Eastern homestead area	Removed to Burwood	4.94	263.44	41.64	<LOD	47.81
1086	4/05/2021 12:13	Eastern homestead area	Remains in-situ	30.08	76.32	10.23	<LOD	11.14
1087	4/05/2021 12:14	Eastern homestead area	Remains in-situ	30.08	34.89	9.1	<LOD	9.9
1088	4/05/2021 12:15	Eastern homestead area	Remains in-situ	30.05	31.98	8.81	11.44	6.74
1089	4/05/2021 12:16	Eastern homestead area	Remains in-situ	30.08	69.39	10.7	<LOD	11.88
1090	4/05/2021 12:17	Eastern homestead area	Remains in-situ	30.28	22.4	7.74	11.78	5.98
1091	4/05/2021 12:18	Eastern homestead area	Remains in-situ	30.07	50.46	8.91	<LOD	9.68
1092	4/05/2021 12:19	Eastern homestead area	Remains in-situ	30.07	<LOD	10.54	<LOD	7.42
1093	4/05/2021 12:19	Eastern homestead area	Remains in-situ	30.07	<LOD	10.69	<LOD	7.74
1094	4/05/2021 12:20	Eastern homestead area	Remains in-situ	30.08	<LOD	10.75	<LOD	7.72
1095	4/05/2021 12:21	Eastern homestead area	Remains in-situ	30.07	29.03	8.38	<LOD	9.18

1096	4/05/2021 12:22	Eastern homestead area	Removed to Burwood	17.71	353.4	25.03	<LOD	27.27
1097	4/05/2021 12:24	Eastern homestead area	Removed to Burwood	30.08	139.76	11.57	<LOD	12.66
1098	4/05/2021 12:24	Eastern homestead area	Removed to Burwood	11.32	523.41	38.46	<LOD	43.14
1099	4/05/2021 12:25	Eastern homestead area	Removed to Burwood	16.5	675.23	34.59	<LOD	37.67
1100	4/05/2021 12:26	Eastern homestead area	Remains in-situ	30.07	62.26	10.08	<LOD	11.13
1101	4/05/2021 12:27	Eastern homestead area	Remains in-situ	30.07	44.56	8.66	<LOD	9.31
1102	4/05/2021 12:27	Eastern homestead area	Remains in-situ	30.08	22.91	8.2	<LOD	9.27
1103	4/05/2021 12:28	Eastern homestead area	Removed to Burwood	12.91	273.2	27.43	34	20.84
1104	4/05/2021 12:29	Eastern homestead area	Remains in-situ	30.08	<LOD	10.03	<LOD	7.4
1105	4/05/2021 12:30	Eastern homestead area	Removed to Burwood	17.71	237.69	21.85	<LOD	23.86
1106	4/05/2021 12:31	Eastern homestead area	Remains in-situ	29.68	75.98	10.52	<LOD	11.67
1107	4/05/2021 12:32	Eastern homestead area	Remains in-situ	30.07	26.82	7.93	<LOD	8.63
1108	4/05/2021 12:33	Eastern homestead area	Remains in-situ	30.08	80.3	10.3	<LOD	11.11
1109	4/05/2021 12:35	Eastern homestead area	Remains in-situ	24.85	26.35	8.59	10.29	6.52
1110	4/05/2021 12:38	Eastern homestead area	Remains in-situ	30.01	41.78	9.68	<LOD	10.85
1111	4/05/2021 12:39	Eastern homestead area	Remains in-situ	30.08	108.59	11.78	<LOD	12.86
1112	4/05/2021 12:40	Eastern homestead area	Remains in-situ	30.07	78.57	11.32	<LOD	12.69
1113	4/05/2021 12:40	Eastern homestead area	Remains in-situ	30.08	44.13	9.12	<LOD	9.87
1114	4/05/2021 12:41	Eastern homestead area	Remains in-situ	30.07	12.33	6.75	<LOD	7.4
1115	4/05/2021 12:42	Eastern homestead area	Remains in-situ	30.08	18.1	7.25	<LOD	7.88
1116	4/05/2021 12:43	Eastern homestead area	Remains in-situ	30.07	26.54	7.97	<LOD	8.54
1117	4/05/2021 12:44	Eastern homestead area	Remains in-situ	30.08	31.4	8.55	<LOD	9.22
1118	4/05/2021 12:44	Eastern homestead area	Remains in-situ	30.07	47.78	10.18	<LOD	11.07
1119	4/05/2021 12:45	Eastern homestead area	Remains in-situ	30.07	50.12	9.4	<LOD	10.18
1120	4/05/2021 12:46	Eastern homestead area	Remains in-situ	30.08	<LOD	9.95	<LOD	7.42
1121	4/05/2021 12:47	Eastern homestead area	Removed to Burwood	30.07	27.45	7.73	17.01	6.13
1122	4/05/2021 12:48	Eastern homestead area (waste pit)	Removed to Kate Valley	9.32	2390.7	125.22	<LOD	135.82
1123	4/05/2021 12:49	Eastern homestead area	Removed to Burwood	21.98	41.84	11.84	19.62	9.39
1124	4/05/2021 12:50	Eastern homestead area	Remains in-situ	30.3	52.11	9.76	13.7	7.48
1125	4/05/2021 12:51	Eastern homestead area	Remains in-situ	30.07	36.65	8.78	<LOD	9.45
1126	4/05/2021 12:52	Eastern homestead area	Remains in-situ	30.08	33.31	8.77	<LOD	9.47
1127	4/05/2021 12:56	Eastern homestead area	Remains in-situ	30.07	44.16	9.36	11.34	7.09
1128	4/05/2021 12:57	Eastern homestead area	Remains in-situ	30.07	20.96	8.19	<LOD	9.03
1129	4/05/2021 12:58	Eastern homestead area	Remains in-situ	30.08	14.58	7.92	<LOD	8.99
1130	4/05/2021 12:59	Eastern homestead area	Remains in-situ	30.07	<LOD	9.59	<LOD	7.06
1131	4/05/2021 13:00	Eastern homestead area	Remains in-situ	30.08	<LOD	10.17	<LOD	7.4
1132	4/05/2021 13:01	Eastern homestead area	Remains in-situ	30.08	<LOD	12.48	<LOD	9
1133	4/05/2021 13:01	Eastern homestead area	Remains in-situ	30.08	23.62	8.54	<LOD	8.86
1134	4/05/2021 13:02	Eastern homestead area	Remains in-situ	30.07	<LOD	9.61	10.35	4.99
1135	4/05/2021 13:03	Eastern homestead area	Remains in-situ	30.07	<LOD	10.19	<LOD	7.49
1136	4/05/2021 13:04	Eastern homestead area	Remains in-situ	30.07	75.32	10.61	<LOD	11.52
1137	4/05/2021 13:05	Eastern homestead area	Remains in-situ	30.08	<LOD	10.6	<LOD	7.52
1138	4/05/2021 13:06	Eastern homestead area	Remains in-situ	21.31	<LOD	12.26	<LOD	8.7
1139	4/05/2021 13:07	Eastern homestead area	Remains in-situ	20.5	<LOD	12.57	<LOD	8.82
1141	4/05/2021 13:18	Eastern homestead area	Removed to Burwood	30.03	114.79	11.84	15.51	8.92
1142	4/05/2021 13:19	Eastern homestead area	Removed to Burwood	30.08	138.17	11.97	<LOD	12.89
1143	4/05/2021 13:20	Eastern homestead area	Removed to Burwood	28.88	184.9	13.17	<LOD	14.38
1144	4/05/2021 13:21	Eastern homestead area	Removed to Burwood	30.07	130.32	12.47	<LOD	13.57
1145	4/05/2021 13:22	Eastern homestead area	Removed to Burwood	30.07	120.83	12.23	18.3	9.28
1146	4/05/2021 13:23	Eastern homestead area	Remains in-situ	30.07	112.22	11.28	<LOD	12.36
1147	4/05/2021 13:23	Eastern homestead area	Removed to Burwood	30.08	72.39	10.44	17	8.02
1148	4/05/2021 13:24	Eastern homestead area	Remains in-situ	30.08	87.84	11.06	<LOD	12.33
1149	4/05/2021 13:25	Eastern homestead area	Removed to Burwood	30.08	144.38	11.46	<LOD	12.42
1150	4/05/2021 13:26	Eastern homestead area	Removed to Burwood	2.95	209.01	55.08	<LOD	64.41
1151	4/05/2021 13:27	Eastern homestead area	Remains in-situ	25.29	17.85	6.51	<LOD	6.85
1152	4/05/2021 13:28	Eastern homestead area	Remains in-situ	30.08	34.53	8.22	11.1	6.25
1153	4/05/2021 13:30	Eastern homestead area	Remains in-situ	30.07	28.92	8.01	<LOD	8.87
1154	4/05/2021 13:31	Eastern homestead area	Remains in-situ	28.87	21.3	8.22	<LOD	9.06
1155	4/05/2021 13:32	Eastern homestead area	Remains in-situ	30.08	86.43	10.64	<LOD	11.69
1156	4/05/2021 13:34	Eastern homestead area	Remains in-situ	30.09	<LOD	9.85	<LOD	7.2
1157	4/05/2021 13:35	Eastern homestead area	Remains in-situ	21.7	<LOD	12.5	<LOD	9.08
1158	4/05/2021 13:35	Eastern homestead area	Remains in-situ	30.07	31.07	8.58	<LOD	9.12
1159	4/05/2021 13:36	Eastern homestead area	Remains in-situ	24.09	16.24	8.47	<LOD	9.13
1160	4/05/2021 13:37	Eastern homestead area	Remains in-situ	27.28	32.35	8.57	<LOD	9.13
1161	4/05/2021 13:37	Eastern homestead area	Remains in-situ	30.07	32.9	8.8	<LOD	9.86
1162	4/05/2021 13:38	Eastern homestead area	Remains in-situ	24.9	18.82	8.56	<LOD	9.28
1163	4/05/2021 13:39	Eastern homestead area	Remains in-situ	30.08	21.38	7.76	<LOD	8.64
1164	4/05/2021 13:39	Eastern homestead area	Remains in-situ	22.89	12.37	8.23	<LOD	9.25
1165	4/05/2021 13:40	Eastern homestead area	Remains in-situ	29.28	19.26	7.79	<LOD	8.75
1166	4/05/2021 13:41	Eastern homestead area	Remains in-situ	27.28	20.11	8.28	<LOD	9.34
1167	4/05/2021 13:41	Eastern homestead area	Remains in-situ	28.08	23.09	8.39	<LOD	9.09
1168	4/05/2021 13:43	Eastern homestead area	Remains in-situ	30.08	33.27	8.63	<LOD	9.43
1169	4/05/2021 13:44	Eastern homestead area	Remains in-situ	30.07	34.23	8.75	<LOD	9.78
1170	4/05/2021 13:44	Eastern homestead area	Remains in-situ	30.08	40.79	8.92	<LOD	9.97
1171	4/05/2021 13:45	Eastern homestead area	Remains in-situ	30.08	29.58	8.56	<LOD	9.59
1172	4/05/2021 13:46	Eastern homestead area	Remains in-situ	21.3	12.88	8.41	<LOD	9.1
1173	4/05/2021 13:46	Eastern homestead area	Remains in-situ	30.08	100.88	11.82	<LOD	12.87
1174	4/05/2021 13:47	Eastern homestead area	Remains in-situ	22.09	17.44	8.53	<LOD	9.23
1175	4/05/2021 13:47	Eastern homestead area	Remains in-situ	24.89	<LOD	11.86	<LOD	8.88
1176	4/05/2021 13:48	Eastern homestead area	Remains in-situ	24.48	14.24	8.45	<LOD	9.14
1177	4/05/2021 13:49	Eastern homestead area	Remains in-situ	22.49	<LOD	12.63	<LOD	9.1

1246	7/05/2021 13:21	Eastern homestead area	Removed to Burwood	30.43	146.36	13.64	<LOD	15.23
1247	7/05/2021 13:22	Eastern homestead area	Remains in-situ	30.07	82.89	10.43	<LOD	11.36
1248	7/05/2021 13:23	Eastern homestead area	Remains in-situ	30.07	34.89	8.55	<LOD	9.57
1249	7/05/2021 13:24	Eastern homestead area	Remains in-situ	44.79	53.68	8.19	<LOD	9.05
1250	7/05/2021 13:25	Eastern homestead area	Remains in-situ	30.08	<LOD	10.45	<LOD	7.58
1251	7/05/2021 13:26	Eastern homestead area	Remains in-situ	27.68	<LOD	11.77	<LOD	8.53
1252	7/05/2021 13:27	Eastern homestead area	Remains in-situ	29.67	33.39	8.65	<LOD	9.21
1253	7/05/2021 13:28	Eastern homestead area	Remains in-situ	30.07	54.22	9.8	<LOD	10.59
1254	7/05/2021 13:29	Eastern homestead area	Remains in-situ	30.08	29.41	8.31	<LOD	9.21
1255	7/05/2021 13:30	Eastern homestead area	Remains in-situ	31.36	57.6	9.49	<LOD	10.62
1256	7/05/2021 13:31	Eastern homestead area	Removed to Burwood	18.11	192.24	18.52	<LOD	20.43
1257	7/05/2021 13:32	Eastern homestead area	Remains in-situ	30.07	64.9	10.48	<LOD	11.52
1258	7/05/2021 13:32	Eastern homestead area	Removed to Burwood	20.89	163.36	16.42	<LOD	17.93
1259	7/05/2021 13:33	Eastern homestead area	Removed to Burwood	30.07	100.07	11.37	16.26	8.62
1260	7/05/2021 13:33	Eastern homestead area	Remains in-situ	30.08	51.82	9.93	<LOD	11.16
1261	7/05/2021 13:34	Eastern homestead area	Remains in-situ	25.29	14.73	8.47	<LOD	9.03
1262	7/05/2021 13:35	Eastern homestead area	Remains in-situ	30.07	<LOD	10.28	<LOD	7.3
1263	7/05/2021 13:35	Eastern homestead area	Remains in-situ	30.08	56.89	9.23	<LOD	9.87
1264	7/05/2021 13:38	Eastern homestead area	Remains in-situ	23.3	<LOD	12.07	<LOD	8.95
1265	7/05/2021 13:38	Eastern homestead area	Remains in-situ	28.47	<LOD	11.08	<LOD	8.06
1266	7/05/2021 13:39	Eastern homestead area	Remains in-situ	25.29	16.39	8.47	<LOD	9.24
1267	7/05/2021 13:40	Eastern homestead area	Remains in-situ	24.1	<LOD	11.75	<LOD	8.68
1268	7/05/2021 13:40	Eastern homestead area	Remains in-situ	21.71	15.08	8.83	<LOD	9.14
1269	7/05/2021 13:41	Eastern homestead area	Remains in-situ	24.89	<LOD	12.3	<LOD	8.87
1270	7/05/2021 13:42	Eastern homestead area	Remains in-situ	21.3	<LOD	12.93	<LOD	9.04
1271	7/05/2021 13:42	Eastern homestead area	Remains in-situ	23.68	<LOD	11.79	9.49	6.08
1272	7/05/2021 13:43	Eastern homestead area	Removed to Burwood	5.34	209.54	34.86	<LOD	38.35
1273	7/05/2021 13:44	Eastern homestead area	Remains in-situ	30.07	101.46	10.52	<LOD	11.39
1274	7/05/2021 13:45	Eastern homestead area	Removed to Burwood	5.34	179.42	31.21	<LOD	32.78
1275	7/05/2021 13:46	Eastern homestead area	Remains in-situ	30.08	87.29	10.66	<LOD	11.61
1276	7/05/2021 13:48	Eastern homestead area	Removed to Burwood	30.07	132.39	13.16	18.88	9.97
1277	7/05/2021 13:48	Eastern homestead area	Removed to Burwood	30.08	143.12	14.61	<LOD	16.2
1278	7/05/2021 13:49	Eastern homestead area	Remains in-situ	30.07	93.74	11.47	<LOD	12.37
1279	7/05/2021 13:50	Eastern homestead area	Removed to Burwood	30.08	126.55	12.83	<LOD	13.41
1280	7/05/2021 13:51	Eastern homestead area	Remains in-situ	30.07	42.39	8.55	<LOD	9.59
1281	7/05/2021 13:52	Eastern homestead area	Remains in-situ	30.07	76.64	10.23	<LOD	11.31
1282	7/05/2021 13:52	Eastern homestead area	Remains in-situ	30.08	62.93	9.84	11.65	7.42
1283	7/05/2021 13:53	Eastern homestead area	Remains in-situ	30.07	89.89	9.49	<LOD	10.24
1284	7/05/2021 13:54	Eastern homestead area	Remains in-situ	30.07	100.29	12.49	<LOD	14.02
1285	7/05/2021 13:55	Eastern homestead area	Remains in-situ	30.08	25.79	8.03	<LOD	9.03
1286	7/05/2021 13:55	Eastern homestead area	Remains in-situ	30.08	41.19	8.44	<LOD	9.3
1287	7/05/2021 13:56	Eastern homestead area	Remains in-situ	30.08	67.26	9.39	<LOD	10.18
1288	7/05/2021 13:57	Eastern homestead area	Remains in-situ	30.07	55.04	9.85	<LOD	10.59
1289	7/05/2021 13:58	Eastern homestead area	Remains in-situ	30.08	27.49	8.46	<LOD	9.33
1290	7/05/2021 13:58	Eastern homestead area	Remains in-situ	30.08	20.83	8.16	<LOD	9.03
1291	7/05/2021 13:59	Eastern homestead area	Remains in-situ	25.28	18.79	8.02	<LOD	8.33
1292	7/05/2021 14:00	Eastern homestead area	Remains in-situ	30.07	19.44	7.61	<LOD	8.39
1293	7/05/2021 14:00	Eastern homestead area	Remains in-situ	30.07	26.42	7.96	<LOD	8.85
1294	7/05/2021 14:01	Eastern homestead area	Remains in-situ	30.08	36.13	8.24	<LOD	9.24
1295	7/05/2021 14:02	Eastern homestead area	Remains in-situ	30.07	53.82	10.18	<LOD	11.02
1296	7/05/2021 14:03	Eastern homestead area	Remains in-situ	30.08	63.57	11.25	<LOD	12.09
1297	7/05/2021 14:03	Eastern homestead area	Remains in-situ	27.69	21.1	7.91	<LOD	8.98
1298	7/05/2021 14:04	Eastern homestead area	Remains in-situ	30.08	<LOD	11.01	<LOD	8.01
1299	7/05/2021 14:06	Eastern homestead area	Remains in-situ	30.08	47.52	9.17	<LOD	9.96
1300	7/05/2021 14:06	Eastern homestead area	Remains in-situ	30.08	44.7	8.97	<LOD	9.89
1301	7/05/2021 14:07	Eastern homestead area	Removed to Burwood with mixing	11.33	<LOD	20.4	159.82	18.64
1302	7/05/2021 14:07	Eastern homestead area	Remains in-situ	30.07	43.03	8.37	13.82	6.44
1303	7/05/2021 14:08	Eastern homestead area	Remains in-situ	30.07	58.72	10.22	<LOD	11.27
1304	7/05/2021 14:09	Eastern homestead area	Remains in-situ	30.07	74.72	11.01	<LOD	12.25
1305	7/05/2021 14:09	Eastern homestead area	Remains in-situ	30.08	68.62	12.58	<LOD	14.06
1306	7/05/2021 14:10	Eastern homestead area	Remains in-situ	30.07	55.89	11.25	<LOD	12.39
1307	7/05/2021 14:11	Eastern homestead area	Removed to Burwood	21.13	56.31	12.46	24.92	10.02
1308	7/05/2021 14:12	Eastern homestead area	Removed to Burwood	52.91	41.94	9.26	18.38	7.33
1309	7/05/2021 14:13	Eastern homestead area	Remains in-situ	30.08	54.44	10.07	<LOD	11.37
1310	7/05/2021 14:13	Eastern homestead area	Remains in-situ	30.08	43.06	10.63	<LOD	11.9
1311	7/05/2021 14:14	Eastern homestead area	Remains in-situ	20.91	23.06	7.45	<LOD	7.93
1312	7/05/2021 14:15	Eastern homestead area	Remains in-situ	30.08	45.88	8.55	<LOD	9.19
1313	7/05/2021 14:16	Eastern homestead area	Remains in-situ	30.04	37.54	8.78	10.51	6.67
1314	7/05/2021 14:16	Eastern homestead area	Remains in-situ	30.08	69.17	9.95	<LOD	10.9
1315	7/05/2021 14:17	Eastern homestead area	Remains in-situ	30.38	38.58	8.45	<LOD	9.48
1316	7/05/2021 14:18	Eastern homestead area	Remains in-situ	30.07	52.92	8.64	<LOD	9.39
1317	7/05/2021 14:19	Eastern homestead area	Remains in-situ	30.07	54.11	8.86	<LOD	9.44
5	11/05/2021 10:22	Eastern homestead area	Removed to Burwood with mixing	27.43	3907.92	153.53	357.9	116.26
6	11/05/2021 10:24	Eastern homestead area	Remains in-situ	30.07	90.51	24.16	<LOD	25.5
7	11/05/2021 10:25	Eastern homestead area	Remains in-situ	60.09	<LOD	14.19	<LOD	10.91
8	11/05/2021 10:27	Eastern homestead area	Remains in-situ	60.09	<LOD	15.78	<LOD	10.97
9	11/05/2021 10:28	Eastern homestead area	Remains in-situ	30.08	<LOD	20.67	<LOD	14.43
10	11/05/2021 10:29	Eastern homestead area	Remains in-situ	30.07	<LOD	21.92	<LOD	15.79
11	11/05/2021 10:29	Eastern homestead area	Remains in-situ	30.07	<LOD	21.25	<LOD	14.97

12	11/05/2021 10:30	Eastern homestead area	Remains in-situ	30.08	<LOD	24.33	<LOD	16.95
13	11/05/2021 10:38	Eastern homestead area	Remains in-situ	30.01	27.12	8.02	<LOD	8.53
14	11/05/2021 10:38	Eastern homestead area	Remains in-situ	27.29	16.69	7.71	<LOD	8.19
15	11/05/2021 10:39	Eastern homestead area	Remains in-situ	30.08	86.99	10.5	<LOD	11.38
16	11/05/2021 10:40	Eastern homestead area	Remains in-situ	30.07	62	9.79	<LOD	10.95
17	11/05/2021 10:41	Eastern homestead area	Remains in-situ	30.07	<LOD	10.23	<LOD	7.57
18	11/05/2021 10:42	Eastern homestead area	Remains in-situ	30.17	18.92	7.69	<LOD	8.04
19	11/05/2021 10:45	Eastern homestead area	Remains in-situ	25.29	16.57	8.13	<LOD	8.55
20	11/05/2021 10:46	Eastern homestead area	Remains in-situ	20.89	<LOD	11.94	<LOD	8.74
21	11/05/2021 10:47	Eastern homestead area	Remains in-situ	20.89	12.21	8.1	<LOD	8.45
22	11/05/2021 10:47	Eastern homestead area	Remains in-situ	30.08	<LOD	10.19	<LOD	7.2
23	11/05/2021 10:49	Eastern homestead area	Remains in-situ	30.08	39.08	8.43	<LOD	9.26
24	11/05/2021 10:50	Eastern homestead area	Remains in-situ	30.07	14.68	7.05	11.01	5.47
25	11/05/2021 10:51	Eastern homestead area	Remains in-situ	30.08	48.35	8.94	<LOD	9.88
26	11/05/2021 10:51	Eastern homestead area	Remains in-situ	27.68	20.89	7.19	<LOD	7.73
27	11/05/2021 10:52	Eastern homestead area	Remains in-situ	27.28	10.38	6.73	<LOD	7.41
28	11/05/2021 10:53	Eastern homestead area	Remains in-situ	21.3	<LOD	11.86	<LOD	8.62
29	11/05/2021 10:53	Eastern homestead area	Remains in-situ	30.07	64.6	9.85	<LOD	10.72
30	11/05/2021 10:54	Eastern homestead area	Remains in-situ	30.07	14.26	7.12	<LOD	7.6
31	11/05/2021 10:55	Eastern homestead area	Remains in-situ	24.88	18.51	8.35	<LOD	9.09
32	11/05/2021 10:55	Eastern homestead area	Remains in-situ	20.9	<LOD	11.91	<LOD	8.59
33	11/05/2021 10:56	Eastern homestead area	Remains in-situ	29.28	31.13	8.13	<LOD	9.12
34	11/05/2021 10:57	Eastern homestead area	Remains in-situ	25.68	15.7	7.86	<LOD	8.64
35	11/05/2021 10:57	Eastern homestead area	Remains in-situ	27.29	22.75	7.76	<LOD	8.62
36	11/05/2021 10:58	Eastern homestead area	Remains in-situ	30.07	20.19	7.28	<LOD	7.86
37	11/05/2021 10:59	Eastern homestead area	Remains in-situ	28.88	24.74	7.53	<LOD	8
38	11/05/2021 10:59	Eastern homestead area	Remains in-situ	21.7	16.03	8.25	<LOD	8.91
39	11/05/2021 11:00	Eastern homestead area	Remains in-situ	30.07	80.27	10.43	<LOD	11.65
40	11/05/2021 11:11	Eastern homestead area	Remains in-situ	30.07	48.63	8.87	<LOD	9.57
41	11/05/2021 11:12	Eastern homestead area	Remains in-situ	30.07	37.58	8.51	<LOD	9.29
42	11/05/2021 11:12	Eastern homestead area	Remains in-situ	30.07	48.17	8.98	<LOD	9.52
43	11/05/2021 11:14	Eastern homestead area	Removed to Burwood	26.48	630.74	26.45	<LOD	29.05
44	11/05/2021 11:15	Eastern homestead area	Remains in-situ	26.47	17.26	5.6	<LOD	5.91
45	11/05/2021 11:19	Eastern homestead area	Remains in-situ	22.5	<LOD	10.93	<LOD	8.21
46	11/05/2021 11:21	Eastern homestead area	Remains in-situ	21.3	<LOD	11.71	<LOD	8.89
47	11/05/2021 11:21	Eastern homestead area	Remains in-situ	20.9	<LOD	12.72	<LOD	8.92
48	11/05/2021 11:22	Eastern homestead area	Remains in-situ	30.07	<LOD	11.02	<LOD	8.03
49	11/05/2021 11:22	Eastern homestead area	Remains in-situ	22.49	15.2	8.49	<LOD	9.05
50	11/05/2021 11:23	Eastern homestead area	Remains in-situ	25.68	18.12	8.35	<LOD	9.03
51	11/05/2021 11:23	Eastern homestead area	Remains in-situ	23.69	14.15	8.18	<LOD	8.78
52	11/05/2021 11:24	Eastern homestead area	Remains in-situ	24.09	<LOD	11.95	<LOD	8.98
53	11/05/2021 11:25	Eastern homestead area	Remains in-situ	30.08	44.6	8.45	<LOD	9.36
54	11/05/2021 11:26	Eastern homestead area	Remains in-situ	28.88	19.62	8.38	<LOD	9.02
55	11/05/2021 11:26	Eastern homestead area	Remains in-situ	23.29	<LOD	11.85	<LOD	8.69
56	11/05/2021 11:27	Eastern homestead area	Remains in-situ	22.89	<LOD	12.25	<LOD	8.94
57	11/05/2021 11:28	Eastern homestead area	Remains in-situ	22.49	<LOD	12.39	<LOD	9.03
58	11/05/2021 11:30	Eastern homestead area	Remains in-situ	22.5	<LOD	12.66	<LOD	9.05
59	11/05/2021 11:30	Eastern homestead area	Remains in-situ	30.08	48.98	9.25	<LOD	9.97
60	11/05/2021 11:31	Eastern homestead area	Remains in-situ	20.9	<LOD	12.8	<LOD	9.14
61	11/05/2021 11:32	Eastern homestead area	Remains in-situ	27.69	<LOD	10.73	<LOD	7.78
62	11/05/2021 11:33	Eastern homestead area	Remains in-situ	30.07	54.08	9.26	<LOD	10.06
63	11/05/2021 11:34	Eastern homestead area	Remains in-situ	22.1	14.14	8.33	<LOD	9.19
64	11/05/2021 11:35	Eastern homestead area	Remains in-situ	22.49	<LOD	12.03	<LOD	9.1
65	11/05/2021 11:36	Eastern homestead area	Remains in-situ	30.07	27.66	8.01	11.95	6.17
66	11/05/2021 11:36	Eastern homestead area	Remains in-situ	29.28	13.59	7.87	<LOD	8.94
67	11/05/2021 11:37	Eastern homestead area	Remains in-situ	26.49	23.59	8.36	<LOD	9.04
68	11/05/2021 11:38	Eastern homestead area	Remains in-situ	27.29	29.7	8.45	<LOD	9.13
69	11/05/2021 11:38	Eastern homestead area	Remains in-situ	23.29	<LOD	12.36	<LOD	9.06
70	11/05/2021 11:39	Eastern homestead area	Remains in-situ	30.08	43.76	8.64	11.48	6.56
71	11/05/2021 11:40	Eastern homestead area	Remains in-situ	21.3	<LOD	12.65	<LOD	8.9
72	11/05/2021 11:40	Eastern homestead area	Remains in-situ	28.08	27.01	8.34	<LOD	8.94
73	11/05/2021 11:41	Eastern homestead area	Remains in-situ	30.07	16.87	7.58	<LOD	8.61
74	11/05/2021 11:42	Eastern homestead area	Remains in-situ	30.07	24.13	8.64	<LOD	9.01
75	11/05/2021 11:43	Eastern homestead area	Remains in-situ	23.7	15.11	8.43	<LOD	9.04
76	11/05/2021 11:43	Eastern homestead area	Remains in-situ	30.08	30.27	8.17	<LOD	8.87
77	11/05/2021 11:44	Eastern homestead area	Remains in-situ	21.69	<LOD	11.33	<LOD	8.32
78	11/05/2021 11:45	Eastern homestead area	Remains in-situ	24.49	<LOD	12.21	<LOD	9.14
79	11/05/2021 11:45	Eastern homestead area	Remains in-situ	30.08	57.17	9.85	<LOD	10.8
80	11/05/2021 11:46	Eastern homestead area	Removed to Burwood	17.25	276.25	22.41	<LOD	25.09
81	11/05/2021 11:47	Eastern homestead area	Remains in-situ	28.48	12.25	7.45	<LOD	7.97
82	11/05/2021 11:47	Eastern homestead area	Remains in-situ	30.08	38.03	8.63	<LOD	9.46
83	11/05/2021 11:48	Eastern homestead area	Remains in-situ	29.67	24.06	7.91	<LOD	8.38
84	11/05/2021 11:49	Eastern homestead area	Remains in-situ	28.07	20.12	7.88	<LOD	8.79
85	11/05/2021 11:49	Eastern homestead area	Remains in-situ	26.48	12.86	7.85	<LOD	8.27
86	11/05/2021 11:50	Eastern homestead area	Remains in-situ	23.28	<LOD	10.65	<LOD	7.97
87	11/05/2021 11:51	Eastern homestead area	Remains in-situ	28.08	23.74	8	<LOD	8.84
88	11/05/2021 11:51	Eastern homestead area	Remains in-situ	22.1	<LOD	12.09	<LOD	9.03
89	11/05/2021 11:52	Eastern homestead area	Remains in-situ	22.9	<LOD	11.67	<LOD	8.79
90	11/05/2021 11:53	Eastern homestead area	Remains in-situ	22.9	<LOD	12.52	<LOD	9.12
91	11/05/2021 11:53	Eastern homestead area	Remains in-situ	20.9	<LOD	11.85	<LOD	8.93
93	11/05/2021 11:57	Eastern homestead area	Removed to Burwood	18.51	205.9	18.68	<LOD	19.59

94	11/05/2021 11:57	Eastern homestead area	Remains in-situ	30.08	<LOD	10.51	<LOD	7.72
95	11/05/2021 11:58	Eastern homestead area	Remains in-situ	30.07	52.89	9.1	<LOD	10.05
96	11/05/2021 11:59	Eastern homestead area	Remains in-situ	24.09	17.67	8.23	<LOD	8.97
97	11/05/2021 12:00	Eastern homestead area	Remains in-situ	21.7	<LOD	12.17	<LOD	8.92
98	11/05/2021 12:02	Eastern homestead area	Remains in-situ	25.68	19.27	8.15	<LOD	8.53
99	11/05/2021 12:03	Eastern homestead area	Remains in-situ	21.7	<LOD	11.95	<LOD	8.83
100	11/05/2021 12:04	Eastern homestead area	Remains in-situ	24.09	13.92	8.54	<LOD	9.02
101	11/05/2021 12:04	Eastern homestead area	Remains in-situ	22.89	<LOD	11.96	<LOD	8.83
102	11/05/2021 12:05	Eastern homestead area	Remains in-situ	20.9	<LOD	12.43	<LOD	8.52
103	11/05/2021 12:05	Eastern homestead area	Remains in-situ	21.7	13.64	8.24	<LOD	8.98
104	11/05/2021 12:06	Eastern homestead area	Remains in-situ	24.89	17.54	8.26	<LOD	9.02
105	11/05/2021 12:07	Eastern homestead area	Remains in-situ	26.48	15.07	7.7	<LOD	8.37
106	11/05/2021 12:07	Eastern homestead area	Remains in-situ	28.88	34.39	8.43	<LOD	9.19
107	11/05/2021 12:08	Eastern homestead area	Remains in-situ	26.89	17.99	8.37	<LOD	8.86
108	11/05/2021 12:09	Eastern homestead area	Remains in-situ	30.08	21.61	7.43	<LOD	7.91
109	11/05/2021 12:09	Eastern homestead area	Remains in-situ	24.1	<LOD	12.28	<LOD	8.91
110	11/05/2021 12:10	Eastern homestead area	Remains in-situ	21.3	<LOD	11.81	<LOD	8.85
111	11/05/2021 12:10	Eastern homestead area	Remains in-situ	21.3	13.46	8.53	<LOD	8.87
112	11/05/2021 12:11	Eastern homestead area	Remains in-situ	22.89	<LOD	12	<LOD	8.98
113	11/05/2021 12:12	Eastern homestead area	Remains in-situ	25.68	13.32	8.18	<LOD	8.64
114	11/05/2021 12:12	Eastern homestead area	Remains in-situ	27.68	17.71	8.27	<LOD	9.13
115	11/05/2021 12:13	Eastern homestead area	Remains in-situ	27.69	16.58	8.03	<LOD	8.72
116	11/05/2021 12:14	Eastern homestead area	Remains in-situ	28.08	19.65	7.9	<LOD	8.71
118	11/05/2021 12:20	Eastern homestead area	Remains in-situ	36.95	58.68	8.43	<LOD	9.3
119	11/05/2021 12:21	Eastern homestead area	Remains in-situ	34.96	63.87	9.36	<LOD	10.42
120	11/05/2021 12:22	Eastern homestead area	Remains in-situ	33.35	72.6	10.35	<LOD	11.4
121	11/05/2021 12:22	Eastern homestead area	Remains in-situ	30.08	62.77	10.09	<LOD	10.86
122	11/05/2021 12:23	Eastern homestead area	Remains in-situ	30.08	52.83	9.74	<LOD	10.7
123	11/05/2021 12:24	Eastern homestead area	Remains in-situ	30.08	73.69	9.74	<LOD	10.5
148	14/05/2021 9:52	Eastern homestead area	Remains in-situ	30.07	19.6	7.42	<LOD	8.36
149	14/05/2021 9:53	Eastern homestead area	Removed to Burwood	30.07	214.55	15.02	<LOD	16.5
150	14/05/2021 9:54	Eastern homestead area	Removed to Burwood	30.08	314.09	16.87	<LOD	17.74
151	14/05/2021 9:54	Eastern homestead area	Remains in-situ	30.07	45.35	9.34	<LOD	10.01
152	14/05/2021 9:55	Eastern homestead area	Remains in-situ	24.49	18.2	8	<LOD	8.89
153	14/05/2021 9:56	Eastern homestead area	Remains in-situ	30.08	102.43	10.55	<LOD	11.39
154	14/05/2021 9:57	Eastern homestead area	Remains in-situ	30.08	47.79	9.42	<LOD	10.23
155	14/05/2021 9:58	Eastern homestead area	Removed to Burwood	30.03	139.21	13.67	<LOD	15.33
156	14/05/2021 9:58	Eastern homestead area	Removed to Burwood	26.48	421.76	20.16	<LOD	21.86
157	14/05/2021 9:59	Eastern homestead area	Removed to Burwood	29.6	607.76	21.44	83.88	16.51
158	14/05/2021 10:00	Eastern homestead area	Remains in-situ	30.07	61.85	8.53	<LOD	9.51
159	14/05/2021 10:04	Eastern homestead area	Remains in-situ	30.08	40.92	8.49	<LOD	9.07
160	14/05/2021 10:06	Eastern homestead area	Remains in-situ	28.48	16.25	7.12	<LOD	7.87
161	14/05/2021 10:27	Eastern homestead area	Remains in-situ	30.07	71.75	9.42	<LOD	10.35
162	14/05/2021 10:27	Eastern homestead area	Remains in-situ	30.07	53.02	9.79	12.63	7.46
163	14/05/2021 10:30	Eastern homestead area	Remains in-situ	16.5	44.16	10.46	<LOD	11.09
164	14/05/2021 10:38	Eastern homestead area	Remains in-situ	30.08	122.36	10.85	<LOD	11.7
165	14/05/2021 10:40	Eastern homestead area	Remains in-situ	30.08	58.89	8.77	<LOD	9.55
166	14/05/2021 10:51	Eastern homestead area	Remains in-situ	30.08	69.17	9.99	<LOD	10.61
167	14/05/2021 10:54	Eastern homestead area	Remains in-situ	20.9	19.85	8.64	<LOD	9.03
168	14/05/2021 11:04	Eastern homestead area	Remains in-situ	30.08	21.38	8.03	<LOD	8.8
169	14/05/2021 11:06	Eastern homestead area	Remains in-situ	30.07	13.54	7.7	<LOD	8.35
170	14/05/2021 11:11	Eastern homestead area	Remains in-situ	13.31	<LOD	16.15	<LOD	11.94
171	14/05/2021 11:13	Eastern homestead area	Remains in-situ	24.09	56.34	10.25	<LOD	10.64
3	28/05/2021 8:58	Eastern homestead area	Remains in-situ	30.08	<LOD	9.58	<LOD	7.05
4	28/05/2021 8:58	Eastern homestead area	Remains in-situ	30.07	<LOD	9.9	<LOD	7.15
5	28/05/2021 8:59	Eastern homestead area	Remains in-situ	30.08	<LOD	9.59	<LOD	6.82
6	28/05/2021 9:07	Eastern homestead area	Remains in-situ	30.07	26.33	7.52	<LOD	8.25
7	28/05/2021 9:07	Eastern homestead area	Remains in-situ	30.08	85.24	10.35	<LOD	11.11
8	28/05/2021 9:08	Eastern homestead area	Remains in-situ	30.08	49.39	7.88	<LOD	8.36
9	28/05/2021 9:09	Eastern homestead area	Remains in-situ	30.08	34.89	7.87	<LOD	8.71
10	28/05/2021 9:12	Eastern homestead area	Remains in-situ	30.07	36.73	7.64	8.64	5.73
11	28/05/2021 9:13	Eastern homestead area	Remains in-situ	30.08	29.87	6.27	<LOD	6.59
16	28/05/2021 9:17	Eastern homestead area	Remains in-situ	30.07	14.18	6.51	<LOD	7.14
17	28/05/2021 9:18	Eastern homestead area	Remains in-situ	30.08	31.16	7.19	<LOD	8
18	28/05/2021 9:18	Eastern homestead area	Remains in-situ	23.29	11.18	6.74	<LOD	7.31
19	28/05/2021 9:19	Eastern homestead area	Remains in-situ	30.08	13.22	6.19	<LOD	6.3
20	28/05/2021 9:20	Eastern homestead area	Remains in-situ	30.96	18.97	7.4	<LOD	8.05
22	28/05/2021 9:33	Eastern homestead area	Remains in-situ	30.16	18.48	7.89	<LOD	8.51
23	28/05/2021 9:33	Eastern homestead area	Remains in-situ	30.08	<LOD	9.96	<LOD	7.32
24	28/05/2021 9:34	Eastern homestead area	Remains in-situ	30.08	<LOD	9.53	<LOD	7
25	28/05/2021 9:35	Eastern homestead area	Remains in-situ	30.07	23.48	7.39	<LOD	7.94

Appendix E – Table of Validation Results

Table of Laboratory Results - 2 & 4 Glovers Road, Christchurch

Date of testing: 26th March 2021

Analyte	Sample Name:	VS_Y1	VS_Y2	VS_Y3	VS_Y4	VS_Y5	VS_Y6	Soil Guideline Values					
Soil Results	Lab Number:	21-14277-1	21-14277-2	21-14277-3	21-14277-4	21-14277-5	21-14277-6	Residential 10% Produce	Commercial/ Outdoor Worker	Reference	Ecological Receptors	Reference	Background ₁
	Depth (mm):	wall	wall	base	base	base	base						
Heavy Metals													
Total Recoverable Arsenic	mg/kg dry wt	9	7.1	8.8	8.5	7.3	7.7	20	70	NES	70	ANZWQ	12.58
Total Recoverable Cadmium	mg/kg dry wt	0.19	0.069	0.054	0.097	0.031	0.086	3	1,300	NES	10	ANZWQ	0.19
Total Recoverable Chromium	mg/kg dry wt	21.4	19.8	23.4	22.4	20.8	21.4	460	6,300	NES	370	ANZWQ	22.70
Total Recoverable Copper	mg/kg dry wt	19.8	15.1	15.9	18	11.1	19.9	>10,000	>10,000	NES	270	ANZWQ	20.30
Total Recoverable Lead	mg/kg dry wt	125	38	24.9	30.5	20	62	210	3,300	NES	220	ANZWQ	40.96
Total Recoverable Nickel	mg/kg dry wt	18.5	16.7	19.3	19.1	16.7	18.8	400	6,000	NEPM	52	ANZWQ	20.70
Total Recoverable Zinc	mg/kg dry wt	139	79.5	86.5	106	67.5	111	7,400	400,000	NEPM	410	ANZWQ	93.94

Date of testing: 15th April 2021

Analyte	Sample Name:	VS_Y7	VS_Y8	VS_Y9	VS_Y10	VS_Y11	VS_Y12	VS_Y13	Soil Guideline Values					
Soil Results	Lab Number:	21-17322-1	21-17322-2	21-17322-3	21-17322-4	21-17322-5	21-17322-6	21-17322-7	Residential 10% Produce	Commercial/ Outdoor Worker	Reference	Ecological Receptors	Reference	Background ₁
	Depth (mm):	wall	wall	wall	wall	wall	wall	wall						
Heavy Metals														
Total Recoverable Arsenic	mg/kg dry wt	6.9	6.9	11	5	7.7	13	8.7	20	70	NES	70	ANZWQ	12.58
Total Recoverable Cadmium	mg/kg dry wt	0.07	0.04	0.17	0.039	0.047	0.23	0.11	3	1,300	NES	10	ANZWQ	0.19
Total Recoverable Chromium	mg/kg dry wt	19.7	19.2	20	13.7	18.5	18.8	18.1	460	6,300	NES	370	ANZWQ	22.70
Total Recoverable Copper	mg/kg dry wt	14.2	10.9	19.8	8.64	10.9	35	16.2	>10,000	>10,000	NES	270	ANZWQ	20.30
Total Recoverable Lead	mg/kg dry wt	61	22	159	18.2	18	59	34.4	210	3,300	NES	220	ANZWQ	40.96
Total Recoverable Nickel	mg/kg dry wt	16.5	16.1	14	10.6	15.6	12.7	13.8	400	6,000	NEPM	52	ANZWQ	20.70
Total Recoverable Zinc	mg/kg dry wt	101	63.5	139	55.8	58.7	125	115	7,400	400,000	NEPM	410	ANZWQ	93.94

Date of testing: 14th May 2021

Analyte	Sample Name:	VS_Y14	VS_Y15	VS_Y16	VS_Y17	VS_Y18	VS_Y19	VS_Y20	VS_Y21	VS_Y22	VS_Y23	Soil Guideline Values					
Soil Results	Lab Number:	21-22256-1	21-22256-2	21-22256-3	21-22256-4	21-22256-5	21-22256-6	21-22256-7	21-22256-8	21-22256-9	21-22256-10	Residential 10% Produce	Commercial/ Outdoor Worker	Reference	Ecological Receptors	Reference	Background ₁
	Depth (mm):	wall	wall	base	wall	wall	wall	wall	base	base	wall						
Heavy Metals																	
Total Recoverable Arsenic	mg/kg dry wt	13.9	7	8.7	12	6.1	5	4.7	4.7	4.5	7.4	20	70	NES	70	ANZWQ	12.58
Total Recoverable Cadmium	mg/kg dry wt	0.29	0.26	0.763	0.763	0.18	0.13	0.057	0.032	0.03	0.3	3	1,300	NES	10	ANZWQ	0.19
Total Recoverable Chromium	mg/kg dry wt	20.3	20.5	25.5	20.3	18.7	17.4	15.2	16.4	14.3	16.9	460	6,300	NES	370	ANZWQ	22.70
Total Recoverable Copper	mg/kg dry wt	25.2	21.4	30.4	22.8	15.6	17.4	8.84	7.1	6.9	14.7	>10,000	>10,000	NES	270	ANZWQ	20.30
Total Recoverable Lead	mg/kg dry wt	127	67	285	102	84	40	19	14	13	55.9	210	3,300	NES	220	ANZWQ	40.96
Total Recoverable Nickel	mg/kg dry wt	17	17.1	25.6	17.2	14.9	13.2	13	13.8	12.2	14.6	400	6,000	NEPM	52	ANZWQ	20.70
Total Recoverable Zinc	mg/kg dry wt	249	137	513	461	115	78.6	58.9	51.7	60.3	192	7,400	400,000	NEPM	410	ANZWQ	93.94

Date of testing: 28th May 2021

Analyte	Sample Name:	VS24	VS25	VS26	VS27	VS28	VS29	Soil Guideline Values					
Soil Results	Lab Number:	21-24529-1	21-24529-2	21-24529-3	21-24529-4	21-24529-5	21-24529-6	Residential 10% Produce	Commercial/ Outdoor Worker	Reference	Ecological Receptors	Reference	Background ₁
	Depth (mm):	base	wall	base	wall	wall	wall						
Heavy Metals													
Total Recoverable Arsenic	mg/kg dry wt	5	6.2	5.6	6	7.4	5.7	20	70	NES	70	ANZWQ	12.58
Total Recoverable Cadmium	mg/kg dry wt	0.057	0.16	0.036	0.039	0.14	0.045	3	1,300	NES	10	ANZWQ	0.19
Total Recoverable Chromium	mg/kg dry wt	15.9	18.4	17.2	17.6	19.8	17.5	460	6,300	NES	370	ANZWQ	22.70
Total Recoverable Copper	mg/kg dry wt	8.9	16.2	9.36	9.89	13.4	8.81	>10,000	>10,000	NES	270	ANZWQ	20.30
Total Recoverable Lead	mg/kg dry wt	20	74	16.9	18	48	17	210	3,300	NES	220	ANZWQ	40.96
Total Recoverable Nickel	mg/kg dry wt	13.4	13.2	14.7	14.9	15.7	14.8	400	6,000	NEPM	52	ANZWQ	20.70
Total Recoverable Zinc	mg/kg dry wt	65.4	102	52.7	56	118	55.1	7,400	400,000	NEPM	410	ANZWQ	93.94

Indicates result exceeds 'residential 10% produce' guideline value
Indicates result exceeds ecological guideline value
Indicates result exceeds background value for soil type

NES - National Environmental Standard for Assessing and Managing Contaminants in Soils, MfE
NEPM - National Environmental Protection Measures 2013, Formerly NEPC, Australia
ANZWQ - Australian and New Zealand - Guidelines for Fresh and Marine Water Quality (online)- Sediment GV-high
₁ Concentrations for 'Regional, Recent' soil group from Background Concentrations in Canterbury soils, Tonkin and Taylor, July 2007

Table of Laboratory Results - 2 & 4 Glovers Road, Christchurch

Asbestos Delineation Sampling

Date of testing: 1st March 2021

Asbestos Presence Analysis			Description of Asbestos Form	Materials Detected	ACM	Fibrous Asbestos + Asbestos Fines
Sample Name:	Lab Number	Depth (mm)			w/w %	w/w %
Bulk 1	21-08987-1	0	Chrysotile (White Asbestos)	Fibre cement sheet	N/A	N/A
Bulk 2	21-08987-2	0	Chrysotile (White Asbestos) Amosite (Brown Asbestos) Crocidolite (Blue Asbestos)	Fibre cement sheet	N/A	N/A
Asbestos in Soil						
A_D1	21-08987-3	0-100	No asbestos detected	-	-	-
A_D2	21-08987-4	0-100	No asbestos detected	-	-	-
A_D3	21-08987-5	0-100	No asbestos detected	-	-	-
A_D4	21-08987-6	0-100	No asbestos detected	-	-	-
A_D5	21-08987-7	0-100	No asbestos detected	-	-	-
A_D6	21-08987-8	0-100	No asbestos detected	-	-	-
A_D10	21-08987-12	0-100	No asbestos detected	-	-	-
A_D11	21-08987-13	0-100	Chrysotile (White Asbestos)	Fibre cement sheet, free fibres	0.001	0.002
A_D12	21-08987-14	0-100	Chrysotile (White Asbestos)	Fibre cement sheet, free fibres	0.335	0.009
A_D13	21-08987-15	0-100	No asbestos detected	-	-	-
A_D14	21-08987-16	0-100	No asbestos detected	-	-	-
A_D15	21-08987-17	0-100	No asbestos detected	-	-	-
A_D16	21-08987-18	0-100	No asbestos detected	-	-	-
A_D17	21-08987-19	0-100	Chrysotile (White Asbestos) Amosite (Brown Asbestos)	Fibre cement sheet, free fibres	0.010	0.037
A_D18	21-08987-20	0-100	Chrysotile (White Asbestos) Amosite (Brown Asbestos)	Fibre cement sheet	0.129	<0.001
A_D19	21-08987-21	0-100	No asbestos detected	-	-	-
A_D20	21-10466-1	0-100	No asbestos detected	-	-	-
A_D22	21-10466-2	0-100	No asbestos detected	-	-	-
A_D23	21-10466-3	0-100	Chrysotile (White Asbestos)	Free fibres	<0.001	<0.001
A_D24	21-10466-4	0-100	No asbestos detected	-	-	-
Soil Guideline values	Residential		-	-	0.01	0.001 (all uses)
	Commercial/Outdoor Worker		-	-	0.05	0.001 (all uses)
	Reference		-	-	NZGAMAS	NZGAMAS

Asbestos Validation Sampling

Date of testing: 1st & 15th April 2021

Asbestos in Soil			Description of Asbestos Form	Materials Detected	ACM	Fibrous Asbestos + Asbestos Fines
Sample Name:	Lab Number	Depth (mm)			w/w %	w/w %
VS_A1	21-15109-1	base	No asbestos detected	-	-	-
VS_A2	21-15109-2	wall	No asbestos detected	-	-	-
VS_A3	21-15109-3	wall	No asbestos detected	-	-	-
VS_A4	21-15109-4	wall	No asbestos detected	-	-	-
VS_A5	21-15109-5	wall	No asbestos detected	-	-	-
VS_A6	21-15109-6	wall	No asbestos detected	-	-	-
VS_A7	21-15109-7	wall	Chrysotile (White Asbestos) Amosite (Brown Asbestos) Crocidolite (Blue Asbestos)	Fibre cement sheet	0.009	<0.001
VS_A8	21-15109-8	wall	No asbestos detected	-	-	-
VS_A9	21-15109-9	wall	No asbestos detected	-	-	-
VS_A10	21-15109-10	base	No asbestos detected	-	-	-
VS_A11	21-15109-11	base	Chrysotile (White Asbestos)	Free Fibres	<0.001	<0.001
VS_A12	21-15109-12	base	No asbestos detected	-	-	-
VS_A13	21-15109-13	base	No asbestos detected	-	-	-
VS_A14	21-15109-14	base	No asbestos detected	-	-	-
VS_A15	21-15109-15	base	No asbestos detected	-	-	-
VS_A16	21-15109-16	base	No asbestos detected	-	-	-
VS_A17	21-15109-17	base	No asbestos detected	-	-	-
VS_A18	21-15109-18	base	No asbestos detected	-	-	-
VS_A19	21-17097-1	base	No asbestos detected	-	-	-
VS_A20	21-17097-2	base	No asbestos detected	-	-	-
VS_A21	21-17097-3	base	No asbestos detected	-	-	-
VS_A22	21-17097-4	0-50mm	No asbestos detected	-	-	-
VS_A23	21-17097-5	0-50mm	No asbestos detected	-	-	-
Soil Guideline values	Residential		-	-	0.01	0.001 (all uses)
	Commercial/Outdoor Worker		-	-	0.05	0.001 (all uses)
	Reference		-	-	NZGAMAS	NZGAMAS

Indicates result exceeds residential guideline value

NZGAMAS - New Zealand Guidelines for Assessing and Managing Asbestos in Soil

Appendix F - Laboratory Reports



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviron.co.nz

Lab Reference: 21-08987
Submitted by: Fran Hobkirk
Date Received: 1/03/2021
Testing Initiated: 2/03/2021
Date Completed: 2/03/2021
Order Number: 475
Reference:

Sampling Site: 2 + 4 Glovers Road
Description of Work: Bulk/PA500 - 2 + 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos Fibres in Bulk (Qualitative)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-08987-1	Bulk 1		Bulk Materials (30 x 18 x 6 mm)	1/03/2021	2/03/2021
21-08987-2	Bulk 2		Bulk Materials (60 x 25 x 7 mm)	1/03/2021	2/03/2021

Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled.

Analysis Results

Laboratory ID	Client Sample ID	Sample Layers	Fibre Types	Asbestos (Present / Absent)
21-08987-1	Bulk 1	L1 - Fibre Cement Sheet L2 - Surface Debris	Chrysotile (White Asbestos) Organic Fibres	Present
21-08987-2	Bulk 2	L1 - Fibre Cement Sheet L2 - Surface Debris	Chrysotile (White Asbestos) Amosite (Brown Asbestos) Crocidolite (Blue Asbestos) Organic Fibres	Present

Information in the above table supplied by the client: Client Sample ID.

Asbestos Fibres in Bulk (Qualitative) Approver:

Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Bulk Materials (Qualitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with the guidelines of AS4964-2004 Method for the qualitative identification of asbestos in bulk samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 3: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviron.co.nz

Lab Reference: 21-08987
Submitted by: Fran Hobkirk
Date Received: 1/03/2021
Testing Initiated: 2/03/2021
Date Completed: 3/03/2021
Order Number: 475
Reference:

Sampling Site: 2 + 4 Glovers Road
Description of Work: Bulk/PA500 - 2 + 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Qualitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-08987-3	A_D1 0-100		Soil	1/03/2021	3/03/2021
21-08987-4	A_D2 0-100		Soil	1/03/2021	2/03/2021
21-08987-5	A_D3 0-100		Soil	1/03/2021	2/03/2021
21-08987-6	A_D4 0-100		Soil	1/03/2021	2/03/2021
21-08987-7	A_D5 0-100		Soil	1/03/2021	2/03/2021
21-08987-8	A_D6 0-100		Soil	1/03/2021	2/03/2021
21-08987-12	A_D10 0-100		Soil	1/03/2021	2/03/2021
21-08987-15	A_D13 0-100		Soil	1/03/2021	2/03/2021
21-08987-16	A_D14 0-100		Soil	1/03/2021	2/03/2021
21-08987-17	A_D15 0-100		Soil	1/03/2021	2/03/2021
21-08987-18	A_D16 0-100		Soil	1/03/2021	2/03/2021
21-08987-21	A_D19 0-100		Soil	1/03/2021	2/03/2021

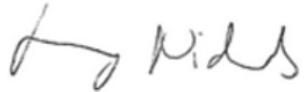
Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled.

Analysis Results

Laboratory ID	Client Sample ID	ACM Weight*	ACM Types*	Fibre Types	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
<i>Units</i>		<i>g</i>				
21-08987-3	A_D1 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-08987-4	A_D2 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-08987-5	A_D3 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-08987-6	A_D4 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-08987-7	A_D5 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-08987-8	A_D6 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-08987-12	A_D10 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-08987-15	A_D13 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-08987-16	A_D14 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-08987-17	A_D15 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-08987-18	A_D16 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-08987-21	A_D19 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Qualitative-500) Approver:



Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Soil (Qualitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in bulk samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviro.co.nz

Lab Reference: 21-08987
Submitted by: Fran Hobkirk
Date Received: 1/03/2021
Testing Initiated: 2/03/2021
Date Completed: 3/03/2021
Order Number: 475
Reference:

Sampling Site: 2 + 4 Glovers Road
Description of Work: Bulk/PA500 - 2 + 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Semi-Quantitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-08987-13	A_D11 0-100		Soil	1/03/2021	2/03/2021
21-08987-14	A_D12 0-100		Soil	1/03/2021	2/03/2021
21-08987-19	A_D17 0-100		Soil	1/03/2021	2/03/2021
21-08987-20	A_D18 0-100		Soil	1/03/2021	2/03/2021

Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled

Analysis Results (Summary)

Laboratory ID	Client Sample ID	Fibre Types	Sample Weight as Received	Moisture Content	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
21-08987-13	A_D11 0-100	Chrysotile (White Asbestos) Organic Fibres	705.5	7.6	Absent	Present
21-08987-14	A_D12 0-100	Chrysotile (White Asbestos) Organic Fibres Synthetic Mineral Fibres	911.2	8.3	Absent	Present
21-08987-19	A_D17 0-100	Chrysotile (White Asbestos) Amosite (Brown Asbestos) Organic Fibres	627.0	7.4	Absent	Present
21-08987-20	A_D18 0-100	Chrysotile (White Asbestos) Amosite (Brown Asbestos) Organic Fibres	550.8	15.3	Absent	Present

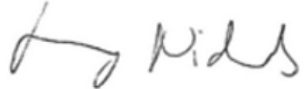
Information in the above table supplied by the client: Client Sample ID

Analysis Results (Size Fraction Breakdown)

Laboratory ID	Client Sample ID	Fraction Size	Fraction Weight*	AF/FA Weight*	ACM Weight*	ACM Content*	Asbestos Matrix	Asbestos Weight*	W/W% Asbestos*
<i>Units Reporting Limit</i>			g	g	g	%		g 0.0001	W/W% 0.001
21-08987-13	A_D11 0-100	>10mm	85.99	0.0000	0.0000	0	No Asbestos Detected	<0.0001	0.001 (ACM) 0.002 (AF/FA)
		2-10mm	153.15	0.0056	0.0638	15	Fibre Cement Sheet	0.0152	
		<2mm	412.48	0.0026	-	-	Free Fibres	0.0101	
21-08987-14	A_D12 0-100	>10mm	212.73	0.0005	17.9135	15	Free Fibres Fibre Cement Sheet	2.6875	0.335 (ACM) 0.009 (AF/FA)
		2-10mm	215.62	0.0047	0.7287	15	Free Fibres Fibre Cement Sheet	0.1140	
		<2mm	407.17	0.0181	-	-	Free Fibres	0.0690	
21-08987-19	A_D17 0-100	>10mm	51.75	0.0000	0.0000	0	No Asbestos Detected	<0.0001	0.010 (ACM) 0.037 (AF/FA)
		2-10mm	144.10	0.0000	0.3730	15	Fibre Cement Sheet	0.0560	
		<2mm	385.04	0.0591	-	-	Free Fibres	0.2177	
21-08987-20	A_D18 0-100	>10mm	22.53	0.0000	3.7422	15	Fibre Cement Sheet	0.5613	0.129 (ACM) <0.001 (AF/FA)
		2-10mm	82.34	0.0000	0.2609	15	Fibre Cement Sheet	0.0391	
		<2mm	361.74	0.0000	-	-	No Asbestos Detected	<0.0001	

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Semi-Quantitative-500) Approver:



Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Soil (Semi-Quantitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in soil samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviro.co.nz

Lab Reference: 21-10466
Submitted by: Fran Hobkirk
Date Received: 9/03/2021
Testing Initiated: 10/03/2021
Date Completed: 10/03/2021
Order Number:
Reference: 475

Sampling Site: 2 + 4 Glovers Road
Description of Work: PA500 - 2 + 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Qualitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-10466-1	A_D20 0-100		Soil	1/03/2021	10/03/2021
21-10466-2	A_D22 0-100		Soil	1/03/2021	10/03/2021
21-10466-4	A_D24 0-100		Soil	1/03/2021	10/03/2021

Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled.

Analysis Results

Laboratory ID	Client Sample ID	ACM Weight*	ACM Types*	Fibre Types	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
		Units	g			
21-10466-1	A_D20 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-10466-2	A_D22 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-10466-4	A_D24 0-100	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Qualitative-500) Approver:

Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Soil (Qualitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in bulk samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviron.co.nz

Lab Reference: 21-10466
Submitted by: Fran Hobkirk
Date Received: 9/03/2021
Testing Initiated: 10/03/2021
Date Completed: 10/03/2021
Order Number:
Reference: 475

Sampling Site: 2 + 4 Glovers Road
Description of Work: PA500 - 2 + 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Semi-Quantitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-10466-3	A_D23 0-100		Soil	1/03/2021	10/03/2021

Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled

Analysis Results (Summary)

Laboratory ID	Client Sample ID	Fibre Types	Sample Weight as Received	Moisture Content	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
21-10466-3	A_D23 0-100	Chrysotile (White Asbestos) Organic Fibres	594.1	15.8	Absent	Present

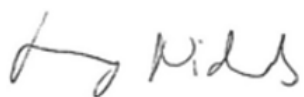
Information in the above table supplied by the client: Client Sample ID

Analysis Results (Size Fraction Breakdown)

Laboratory ID	Client Sample ID	Fraction Size	Fraction Weight*	AF/FA Weight*	ACM Weight*	ACM Content*	Asbestos Matrix	Asbestos Weight*	W/W% Asbestos*
		<i>Units Reporting Limit</i>	g	g	g	%		g 0.0001	W/W% 0.001
21-10466-3	A_D23 0-100	>10mm	0.00	0.0000	0.0000	0	No Asbestos Detected	<0.0001	<0.001 (ACM)
		2-10mm	10.86	0.0000	0.0000	0	No Asbestos Detected	<0.0001	<0.001 (AF/FA)
		<2mm	489.32	0.0001	-	-	Free Fibres	0.0005	

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Semi-Quantitative-500) Approver:



Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Soil (Semi-Quantitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in soil samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671

Attention: Fran Hobkirk
Phone: 0210527731
Email: fran@mallochenviron.co.nz

Sampling Site: 2 Glovers Road

Lab Reference: 21-14277
Submitted by: Fran Hobkirk
Date Received: 29/03/2021
Testing Initiated: 29/03/2021
Date Completed: 31/03/2021
Order Number:
Reference: 475

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Heavy Metals in Soil

Client Sample ID			VS_Y1	VS_Y2	VS_Y3	VS_Y4	VS_Y5
Date Sampled			26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021
Analyte	Unit	Reporting Limit	21-14277-1	21-14277-2	21-14277-3	21-14277-4	21-14277-5
Arsenic	mg/kg dry wt	0.125	9.0	7.1	8.8	8.5	7.3
Cadmium	mg/kg dry wt	0.005	0.19	0.069	0.054	0.097	0.031
Chromium	mg/kg dry wt	0.125	21.4	19.8	23.4	22.4	20.8
Copper	mg/kg dry wt	0.075	19.8	15.1	15.9	18.0	11.1
Lead	mg/kg dry wt	0.25	125	38.0	24.9	30.5	20.4
Nickel	mg/kg dry wt	0.05	18.5	16.7	19.3	19.1	16.7
Zinc	mg/kg dry wt	0.05	139	79.5	86.5	106	67.5

Heavy Metals in Soil

Client Sample ID			VS_Y6
Date Sampled			26/03/2021
Analyte	Unit	Reporting Limit	21-14277-6
Arsenic	mg/kg dry wt	0.125	7.7
Cadmium	mg/kg dry wt	0.005	0.086
Chromium	mg/kg dry wt	0.125	21.4
Copper	mg/kg dry wt	0.075	19.9
Lead	mg/kg dry wt	0.25	62.0
Nickel	mg/kg dry wt	0.05	18.8
Zinc	mg/kg dry wt	0.05	111

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.

Method Summary

Elements in Soil Samples dried and passed through a 2 mm sieve followed by acid digestion and analysis by ICP-MS. In accordance with in-house procedure based on US EPA method 200.8.



Emily Hanna, B.Sc.

Trace Elements Team Leader



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviro.co.nz

Lab Reference: 21-15109
Submitted by: Fran Hobkirk
Date Received: 01/04/2021
Testing Initiated: 7/04/2021
Date Completed: 9/04/2021
Order Number:
Reference: 475

Sampling Site: 4 Glovers Road
Description of Work: PA500 - 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Qualitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-15109-1	VS_A1 Base		Soil	01/04/2021	07/04/2021
21-15109-2	VS_A2 Wall		Soil	01/04/2021	07/04/2021
21-15109-3	VS_A3 Wall		Soil	01/04/2021	08/04/2021
21-15109-4	VS_A4 Wall		Soil	01/04/2021	08/04/2021
21-15109-5	VS_A5 Wall		Soil	01/04/2021	08/04/2021
21-15109-6	VS_A6 Wall		Soil	01/04/2021	08/04/2021
21-15109-8	VS_A8 Wall		Soil	01/04/2021	08/04/2021
21-15109-9	VS_A9 Wall		Soil	01/04/2021	09/04/2021
21-15109-10	VS_A10 Base		Soil	01/04/2021	09/04/2021
21-15109-12	VS_A12 Base		Soil	01/04/2021	09/04/2021
21-15109-13	VS_A13 Base		Soil	01/04/2021	08/04/2021
21-15109-14	VS_A14 Base		Soil	01/04/2021	09/04/2021
21-15109-15	VS_A15 Base		Soil	01/04/2021	09/04/2021
21-15109-16	VS_A16 Base		Soil	01/04/2021	09/04/2021
21-15109-17	VS_A17 Base		Soil	01/04/2021	09/04/2021
21-15109-18	VS_A18 Base		Soil	01/04/2021	09/04/2021

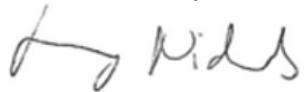
Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled.

Analysis Results

Laboratory ID	Client Sample ID	ACM Weight*	ACM Types*	Fibre Types	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
<i>Units</i>		<i>g</i>				
21-15109-1	VS_A1 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-2	VS_A2 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-3	VS_A3 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-4	VS_A4 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-5	VS_A5 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-6	VS_A6 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-8	VS_A8 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-9	VS_A9 Wall	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-10	VS_A10 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-12	VS_A12 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-13	VS_A13 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-14	VS_A14 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres Synthetic Mineral Fibres	Absent	Absent
21-15109-15	VS_A15 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-16	VS_A16 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-17	VS_A17 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-15109-18	VS_A18 Base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Qualitative-500) Approver:



Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Soil (Qualitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in bulk samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviro.co.nz

Lab Reference: 21-15109
Submitted by: Fran Hobkirk
Date Received: 01/04/2021
Testing Initiated: 7/04/2021
Date Completed: 9/04/2021
Order Number:
Reference: 475

Sampling Site: 4 Glovers Road
Description of Work: PA500 - 4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Semi-Quantitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-15109-7	VS_A7 Wall		Soil	01/04/2021	08/04/2021
21-15109-11	VS_A11 Base		Soil	01/04/2021	08/04/2021

Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled

Analysis Results (Summary)

Laboratory ID	Client Sample ID	Fibre Types	Sample Weight as Received	Moisture Content	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
21-15109-7	VS_A7 Wall	Chrysotile (White Asbestos) Amosite (Brown Asbestos) Crocidolite (Blue Asbestos) Organic Fibres	673.9	10.5	Absent	Present
21-15109-11	VS_A11 Base	Chrysotile (White Asbestos) Organic Fibres Synthetic Mineral Fibres	777.3	13.3	Absent	Present

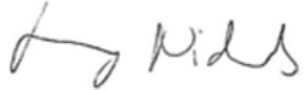
Information in the above table supplied by the client: Client Sample ID

Analysis Results (Size Fraction Breakdown)

Laboratory ID	Client Sample ID	Fraction Size	Fraction Weight*	AF/FA Weight*	ACM Weight*	ACM Content*	Asbestos Matrix	Asbestos Weight*	W/W% Asbestos*
<i>Units Reporting Limit</i>			g	g	g	%		g 0.0001	W/W% 0.001
21-15109-7	VS_A7 Wall	>10mm	8.19	0.0000	0.3660	15	Fibre Cement Sheet	0.0549	0.009 (ACM) <0.001 (AF/FA)
		2-10mm	33.97	0.0000	0.0000	0	No Asbestos Detected	<0.0001	
		<2mm	561.18	0.0000	-	-	No Asbestos Detected	<0.0001	
21-15109-11	VS_A11 Base	>10mm	70.50	0.0002	0.0000	0	Free Fibres	0.0002	<0.001 (ACM) <0.001 (AF/FA)
		2-10mm	140.76	0.0021	0.0000	0	Free Fibres	0.0021	
		<2mm	462.78	0.0006	-	-	Free Fibres	0.0027	

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Semi-Quantitative-500) Approver:



Jenny Nichols, M.Sc.
Senior Technician

Method Summary

Asbestos Fibres in Soil (Semi-Quantitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in soil samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671
Attention: Fran Hobkirk
Phone: 021 0527 731
Email: fran@mallochenviron.co.nz

Lab Reference: 21-17097
Submitted by: Fran Hobkirk
Date Received: 15/04/2021
Testing Initiated: 22/04/2021
Date Completed: 22/04/2021
Order Number:
Reference: 475

Sampling Site: 2 Glovers Road
Description of Work: PA500 - 2 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Asbestos in Soil (Qualitative-500)

Sample Details

Laboratory ID	Client Sample ID	Sample Location	Sample Description	Date Sampled	Date Analysed
21-17097-1	VS_A19 base		Soil	15/04/2021	22/04/2021
21-17097-2	VS_A20 base		Soil	15/04/2021	22/04/2021
21-17097-3	VS_A21 base		Soil	15/04/2021	22/04/2021
21-17097-4	VS_A22 0-50		Soil	15/04/2021	22/04/2021
21-17097-5	VS_A23 0-50		Soil	15/04/2021	22/04/2021

Information in the above table supplied by the client: Client Sample ID, Sample Location, Date Sampled.

Analysis Results

Laboratory ID	Client Sample ID	ACM Weight*	ACM Types*	Fibre Types	Trace Asbestos (Presence / Absence)	Asbestos (Presence / Absence)
	Units	g				
21-17097-1	VS_A19 base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-17097-2	VS_A20 base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-17097-3	VS_A21 base	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-17097-4	VS_A22 0-50	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent
21-17097-5	VS_A23 0-50	0.0000	No Asbestos Detected	Asbestos NOT Detected. Organic Fibres	Absent	Absent

Information in the above table supplied by the client: Client Sample ID

Asbestos in Soil (Qualitative-500) Approver:

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.


Alice Knowles
Technician

Method Summary

Asbestos Fibres in Soil (Qualitative)

Sample analysis was performed using polarised light microscopy with dispersion staining in accordance with AS4964-2004 Method for the qualitative identification of asbestos in bulk samples.

Note 1: The reporting limit for this analysis is 0.1g/kg (0.01%) by application of polarised light microscopy, dispersion staining and trace analysis techniques.

Note 2: Trace asbestos is indicative that freely liberated respirable fibres are present and dust control measures should be implemented or increased on site. This is not the sole indicator for the friable nature of the asbestos present.

Note 3: If mineral fibres of unknown type are detected, by PLM and dispersion staining, these may or may not be asbestos fibres. To confirm the identity of this fibre, another independent analytical technique such as XRD analysis is advised.

Note 4: The laboratory does not take responsibility for the sampling procedure or accuracy of sample location description.



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
RD1 Christchurch 7671

Attention: Fran Hobkirk
Phone: 021 052 7731
Email: fran@mallochenviro.co.nz

Sampling Site: 2 Glovers Road

Lab Reference: 21-17322
Submitted by: Fran Hobkirk
Date Received: 16/04/2021
Testing Initiated: 16/04/2021
Date Completed: 21/04/2021
Order Number:
Reference: 475

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Heavy Metals in Soil

Client Sample ID			VS_Y7 wall	VS_Y8 wall	VS_Y9 wall	VS_Y10 wall	VS_Y11 wall
Date Sampled			15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Analyte	Unit	Reporting Limit	21-17322-1	21-17322-2	21-17322-3	21-17322-4	21-17322-5
Arsenic	mg/kg dry wt	0.125	6.9	6.9	11	5.0	7.7
Cadmium	mg/kg dry wt	0.005	0.070	0.040	0.17	0.039	0.047
Chromium	mg/kg dry wt	0.125	19.7	19.2	20.0	13.7	18.5
Copper	mg/kg dry wt	0.075	14.2	10.9	19.8	8.64	10.9
Lead	mg/kg dry wt	0.25	61.0	22.0	159	18.2	17.7
Nickel	mg/kg dry wt	0.05	16.5	16.1	14.0	10.6	15.6
Zinc	mg/kg dry wt	0.05	101	63.5	139	55.8	58.7

Heavy Metals in Soil

Client Sample ID			VS_Y12 wall	VS_Y13 wall
Date Sampled			15/04/2021	15/04/2021
Analyte	Unit	Reporting Limit	21-17322-6	21-17322-7
Arsenic	mg/kg dry wt	0.125	13.0	8.7
Cadmium	mg/kg dry wt	0.005	0.23	0.11
Chromium	mg/kg dry wt	0.125	18.8	18.1
Copper	mg/kg dry wt	0.075	35.0	16.2
Lead	mg/kg dry wt	0.25	59.1	34.4
Nickel	mg/kg dry wt	0.05	12.7	13.8
Zinc	mg/kg dry wt	0.05	125	115

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.

Method Summary

Elements in Soil Samples dried and passed through a 2 mm sieve followed by acid digestion and analysis by ICP-MS. In accordance with in-house procedure based on US EPA method 200.8.



Emily Hanna, B.Sc.
Trace Elements Team Leader



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671

Attention: Fran Hobkirk
Phone: 0210527731
Email: fran@mallochenviron.co.nz

Lab Reference: 21-22256
Submitted by: Fran Hobkirk
Date Received: 17/05/2021
Testing Initiated: 17/05/2021
Date Completed: 19/05/2021
Order Number:
Reference: 475

Sampling Site: 2+4 Glovers Road

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Heavy Metals in Soil

Client Sample ID			VS_Y14 Wall	VS_Y15 Wall	VS_Y16 Base	VS_Y17 Wall	VS_Y18 Wall
Date Sampled			14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Analyte	Unit	Reporting Limit	21-22256-1	21-22256-2	21-22256-3	21-22256-4	21-22256-5
Arsenic	mg/kg dry wt	0.125	13.9	7.0	8.7	12	6.1
Cadmium	mg/kg dry wt	0.005	0.29	0.26	0.763	0.763	0.18
Chromium	mg/kg dry wt	0.125	20.3	20.5	25.5	20.3	18.7
Copper	mg/kg dry wt	0.075	25.2	21.4	30.4	22.8	15.6
Lead	mg/kg dry wt	0.25	127	67.0	285	102	84.3
Nickel	mg/kg dry wt	0.05	17.0	17.1	25.6	17.2	14.9
Zinc	mg/kg dry wt	0.05	249	137	513	461	115

Heavy Metals in Soil

Client Sample ID			VS_Y19 Wall	VS_Y20 Wall	VS_Y21 Base	VS_Y22 Base	VS_Y23 Wall
Date Sampled			14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Analyte	Unit	Reporting Limit	21-22256-6	21-22256-7	21-22256-8	21-22256-9	21-22256-10
Arsenic	mg/kg dry wt	0.125	5.0	4.7	4.7	4.5	7.4
Cadmium	mg/kg dry wt	0.005	0.13	0.057	0.032	0.030	0.30
Chromium	mg/kg dry wt	0.125	17.4	15.2	16.4	14.3	16.9
Copper	mg/kg dry wt	0.075	17.4	8.84	7.1	6.9	14.7
Lead	mg/kg dry wt	0.25	40.1	19.3	13.6	13.0	55.9
Nickel	mg/kg dry wt	0.05	13.2	13.0	13.8	12.2	14.6
Zinc	mg/kg dry wt	0.05	78.6	58.9	51.7	60.3	192

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.

Heavy Metals in Soil

Client Sample ID			VS18 Wall	VS19 Wall	VS20 Wall	VS21 Base	VS22 Base
Date Sampled			11/05/2021	11/05/2021	11/05/2021	14/05/2021	14/05/2021
Analyte	Unit	Reporting Limit	21-22256-11	21-22256-12	21-22256-13	21-22256-14	21-22256-15
Arsenic	mg/kg dry wt	0.125	16.3	19.1	20.9	1.4	1.7
Cadmium	mg/kg dry wt	0.005	0.11	0.15	0.11	0.022	0.026
Chromium	mg/kg dry wt	0.125	14.9	16.2	16.3	13.1	13.3
Copper	mg/kg dry wt	0.075	7.62	10.6	8.93	6.2	6.0
Lead	mg/kg dry wt	0.25	16.4	18.0	18.1	10.5	11.1
Nickel	mg/kg dry wt	0.05	12.5	13.2	13.6	11.1	11.0
Zinc	mg/kg dry wt	0.05	52.1	60.1	53.9	42.3	41.2

Heavy Metals in Soil

Client Sample ID			VS23 Base	VS24 Base	VS25 Base	VS26 Wall	VS27 Wall
Date Sampled			14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Analyte	Unit	Reporting Limit	21-22256-16	21-22256-17	21-22256-18	21-22256-19	21-22256-20
Arsenic	mg/kg dry wt	0.125	1.6	1.5	2.1	11	16.8
Cadmium	mg/kg dry wt	0.005	0.024	0.031	0.033	0.092	0.10
Chromium	mg/kg dry wt	0.125	13.0	14.6	14.5	16.0	16.7
Copper	mg/kg dry wt	0.075	5.5	7.1	6.2	7.4	9.16
Lead	mg/kg dry wt	0.25	9.63	12.7	13.8	16.0	17.3
Nickel	mg/kg dry wt	0.05	10.5	12.3	11.3	12.9	13.6
Zinc	mg/kg dry wt	0.05	27.6	46.8	53.6	47.7	53.5

Heavy Metals in Soil

Client Sample ID			VS28 Base	VS29 Wall
Date Sampled			14/05/2021	14/05/2021
Analyte	Unit	Reporting Limit	21-22256-21	21-22256-22
Arsenic	mg/kg dry wt	0.125	2.7	14.8
Cadmium	mg/kg dry wt	0.005	0.023	0.12
Chromium	mg/kg dry wt	0.125	13.8	15.4
Copper	mg/kg dry wt	0.075	5.8	8.59
Lead	mg/kg dry wt	0.25	14.3	16.8
Nickel	mg/kg dry wt	0.05	11.2	11.7
Zinc	mg/kg dry wt	0.05	42.3	110

**NOT APPLICABLE TO
HOMESTEAD AREAS**

Method Summary

Elements in Soil

Samples dried and passed through a 2 mm sieve followed by acid digestion and analysis by ICP-MS. In accordance with in-house procedure based on US EPA method 200.8.



Emily Hanna, B.Sc.
Trace Elements Team Leader



Certificate of Analysis

Malloch Environmental Ltd
19 Robertsons Road, Kirwee
Christchurch 7671

Attention: Fran Hobkirk
Phone: 021 132 0321
Email: nicola@mallochenviro.co.nz

Sampling Site: 2 & 4 Glovers

Lab Reference: 21-24529
Submitted by: Nicola Peacock
Date Received: 31/05/2021
Testing Initiated: 31/05/2021
Date Completed: 2/06/2021
Order Number:
Reference: 475

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Heavy Metals in Soil

Client Sample ID			VS24 base	VS25 wall	VS26 base	VS27 wall	VS28 wall
Date Sampled			28/05/2021	28/05/2021	28/05/2021	28/05/2021	28/05/2021
Analyte	Unit	Reporting Limit	21-24529-1	21-24529-2	21-24529-3	21-24529-4	21-24529-5
Arsenic	mg/kg dry wt	0.125	5.0	6.2	5.6	6.0	7.4
Cadmium	mg/kg dry wt	0.005	0.057	0.16	0.036	0.039	0.14
Chromium	mg/kg dry wt	0.125	15.9	18.4	17.2	17.6	19.8
Copper	mg/kg dry wt	0.075	8.90	16.2	9.36	9.89	13.4
Lead	mg/kg dry wt	0.25	20.0	74.0	16.9	18.0	48.2
Nickel	mg/kg dry wt	0.05	13.4	13.2	14.7	14.9	15.7
Zinc	mg/kg dry wt	0.05	65.4	102	52.7	56.0	118

Heavy Metals in Soil

Client Sample ID			VS29 wall
Date Sampled			28/05/2021
Analyte	Unit	Reporting Limit	21-24529-6
Arsenic	mg/kg dry wt	0.125	5.7
Cadmium	mg/kg dry wt	0.005	0.045
Chromium	mg/kg dry wt	0.125	17.5
Copper	mg/kg dry wt	0.075	8.81
Lead	mg/kg dry wt	0.25	16.9
Nickel	mg/kg dry wt	0.05	14.8
Zinc	mg/kg dry wt	0.05	55.1

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.

Method Summary

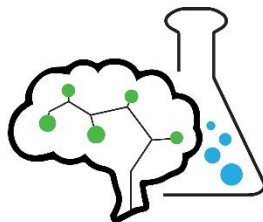
Elements in Soil Samples dried and passed through a 2 mm sieve followed by acid digestion and analysis by ICP-MS. In accordance with in-house procedure based on US EPA method 200.8.



Emily Hanna, B.Sc.
Trace Elements Team Leader

Appendix G – Asbestos Air Monitoring Reports

SURVEILLANCE AIR MONITORING REPORT



Reasoned Analysis

Independent advice, practical solutions

Inspection Location: 4 Glovers Road, Halswell, Christchurch 8025

Report Date:	29 March 2021	Inspection Date:	29 March 2021
RA Job Reference:	J00539	Inspection Time:	08:30
Client:	Environmental Services New Zealand Ltd	No. of Samples:	Air: 4
Client Reference:	4 Glovers Rd	Attending Consultant:	Hamish Voice

1. Introduction and Background

Reasoned Analysis Ltd were engaged by Art Ryumin of Environmental Services New Zealand Ltd to conduct surveillance air monitoring at the above location. The sampling described below was conducted on 29 March 2021.

2. Sampling

Samples were collected using air sampling pumps to draw a known volume of air over membrane filters. These filters were then examined in accordance with *Safe Work Australia's Guidance Note on the Membrane Filter Method for the Estimation of Airborne Asbestos Fibres, 2nd Edition, 2005 [NOHSC:3003 (2005)]*.

Table 1: Air monitoring results

Sample Number	Sample Location Description	Time (24hour)		Flow Rate (L/min)		Fibres counted	Result (f/mL)
		Start	Finish	Start	Finish		
1327	Southwest Corner	09:16	09:16	2	2	1	<0.01
1317	Northwest Corner	09:18	15:10	2	2	1.5	<0.01
373	Northeast Corner	09:20	15:12	2	2	1	<0.01
323	Southeast Corner	09:22	15:13	2	2	2	<0.01

Consultant:

Hamish Voice B.Sc., IP402
Director / Senior Consultant
Asbestos Assessors License: AA16110204
hamish@reasonedanalysis.co.nz

Reviewer:

Hamish Voice B.Sc., IP402
Director / Senior Consultant
Asbestos Assessors License: AA16110204
hamish@reasonedanalysis.co.nz

SURVEILLANCE AIR MONITORING REPORT

3. Discussion

All sample results were below the guideline level of <0.01f/mL of air. This shows that existing controls are suitable and no further actions are required at this stage.

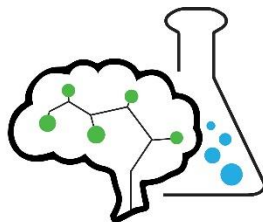
The airborne fibre monitoring described above was conducted in line with existing legislation and guidance, including but not limited to:

- Health and Safety at Work act 2015
- Health and Safety at Work (Asbestos) Regulations 2016
- Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
- Management and Removal of Asbestos – Approved Code of Practice (ACOP) - November 2016

Below is a copy of Table 13 from Section 30.3.1 of the aforementioned ACOP:

Action Level	Control	Action
< 0.01 fibres/ml	No new control measures are necessary	Continue with existing control measures
≥ 0.01 fibres/ml but < 0.02 fibres/ml	1. Investigate	Investigate the cause
	2. Implement	Put controls in place to prevent exposure
	3. Prevent	Prevent further fibre release
≥ 0.02 fibres/ml	1. Stop	Stop Class A asbestos removal work
	2. Notify	Notify WorkSafe as soon as possible as a notifiable incident. Include the results of the air monitoring.
	3. Investigate	Conduct a thorough visual inspection of the enclosure (if used) and associated equipment in consultation with all asbestos workers. Review controls.
	4. Put controls in place to prevent exposure and further asbestos fibre release	1. Extend the isolated/barricaded area around the work area/enclosure so far as reasonably practicable (until fibre levels are at or below 0.01 fibres/ml) 2. Wet-wipe and vacuum the surrounding area, seal any identified leaks (eg with expandable foam or tape) 3 Smoke test the enclosure until it is satisfactorily sealed
	5. Conduct further air monitoring	Do not re-start until fibre levels are at or below 0.01 fibres/ml
	6. Retain records for five years	

SURVEILLANCE AIR MONITORING REPORT



Reasoned Analysis

Independent advice, practical solutions

Inspection Location: 4 Glovers Road, Halswell, Christchurch 8025

Report Date:	30 March 2021	Inspection Date:	30 March 2021
RA Job Reference:	J00539	Inspection Time:	09:00
Client:	Environmental Services New Zealand Ltd	No. of Samples:	Air: 4
Client Reference:	4 Glovers Rd	Attending Consultant:	Hamish Voice

1. Introduction and Background

Reasoned Analysis Ltd were engaged by Art Ryumin of Environmental Services New Zealand Ltd to conduct surveillance air monitoring at the above location. The sampling described below was conducted on 30 March 2021.

2. Sampling

Samples were collected using air sampling pumps to draw a known volume of air over membrane filters. These filters were then examined in accordance with *Safe Work Australia's Guidance Note on the Membrane Filter Method for the Estimation of Airborne Asbestos Fibres, 2nd Edition, 2005 [NOHSC:3003 (2005)]*.

Table 1: Air monitoring results

Sample Number	Sample Location Description	Time (24hour)		Flow Rate (L/min)		Fibres counted	Result (f/mL)
		Start	Finish	Start	Finish		
911	Southwest Corner	09:32	14:43	2	2	2	<0.01
915	Northwest Corner	09:35	14:44	2	2	2	<0.01
895	Northeast Corner	09:38	14:45	2	2	1	<0.01
890	Southeast Corner	09:40	14:46	2	2	2	<0.01

Consultant:

Hamish Voice B.Sc., IP402
Director / Senior Consultant
Asbestos Assessors License: AA16110204
hamish@reasonedanalysis.co.nz

Reviewer:

Hamish Voice B.Sc., IP402
Director / Senior Consultant
Asbestos Assessors License: AA16110204
hamish@reasonedanalysis.co.nz

SURVEILLANCE AIR MONITORING REPORT

3. Discussion

All sample results were below the guideline level of <0.01f/mL of air. This shows that existing controls are suitable and no further actions are required at this stage.

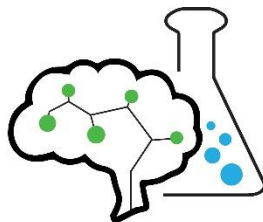
The airborne fibre monitoring described above was conducted in line with existing legislation and guidance, including but not limited to:

- Health and Safety at Work act 2015
- Health and Safety at Work (Asbestos) Regulations 2016
- Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
- Management and Removal of Asbestos – Approved Code of Practice (ACOP) - November 2016

Below is a copy of Table 13 from Section 30.3.1 of the aforementioned ACOP:

Action Level	Control	Action
< 0.01 fibres/ml	No new control measures are necessary	Continue with existing control measures
≥ 0.01 fibres/ml but < 0.02 fibres/ml	1. Investigate	Investigate the cause
	2. Implement	Put controls in place to prevent exposure
	3. Prevent	Prevent further fibre release
≥ 0.02 fibres/ml	1. Stop	Stop Class A asbestos removal work
	2. Notify	Notify WorkSafe as soon as possible as a notifiable incident. Include the results of the air monitoring.
	3. Investigate	Conduct a thorough visual inspection of the enclosure (if used) and associated equipment in consultation with all asbestos workers. Review controls.
	4. Put controls in place to prevent exposure and further asbestos fibre release	1. Extend the isolated/barricaded area around the work area/enclosure so far as reasonably practicable (until fibre levels are at or below 0.01 fibres/ml) 2. Wet-wipe and vacuum the surrounding area, seal any identified leaks (eg with expandable foam or tape) 3 Smoke test the enclosure until it is satisfactorily sealed
	5. Conduct further air monitoring	Do not re-start until fibre levels are at or below 0.01 fibres/ml
	6. Retain records for five years	

SURVEILLANCE AIR MONITORING REPORT



Reasoned Analysis

Independent advice, practical solutions

Inspection Location: 4 Glovers Road, Halswell, Christchurch 8025

Report Date:	31 March 2021	Inspection Date:	31 March 2021
RA Job Reference:	J00539	Inspection Time:	09:00
Client:	Environmental Services New Zealand Ltd	No. of Samples:	Air: 4
Client Reference:	4 Glovers Rd	Attending Consultant:	Hamish Voice

1. Introduction and Background

Reasoned Analysis Ltd were engaged by Art Ryumin of Environmental Services New Zealand Ltd to conduct surveillance air monitoring at the above location. The sampling described below was conducted on 31 March 2021.

2. Sampling

Samples were collected using air sampling pumps to draw a known volume of air over membrane filters. These filters were then examined in accordance with *Safe Work Australia's Guidance Note on the Membrane Filter Method for the Estimation of Airborne Asbestos Fibres, 2nd Edition, 2005 [NOHSC:3003 (2005)]*.

Table 1: Air monitoring results

Sample Number	Sample Location Description	Time (24hour)		Flow Rate (L/min)		Fibres counted	Result (f/mL)
		Start	Finish	Start	Finish		
962	Southwest Corner	09:04	16:24	2	2	1	<0.01
950	Northwest Corner	09:05	16:26	2	2	1	<0.01
887	Northeast Corner	09:11	16:27	2	2	3	<0.01
242	Southeast Corner	09:12	16:28	2	2	2	<0.01

Consultant:

Hamish Voice B.Sc., IP402
Director / Senior Consultant
Asbestos Assessors License: AA16110204
hamish@reasonedanalysis.co.nz

Reviewer:

Hamish Voice B.Sc., IP402
Director / Senior Consultant
Asbestos Assessors License: AA16110204
hamish@reasonedanalysis.co.nz

SURVEILLANCE AIR MONITORING REPORT

3. Discussion

All sample results were below the guideline level of <0.01f/mL of air. This shows that existing controls are suitable and no further actions are required at this stage.

The airborne fibre monitoring described above was conducted in line with existing legislation and guidance, including but not limited to:

- Health and Safety at Work act 2015
- Health and Safety at Work (Asbestos) Regulations 2016
- Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
- Management and Removal of Asbestos – Approved Code of Practice (ACOP) - November 2016

Below is a copy of Table 13 from Section 30.3.1 of the aforementioned ACOP:

Action Level	Control	Action
< 0.01 fibres/ml	No new control measures are necessary	Continue with existing control measures
≥ 0.01 fibres/ml but < 0.02 fibres/ml	1. Investigate	Investigate the cause
	2. Implement	Put controls in place to prevent exposure
	3. Prevent	Prevent further fibre release
≥ 0.02 fibres/ml	1. Stop	Stop Class A asbestos removal work
	2. Notify	Notify WorkSafe as soon as possible as a notifiable incident. Include the results of the air monitoring.
	3. Investigate	Conduct a thorough visual inspection of the enclosure (if used) and associated equipment in consultation with all asbestos workers. Review controls.
	4. Put controls in place to prevent exposure and further asbestos fibre release	1. Extend the isolated/barricaded area around the work area/enclosure so far as reasonably practicable (until fibre levels are at or below 0.01 fibres/ml) 2. Wet-wipe and vacuum the surrounding area, seal any identified leaks (eg with expandable foam or tape) 3 Smoke test the enclosure until it is satisfactorily sealed
	5. Conduct further air monitoring	Do not re-start until fibre levels are at or below 0.01 fibres/ml
	6. Retain records for five years	

SURVEILLANCE AIR MONITORING REPORT

Appendix H – Disposal Documentation



Manifest Number: 6316

WASTE TRANSFER MANIFEST

DATE: 14-4-21	TIME:
---------------	-------

JOB DETAILS (POINT OF ORIGIN)

Job / Site Address: 2-4 Glovers Rd.	Frews Job Number: 1204
---	---------------------------

BILLING CUSTOMER DETAILS

Billing Customer: frews contracting	Contact Name: Ross voice
--	-----------------------------

TRANSPORTER DETAILS

Transporter Name: frews	Truck Only <input type="checkbox"/> TICK ONE	Truck & Trailer <input checked="" type="checkbox"/>	Truck Rego: 5RC814
----------------------------	---	--	-----------------------

WASTE DETAILS

RECEIVED BY

Frews Quarries Ltd

Plantation Road, Hororata Christchurch
GST: 113 453 222
Docket No : P18233

Vehicle : FRE647T - FREWS
Charge To : FREWCO - FREWS
Product : SPECIAL WASTE (TN)
Order : 1204 2-4 GLOVERS ROAD
Notes : DRIVE SAFE
Tare : 8,100 10:03:08 AM 14-Apr
Gross : 25,360 10:04:46 AM 14-Apr
Net : 17,260

Delivery : Supply Only
Printed : 10:04:46 AM 14-Apr-21
Signature:

Frews Quarries Ltd

Plantation Road, Hororata Christchurch
GST: 113 453 222
Docket No : P18232

Vehicle : FRE647 - FREWS
Charge To : FREWCO - FREWS
Product : SPECIAL WASTE (TN)
Order : 1204 2-4 GLOVERS ROAD
Notes : DRIVE SAFE
Tare : 12,400 9:56:50 AM 14-Apr
Gross : 28,060 10:00:54 AM 14-Apr
Net : 15,660

Delivery : Supply Only
Printed : 10:00:54 AM 14-Apr-21
Signature:

32.92t

Special Waste Manifest

DOCKET 992115

5 May 2021 11:27 am

MANIFEST No. 45832

Reg MSB399 Frews Contracting Ltd

Tag Id 144027

Frews Isuzu (25/05/20)

Trailer 2N186

2nd Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45832

Gross 29,940 Kg

Tare 9,360 K

Net 20,580 K

ails

Permit No. B1084

Frews contracting ltd

Sawills road

Harewood

Contact Phone

Fax

0272243251

Details (If different from Permit Holder above)

S

glovers road Halswell

Contact Phone

Fax

ID Asbestos

Lab. Test No. (where applicable)

Batch I.D.

Date of Collection

One or two bins (circle)

1 2

5/5/21

D Waste Transporter Details

Immediate Container Turnaround Requested ☐

Transporter Name

Frews

Address

Contact Person

Driver Name

Nick

Contact Phone

Fax

Truck Registration

Container No.

MSB399

H631

E To be completed at Landfill

Permit Verified ☐

Date of Arrival

Time of Arrival

Special handling ☐

Weighbridge Docket No.

Weight

GPS Disposal Location

N

E

RL

Disposal Time

Operator / Technician

Notes

Generator Copy

June 2019

Issue: 7

LMP 4-3 F

CWS

Canterbury
Waste Services

PO Box 142 Amberley 7441

Phone: 03 359 1800

Email: kvpad@cws.co.nz

DOCKET 992444
2:31 pm

Special Waste Manifest

Reg MSB399 Frews Contracting Ltd

MANIFEST No. 45835

Tag Id 144027
Frews Isuzu (25/05/20)

Trailer 2N186

2nd Load: Special Waste

Permit Number : B1084
Billing Customer : Frews (HD Asbestos)
Manifest Number : 45835

Gross 23,340 Kg
Tare 9,360 K
Net 13,980 K

ails

Permit No. B1084

S contracting ltd
Savills road
Harewood

Contact Phone

Fax

0272243251

Details (If different from Permit Holder above)

S

glovers road

Contact Phone

Fax

ID Asbestos

Lab. Test No. (where applicable)

Batch I.D.

Date of Collection

One or two bins (circle)

1 2

7/5/21

D Waste Transporter Details

Immediate Container Turnaround Requested ☐

Transporter Name

Frews

Address

Contact Person

Driver Name

Nick

Contact Phone

Fax

Truck Registration

Container No.

MSB399

H630

E To be completed at Landfill

Permit Verified ☐

Date of Arrival

Time of Arrival

Special handling ☐

Weighbridge Docket No.

Weight

GPS Disposal Location

N

E

RL

Disposal Time

Operator / Technician

Notes

Generator Copy

June 2019

Issue: 7

LMP 4-3 F

CWS

Canterbury
Waste Services

PO Box 142 Amberley 7441
Phone: 03 359 1800
Email: kvpad@cws.co.nz

CWS Kate Valley Landfill**Special Waste Manifest**MANIFEST No. **45804****WEIGHING DOCKET 988852**

1 Apr 2021 8:38 am

Reg MSB399 Frews Contracting Ltd

Tag Id 144027

Frews Isuzu (25/05/20)

1st Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45804

Gross 23,320 Kg
Tare 15,180 K
Net **8,140 K**

ails

Permit No. **B1084**

Contracting ltd
vills road
Harewood

Contact Phone

Fax

0272243251**Details** (If different from Permit Holder above)

S

glovers road

Contact Phone

Fax

D Asbestos

ENTERED**WEIGHING DOCKET 988853**

1 Apr 2021 8:38 am

Reg MSB399 Frews Contracting Ltd

Tag Id 144027

Frews Isuzu (25/05/20)

Trailer 2N186

2nd Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45804

Gross 22,880 Kg
Tare 8,360 K
Net **14,520 K**

One or two bins (circle)

1

②

Is

Immediate Container Turnaround Requested

☐

Driver Name

Nick

Fax

Container No.

H626 H632

fill

Permit Verified

☐

Time of Arrival

Special handling

☐

N

E

RL

Operator / Technician

Notes

Generator Copy

June 2019

Issue: 7

LMP 4-3 F

CWSCanterbury
Waste Services

PO Box 142 Amberley 7441

Phone: 03 359 1800

Email: kvpad@cws.co.nz

CWS Kate Valley Landfill

WEIGHING DOCKET 988854

1 Apr 2021 8:45 am

Reg TRUCKD Frews Contracting Ltd

Tag Id 092809

Frews Isuzu

1st Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45275

Gross 24,420 Kg

Tare 16,320 K

Net 8,100 K

ENTERED

WEIGHING DOCKET 988855

1 Apr 2021 8:45 am

Reg TRUCKD Frews Contracting Ltd

Tag Id 092809

Frews Isuzu

Trailer 2N186

2nd Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45275

Gross 24,640 Kg

Tare 9,400 K

Net 15,240 K

Special Waste Manifest

MANIFEST No. 45275

ails

Permit No. B1084

Frews

ENTERED

Contact Phone

Fax

Details (If different from Permit Holder above)

Frews

2-5 Clovers Rd.

Contact Phone

Fax

2x 15m Bins

HP ASBESTO

One or two bins (circle)

1

2

S

Immediate Container Turnaround Requested

☐

Frews

Driver Name

Greg M.

Fax

Container No.

27/31

ill

Permit Verified

☐

Time of Arrival

Special handling

☐

N

E

RL

Operator / Technician

Notes

Generator Copy

June 2019

Issue: 7

LMP 4-3 F

CWS

Canterbury
Waste Services

PO Box 142 Amberley 7441

Phone: 03 359 1800

Email: kvpad@

CWS Kate Valley Landfill

WEIGHING DOCKET 989176

6 Apr 2021 12:42 pm

Reg TRUCKD Frews Contracting Ltd

Tag Id 092809

Frews Isuzu

1st Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45276

Gross 19,560 Kg

Tare 16,140 K

Net 3,420 K

WEIGHING DOCKET 989177

6 Apr 2021 12:42 pm

Reg TRUCKD Frews Contracting Ltd

Tag Id 092809

Frews Isuzu

Tr r 2N186

2nd Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45276

Gross 24,700 Kg

Tare 9,400 K

Net 15,300 K

Special Waste Manifest

MANIFEST No. 45276

ails

Permit No. B1084

Contact Phone

Fax

Details (If different from Permit Holder above)

Contact Phone

Fax

One or two bins (circle)

1

2

S

Immediate Container Turnaround Requested

Driver Name

Fax

Container No.

fill

Permit Verified

Time of Arrival

Special handling

N

E

RL

Operator / Technician

Notes

Generator Copy

June 2019

Issue: 7

LMP 4-3 F

CWS

Canterbury
Waste Services

PO Box 142 Amberley 7441

Phone: 03 359 1800

Email: kvpad@cws.co.nz

CWS Kate Valley Landfill

WEIGHING DOCKET 989258

7 Apr 2021 8:20 am

Reg TRUCKD Frews Contracting Ltd

Tag Id 092809

Frews Isuzu

HP Azzie

1st Load: Special Waste

Permit Number : B1084

Billing Customer : Frews (HD Asbestos)

Manifest Number : 45277

Gross 26,140 Kg

Tare 16,600 K

Net 9,540 K

ENTERED

Special Waste Manifest

MANIFEST No. 45277

ails

Permit No.

B1084

Frews

Contact Phone

Fax

Details (If different from Permit Holder above)

Frews

1-5 Closures Rd.

Contact Phone

Fax

1x 15" Bin

ENTERED

Lab. Test No. (where applicable)

Batch I.D.

Date of Collection

7/4

One or two bins (circle)

1 2

D Waste Transporter Details

Immediate Container Turnaround Requested

Transporter Name

Frews

Address

Contact Person

Barry

Driver Name

Greg M.

Contact Phone

Fax

Truck Registration

Truckd

Container No.

08

E To be completed at Landfill

Permit Verified

Date of Arrival

Time of Arrival

Special handling

Weighbridge Docket No.

Weight

GPS Disposal Location

N

E

RL

Disposal Time

Operator / Technician

Notes

Generator Copy

June 2019

Issue: 7

LMP 4-3 F

CWS

Canterbury
Waste Services

PO Box 142 Amberley 7441

Phone: 03 359 1800

Email: kvpad@cws.co.nz

Tran Docket	Date Time In	Manifest Number	Vehicle Id	Transporter	Product	Gross Weight	Tare Weight	Net Weight
457723	05/05/2021 08:27	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	22.18	10.90	11.28
457724	05/05/2021 08:28	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	22.92	6.68	16.24
457725	05/05/2021 08:39	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	21.14	10.88	10.26
457726	05/05/2021 08:40	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	19.14	6.80	12.34
457729	05/05/2021 09:23	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.68	10.80	10.88
457731	05/05/2021 09:25	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	19.68	5.44	14.24
457732	05/05/2021 10:01	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	21.72	10.90	10.82
457733	05/05/2021 10:01	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	21.64	6.68	14.96
457734	05/05/2021 10:36	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	23.14	10.88	12.26
457735	05/05/2021 10:37	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	17.88	8.80	9.08
457736	05/05/2021 11:24	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.34	10.80	10.54
457737	05/05/2021 11:25	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	21.78	5.44	16.34
457740	05/05/2021 11:59	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	20.80	10.90	9.90
457741	05/05/2021 11:59	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	21.44	6.68	14.76
457742	05/05/2021 12:07	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	22.34	10.88	11.46
457743	05/05/2021 12:07	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	17.26	8.80	8.46
457744	05/05/2021 12:49	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.18	10.80	10.38
457745	05/05/2021 12:50	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	23.20	5.44	17.76
457748	05/05/2021 13:43	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	20.10	10.90	9.20
457749	05/05/2021 13:43	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	20.68	6.68	14.00
457751	05/05/2021 13:56	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	22.98	10.88	12.10
457752	05/05/2021 13:56	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	19.86	8.80	11.06
457755	05/05/2021 14:13	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.98	10.80	11.18
457756	05/05/2021 14:13	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	24.76	5.44	19.32
457763	05/05/2021 16:05	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	21.30	10.90	10.40
457764	05/05/2021 16:06	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	23.90	6.68	17.22
457765	05/05/2021 16:08	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	22.72	10.88	11.84
457766	05/05/2021 16:11	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	19.34	8.80	10.54
457770	06/05/2021 09:00	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	21.78	10.90	10.88
457771	06/05/2021 09:01	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	23.76	6.68	17.08
457773	06/05/2021 09:04	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	20.42	10.88	9.54
457774	06/05/2021 09:05	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	18.76	8.80	9.96
457782	06/05/2021 10:38	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	22.12	10.80	11.32
457783	06/05/2021 10:38	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	22.92	5.44	17.48
457787	06/05/2021 11:07	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	20.96	10.90	10.06
457788	06/05/2021 11:07	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	22.88	6.68	16.20
457789	06/05/2021 11:18	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	20.46	10.88	9.58
457790	06/05/2021 11:19	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	20.84	8.80	12.04
457795	06/05/2021 12:13	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	22.34	10.80	11.54
457796	06/05/2021 12:14	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	24.82	5.44	19.38
457797	06/05/2021 12:41	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	20.38	10.90	9.48
457798	06/05/2021 12:41	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	23.54	6.68	16.86
457800	06/05/2021 13:01	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	22.76	10.88	11.88
457801	06/05/2021 13:02	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	19.20	8.80	10.40
457806	06/05/2021 13:40	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.38	10.80	10.58
457807	06/05/2021 13:41	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	23.22	5.44	17.78
457810	06/05/2021 14:51	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	21.16	10.90	10.26
457811	06/05/2021 14:51	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	23.68	6.68	17.00
457812	06/05/2021 14:59	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	21.94	10.88	11.06
457813	06/05/2021 14:59	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	19.02	8.80	10.22
457817	07/05/2021 07:30	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	21.78	10.90	10.88
457818	07/05/2021 07:30	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	24.98	6.68	18.30
457820	07/05/2021 07:35	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	22.12	10.80	11.32
457821	07/05/2021 07:35	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	23.94	5.44	18.50
457824	07/05/2021 07:38	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	23.26	10.88	12.38
457825	07/05/2021 07:38	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	21.72	8.80	12.92
457851	07/05/2021 09:08	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	22.54	10.90	11.64
457852	07/05/2021 09:09	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	25.28	6.68	18.60
457854	07/05/2021 09:21	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	22.88	10.80	12.08
457855	07/05/2021 09:22	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	23.16	5.44	17.72
457857	07/05/2021 09:26	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	23.78	10.88	12.90
457858	07/05/2021 09:27	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	20.62	8.80	11.82
457891	07/05/2021 11:24	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	22.02	10.90	11.12
457892	07/05/2021 11:24	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	25.54	6.68	18.86
457893	07/05/2021 11:28	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.72	10.80	10.92
457894	07/05/2021 11:29	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	23.54	5.44	18.10
457895	07/05/2021 11:37	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	23.18	10.88	12.30
457896	07/05/2021 11:38	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	20.52	8.80	11.72
457912	07/05/2021 12:58	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	20.48	10.90	9.58
457913	07/05/2021 12:59	659328	KDU550T	Frews Contracting Ltd	CCC Special Soil Class A	24.38	6.68	17.70
457915	07/05/2021 13:12	659328	HAD124	Frews Contracting Ltd	CCC Special Soil Class A	21.08	10.80	10.28
457916	07/05/2021 13:12	659328	HAD124T	Frews Contracting Ltd	CCC Special Soil Class A	24.24	5.44	18.80
457917	07/05/2021 13:23	659328	HYN201	Frews Contracting Ltd	CCC Special Soil Class A	23.66	10.88	12.78
457918	07/05/2021 13:24	659328	HYN201T	Frews Contracting Ltd	CCC Special Soil Class A	21.56	8.80	12.76
457936	07/05/2021 15:30	659328	KDU550	Frews Contracting Ltd	CCC Special Soil Class A	19.82	10.90	8.92

[illegible]

Appendix I – Photographs of Remediation

Photographs 1 to 7 show the areas affected by ACM contamination and the excavation undertaken to remediate them.



Photo 1: Area where ACM found on 2 Glovers Road



Photos 2-3: Area of ACM impacted soils on 4 Glovers Road



Photos 4-5: Parts of excavated area of ACM impacted soils on 4 Glovers Road including deeper pits



Photos 6-7: Final excavation of ACM impacted soils

Photographs 8 to 15 show the excavations to remediate the heavy metal contamination within the homestead area. A grid of XRF readings were taken approximately 2-3m apart. Readings under residential SGVs are marked 'O' and readings over residential SGVs are marked 'X'



Photos 8-9: Western area of heavy metal contamination with XRF test locations



Photos 10-11: Eastern area of heavy metal contamination with XRF test locations



Photos 12-13: Eastern area of heavy metal contamination with XRF test locations, some excavation still required on eastern wall



Photos 14-15: Final excavation of eastern area of heavy metal contamination (eastern wall and around VS_Y16)