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REMEDIAL ACTION PLAN
(RAP)

110-112 MOUNT VERNON ROAD, MOUNT VERNON NSW

PREPARED FOR: Project Works Design

OUR REFERENCE: REP-19-7963-A

ISSUE DATE: 20th May 2019

CONTROLLED DOCUMENT

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REP-19-7963	A	20/05/2019

AUTHOR	TECHNICAL REVIEWER
	
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1. INTRODUCTION

1.1 GENERAL

EnviroTech Pty. Ltd. was engaged by Project Works Design; Graham Mann to develop this Remediation Action Plan (RAP) for the remediation of contaminated soils at 110-112 Mount Vernon Road, Mount Vernon NSW 2178 (hereafter referred to as the site). The investigation will accompany a development application to evaluate, on the basis of the available information, the likely suitability of the site for the proposal from a contamination perspective.

The remediation strategy described in this RAP has primarily been established based on the findings of a contamination investigation conducted at the site by Envirotech dated 8th April 2019 (REP-19-7579-A).

This RAP outlines procedures for the remediation of the site to a condition suitable for the proposed development. The RAP also provides guidance on how the remedial strategy is to be implemented during construction and relevant occupational and environmental controls to be adopted. The principal objective of this plan was to outline the management techniques and safeguards that should be implemented to ensure the remediation and development are completed in an acceptable manner, preventing any adverse exposure on site contractors and the surrounding environment.

1.2 Objectives

The objectives of the investigation were to:

- Set remediation goals that ensure the remediated site will be suitable for the proposed use and will pose no unacceptable risk to the human health or the environment;
- Document the procedures and plans to be implemented to reduce the risk of significant harm to acceptable levels;
- Establish the environmental safeguards required in completing the remediation in an environmentally acceptable manner; and,
- Identify necessary approvals and licenses required by regulatory authorities if required.

1.3 Scope of Work

The Scope of Works included the following:

- A review of previous investigations and summary of the sites contamination status;
- Details of the preferred remediation strategy, and an outline of the methodology for the implementation of the selected strategy;
- A brief outline of environmental pollution control, community health and safety, and occupational health and safety measures that should be implemented during remedial works; and
- An outline of regulatory approvals and licenses which may be required to adopt the preferred remedial strategy.

1.4 Legislative Requirements

The investigation was conducted in accordance with:

- *Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2000);
- *Assessment of Site Contamination, National Environment Protection Measure* (NEPC, 2013);
- Contaminated Land Management Act (1997), NSW Government, Sydney;
- *Managing Land Contamination: Planning Guidelines, SEPP 55: Remediation of Land* (Department of Urban Affairs and Planning, 1998);

- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 3rd Edition* (NSW EPA, 2017);
- *NSW EPA Best Practice Note: landfarming (NSW EPA, 2014);*
- *Waste Classification Guidelines Part 1: Classifying Waste (DECC, 2014);*
- *Guidelines for the Assessment and Management of Groundwater Contamination* (NSW DEC, 2007);
- *Guide to Noise Control on Construction, Maintenance and Demolition Sites (AS 2436-1981);*
- *Contaminated Sites: Assessing Service Station Sites* (NSW EPA, 1994); and
- *Contaminated Sites: Sampling Design Guidelines* (NSW EPA 1995).

1.5 Proposed Development

The investigation will accompany a development application for the construction of a childcare centre.

2. SITE IDENTIFICATION

The study site is 110-112 Mount Vernon Road, Mount Vernon NSW 2178 (Lot 4 DP865818) (Figure 1). It can be identified as a trapezoidal allotment north of Mount Vernon Road. Figure 2 shows an aerial photograph of the site and the surrounding land.

Table 1: Site Identification.

Street Address	110-112 Mount Vernon Road, Mount Vernon
Lot and DP Number	Lot 4 DP865818
Approx. Site Area	10250 m2
Local Government Area	Penrith City Council
Zoning	E4 – Environmental Living
LGA Legislation	Penrith Local Environmental Plan 2010

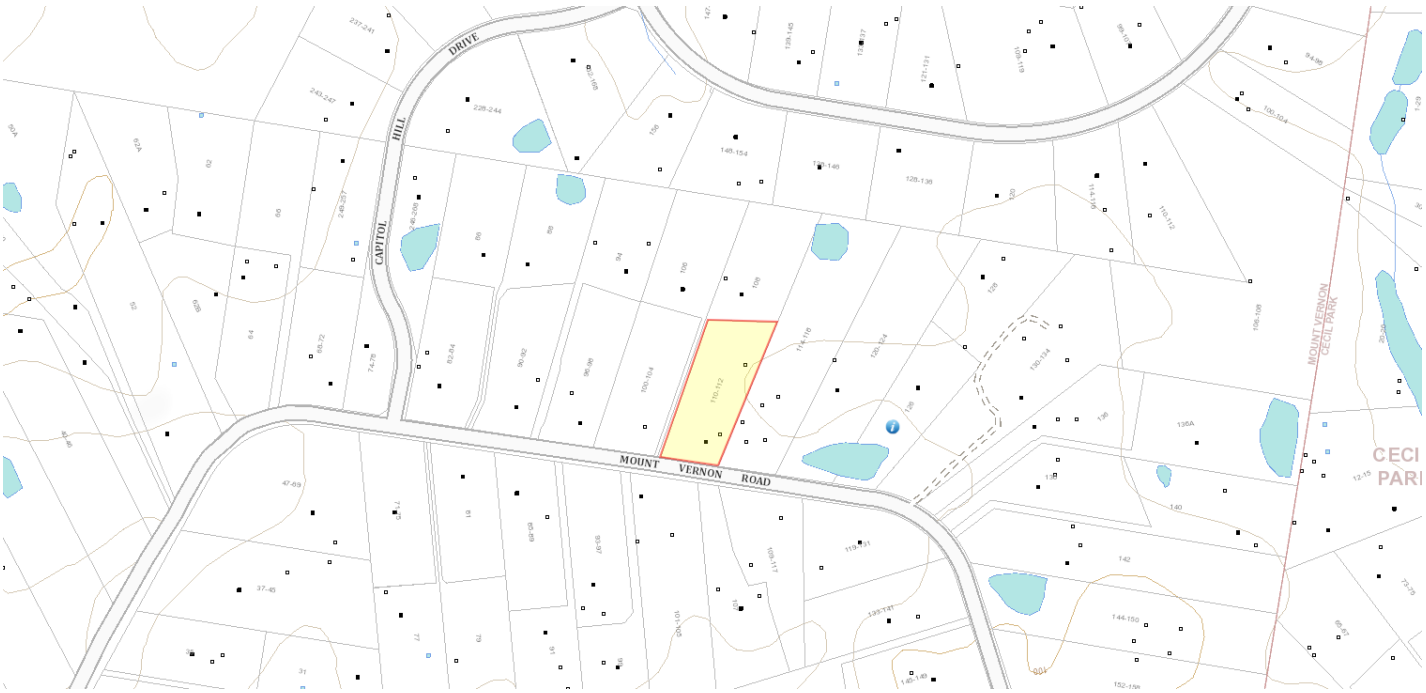

Figure 1: Site location map (NSW Spatial Information Exchange).

Figure 2: Aerial photograph of the site and surrounds (Photomaps by nearmaps).

3. SITE DESCRIPTION

3.1 Site Inspection

On Tuesday 26th March 2019, a site inspection was conducted by Envirotech consultant Jack Hinchliffe. Field work was carried out in accordance with the methodology described in AS 4482.1 – 2005 and the NEPM (2013). At the time of inspection, the site consisted of a fenced off unoccupied and empty property. The majority of the site was comprised of disused market gardens. At the north-eastern and southern portions of site were the footprint remains of sheds and a residential house that were previously demolished. Stockpiles were present at the southern portion of site.

3.2 Surrounding land use

The site is located within a residential setting and bordered by:

- Residential allotments surround the site in all directions; and
- Market Gardens surround the site east, west and south;

3.3 Topography

The site occupies a gentle south-east facing slope.

3.4 Geology and Soils

The department of environment soil map shows the site is within a Blacktown Soil Landscape characterised by gently undulating rises on Wianamatta Group shales. Local relief to 30 m, slopes usually >5%. Broad rounded crests and ridges with gently inclined slopes. Cleared Eucalypt woodland and tall open forest (dry schlerophyll forest). Soils generally consist of friable brownish black loam transitioning to moderately to light grey plastic mottled clay.

3.5 Surface Water Hydrology

No groundwater or distinct overland flow paths were noted during the investigation. Stormwater is expected to infiltrate into soils or sheet south into the stormwater drainage system at Mount Vernon Road.

3.6 Hydrogeology

A search of the Department of Primary Industries, Office of Water search tool Continuous Water Monitoring Network revealed no bores within a 500m radius of the site.

3.7 Acid Sulfate Soils

The site is not located in an Acid Sulfate Class soil area.

4. CONTAMINATION STATUS

The following report was prepared specifically for the proposed works and are the principal documents used in the preparation of this RAP:

- Environmental Site Investigation, Reference: REP-19-7579-A dated 08/04/2019, Envirotech.

Based on the available information, a targeted sampling plan was considered most appropriate to provide sufficient characterisation data. A total of twenty-one (21) test pits were nominated across the area of investigation (Figure 3).

The samples were measured against the Health Investigation Levels (HIL) for Soil Contaminants – *HIL A; Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.*

The laboratory used for the analysis of all samples was ALS Environmental located at 277-289 Woodpark Road, Smithfield NSW Australia. The laboratory is NATA accredited for the selected analyses.

Samples were analysed for Asbestos, Heavy Metals, Hydrocarbons and Pesticides. Based on the findings from the report, the following contaminants were detected in exceedance of the adopted health criterion: Asbestos.

4.1 Soil Analytical Results

The analytical investigation of the soil samples showed that contaminants in the following samples **exceeded** the adopted Site Assessment Criteria for the subject land use:

- Asbestos was detected above the HIL A criteria in sample: TP6, TP7, TP8 & TP19.

Figure 3: All twenty-one (21) test pits (yellow) with the concurrent asbestos sampling (blue) of the previous assessment.

5. REMEDIATION OPTIONS

5.1 Overview

With regard to site remediation, the Environment Protection Authority (EPA) endorses the Policy of the 1992 Australian and New Zealand Environment and Conservation Council (ANZECC) and National Health and Medical Research Council (NHMRC) Guidelines for the Assessment and Management of Contaminated Sites. Furthermore, the threshold concentrations presented in the NSW DECC Third Edition 2017 Guidelines for the NSW Site Auditor Scheme and the National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEPM) are considered as appropriate soil and groundwater clean-up criteria.

For groundwater, the ANZECC 2000 Guidelines for Fresh and Marine Water Quality have been generally accepted by the NSW EPA as appropriate investigation levels along with criteria outlined in the National Environment Protection (Assessment of Site Contamination) Measure 2013. The NSW EPA Service Station Guidelines also provide reference guidelines. In addition, the NSW EPA 2009 Waste Classification Guidelines have been used as the basis of technical review for the waste disposal options most applicable to the site.

A risk management approach has provided the basic principle of the remediation technologies/methods selected for the Site. This approach is consistent with the strategy outlined in the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC, 1992) and the National Environment Protection (Assessment of Site Contamination) Measure 2013, which are endorsed by NSW EPA.

A contaminated site, as defined by the NEPM 2013 and the ANZECC 1992, is a site at which hazardous substances occur at concentrations above background levels, and where assessment indicates it poses, or is likely to pose, an immediate or long-term hazard to human health or the environment.

Wherever human health is at risk, either on or off-site, or the off-site environment is at risk, a contaminated site should be remediated to the extent necessary in order to minimise such risks in both the short and long terms.

Environmental and Human Health Risk is based on exposure to potential hazards and is defined as:

Risk = Hazard x Exposure

The elimination of the risk can be achieved by the removal of the hazard and/or the exposure pathway. Remediation is defined as any measure that removes the risk to an acceptable level by negating the hazard or exposure pathway. Therefore, remediation can involve removal of the hazard (i.e. no risk remains) or alternatively, management of the risk by removal of the exposure pathway even if the hazard remains. Exposure pathways to contaminated material can be managed by undertaking a physical action (e.g. erection of a fence, installation of cap, etc.) and/or a management plan, which prevents exposure to contaminants (e.g. use of planning controls, management of site activities etc.).

5.2 Typical Remedial Options Available

Several remedial options were reviewed. The suitability of the remedial options was examined with respect to the requirements of the proposed development, whilst taking into account the provisions of a number of relevant guideline documents, including:

- ANZECC/NHMRC document *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Lands* 1992 (ANZECC 1992).
- Department of Environment and Conservation (now DECCW), *Contaminated Site: Guidelines for the NSW Site Auditor Scheme* (3rd Edition) 2017.
- ANZECC, *Guidelines for the Assessment of On-site Containment of Contaminated Soil'* (ANZECC 1999).
- *NSW EPA Best Practice Note: landfarming (NSW EPA, 2014).*

Typical remedial options that may achieve the remedial objectives are identified as:

- Removal of contaminated material to landfill;
- Encapsulation of the contaminated soils by a physical barrier system; or
- On-site treatment and re-use of contaminated material.

6. SELECTION OF PREFERRED REMEDIATION STRATEGY

6.1 Evaluation of Remediation Options

A summary of the hierarchical policy for site remediation options (Guidelines for the NSW Site Auditors Scheme NSW DEC 2017) is as follows:

1. On-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;
2. Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site;
3. Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill;
4. Bioremediation which uses naturally occurring micro-organisms, such as bacteria and fungi, to eliminate, attenuate or transform polluting or contaminating substances in soils; and
5. Consolidation and isolation of the soil on site by containment within a properly designed barrier.

An evaluation of remedial options was considered as follows:

• Do nothing – Whereby no remediation is undertaken, and impacted soil remains on site. Given the sensitive nature of the proposed development, including residential and commercial uses, this option is not considered suitable;

• On-site containment – Given that this option will result in the site recorded on the Register of Contaminated Sites under section 21(A) of the Environmental Protection Act 1997, it is the least preferred option in the hierarchy of remediation options as outlined above. Also, the soil is to be excavated for the basement area which doesn't make containment onsite feasible; and

• On-site treatment and re-use of contaminated land – This strategy is feasible for some contaminants such as bacterial contamination. Bacterially contaminated soil is excavated and then spread thin over plastic exposed to the sun for seven days. This can be carried out by the caretaker/owner of the site. This is an advantageous strategy as the soil, once exposed to the sun, is reusable onsite.

• Excavation to offsite – This remedial strategy involves the complete removal of impacted soil from the site for disposal at an appropriately licensed waste management facility. The advantage of this strategy is that it removes the contaminants and their associated problems from the site. The disadvantage is that it is typically more costly than on-site containment and off-site transport of contaminated soil increases the risk of exposure within the surrounding community.

• Bioremediation – This remedial strategy involves 'landfarming' wherein engineered bioremediation systems which generally use tilling or ploughing of impacted soils to reduce contaminant levels biologically. Another well-practised system of bioremediation uses forced air that actively aerates the contaminated mass to encourage bioremediation.

6.2 Preferred Remediation Option

Based on an assessment of the options and considering the proposed land-uses and development, the remediation option which should be adopted for the site is excavation of contaminated soil offsite.

Excavation Offsite

The excavation to offsite is considered to be the most appropriate remedial strategy for the majority of the development area. The sensitive nature of the potential inhabitants for the proposed are key to this remediation recommendation. Off-site disposal of contaminated soil is considered a suitable option for managing human health and environmental impacts from the contaminated materials. Off-site disposal harnesses the excavation of soil, classification of spoil, and disposal to a facility which can legally receive it.

The EPA permits disposal of contaminated material subject to an approved landfill. The DECC Waste Classification Guidelines (2009) document sets out the methodology for assessing and classifying wastes to be disposed to landfill. Essentially, wastes are classified into General Solid (Non-putrescible), General Solid (Putrescible), General Solid – Special Waste Asbestos, General Solid – Restricted Waste and Hazardous Waste.

The selection of an appropriate landfill will normally depend largely upon the results of classification of the wastes. It is sometimes necessary for heavily contaminated soils to be pretreated prior to disposal, to reduce the concentrations or minimise the mobility of the contaminants. Special criteria are sometimes applicable to certain categories of waste. Contaminants covered by Chemical Control Orders have restrictions placed on their handling and disposal.

7. IMPLEMENTATION OF SELECTED REMEDIAL STRATEGY

7.1 Roles and Responsibilities

- Principal and Principals Representative

The Principal, Project Works Design, is responsible for the environmental performance of the proposed remediation works, including implementation of acceptable environmental controls.

- Principal Contractor and Site Manager

The Principal Contractor (referred to herein as the Contractor) is anticipated to be the party responsible for the day-to-day implementation of this RAP and shall fulfil the responsibilities of the Principal Contractor as defined by SafeWork NSW.

If hazardous materials are identified, SafeWork NSW licensed contractors are to be commissioned to safely remove them from site and dispose of them at a suitably licensed waste disposal facility (tickets retained for proof).

Furthermore, Principle Representative, Principal Contractor and Site Manager will be responsible for implementing the Remedial Environmental Monitoring Plan (REMP) including:

  - Notification of adjoining residents and local planning authority (involved in remedial works) prior to commencement of remedial works;
  - Define hours of operation (complying with council requirements);
  - Define roles and responsibilities for relevant parties to provide contact details;
  - Traffic control measures;
  - Handling of contaminated material;
  - Odour control measures
  - Stockpiling of excavated soils on site; and
  - Complaints and how they will be handled.

7.2 Remediation Process – Excavation Offsite

1. Soil contamination identified at TP6, TP7, TP8 & TP19 of site is to be scraped, excavated, and disposed offsite. The excavation should encompass 25.7mø areas surrounding TP6, TP7, TP8 & TP19 and excavate soils 500mm in depth; referring to DWG-19-7963-A.
2. Unless tested and proven otherwise, the material will be disposed at a licensed facility as Special (Asbestos) Waste (tickets retained for proof);
3. The soil surface across the site should be visibly clean soils (no remaining fill like materials); and
4. If the material is transported interstate it must be tracked and monitored using an NSW EPA approved tracking waste system.

7.3 Occupational Health and Safety (OHS)

- All transport of waste and disposal of materials must be conducted in accordance with the requirements of the POEO Act;
- Removal of waste materials from the site shall only be carried out by suitably licensed contractors holding consent and/ or approvals to dispose of the waste materials per the assigned waste classification; and
- Hazardous building materials and asbestos containing soils are to be safely disposed at a facility licensed to receive such waste with receipts retained for proof of safe and appropriate disposal.

7.4 Waste Classification

- TP6, TP7, TP8 & TP19 – Special (Asbestos) Waste.

7.5 Validation Goals/Implementation

- The validation goals are to have no contaminated soils remaining on the site;
- A validation certificate must be provided by a suitably qualified occupational hygienist, environmental scientist or equivalent person;
- Validation will involve a validation soil sampling and laboratory analysis regime as per follows
    - At least twelve (12) samples for the contaminates of concern from the walls of the excavated areas; and
    - At least eight (8) samples for the contaminates of concern from base of the excavated areas, additional discretionary samples if necessary;
- Each validation sample retrieved will be analysed for the contaminate of concern; Asbestos.

8. ENVIRONMENTAL MANAGEMENT PLAN

8.1 Introduction

A major component of the remedial works shall involve the installation and maintenance of an Environmental Management Plan (EMP). The EMP will provide details of the environmental protection and pollution control measures to be implemented during the operational phase of the remedial works. The pollution control measures have the objective of removing/minimizing any adverse impact on the surrounding environment.

In the following sections, outlines have been presented of the various pollution control measures that would be implemented during most elements of the remedial works. These form the basis of the Environmental Management Plan that should be read in conjunction with this document.

8.2 Site Fencing

Reasonable measures need to be taken to ensure the site boundary remains secure during all remedial site works. Secure temporary fencing is required to be in place for the duration of site works with gates secured and locked outside of site operating hours to prevent unauthorized access.

8.3 Erosion Sediment Control Plan

An erosion and sediment control plan will be prepared for the site. Erosion and run-off control measures will be implemented during all elements of remedial works. Typically, these measures will be designed to prevent the transport of pollutants (including sediments) out of the remediation area (including the designated stockpile areas) via surface run-off. Such measures typically include:

- Minimizing disturbed areas;
- Sediment control fencing;
- Stabilized site access points;
- Strict excavation times tables; and
- Prompt rehabilitation of disturbed areas.

8.4 Noise Control Plan

The Principal Contractor and Site Manager will be responsible for keeping noise levels to a minimum and not exceed limits outlined in AS 2436-1981. Noise levels must comply with Council and NSW EPA requirements. It is expected that equipment and machinery used onsite will not generate noise levels above this requirement.

8.5 Dust Control Plan

Dust generation should be kept to an absolute minimum. Dust control measures will be implemented to ensure that dust generated from the site is controlled within acceptable levels. These control measures will be developed considering the site conditions in each remediation area, and are likely to include (but not necessarily be limited) to the following:

- All vehicles leaving the site will be hosed down to remove any potentially contaminated dust;
- A water cart or equivalent will be utilized on-site to keep vehicle paths and areas of site work damp to minimise dust generation;
- Access to water sprays shall be available to water down excavation / loading areas; and

- Plastic sheeting shall be available to cover excavation faces and stockpiles.

8.6 Stormwater Control and Groundwater Management Plan

A stormwater control plan will be prepared for the site. Stormwater and run-off control measures will be implemented during all elements of remedial works. Minimisation of stormwater runoff will prevent contaminated media moving through the water column, into uncontaminated portions of the site, neighbouring properties or into council stormwater systems and are likely to include (but not necessarily be limited) to the following:

- Covering stormwater drains on Mount Vernon Road with filter drain socks or silt traps or hay bales (or similar); and
- Diverting run-off around stockpiles so that surface water collects in a low point on site and does not drain into neighbouring properties or Brocks Ln.

Any groundwater encountered during excavation works will be transferred to and stored onsite in trenches and sumps. No discharge of groundwater will occur without approval of appropriate regulatory bodies.

8.7 Odour Control Plan

All potential odours generated during remedial action is taking place must be monitored and comply with local Council and NSW EPA requirements. Due to the type of contamination present onsite, odours is not expected to be an issue onsite but may still be encountered.

8.8 Health and Safety

A Work Health and Safety (WHS) plan is an essential part of all remediation projects, to ensure the health and safety of all personnel working on or visiting the site. All remediation work would be undertaken in accordance with the provisions set out by the Work Health and Safety Act (2011) and associated Regulations 2011, and any other regulations or directions set out by regulatory authorities.

- Prior to commencing any remediation works, a specific WHS Plan would be prepared by the Remediation Contractor covering the following minimum aspects:
  - Method statements;
  - Identification of the remediation area and exclusion zones;
  - Induction of personnel;
  - Personal protective equipment (PPE);
  - Hazard identification / locations;
  - Identification of contaminants of concern and their physical and toxicological properties;
  - Description of exposure pathways and personal protection requirements;
  - Location of all underground/aboveground services;
  - Details of specific work practice procedures to be followed within the designated contaminated areas;
  - Monitoring protocols to identify a potentially hazardous practice;

- Emergency information; and
- Incident reporting.

8.9 Onsite Stockpiles

Stockpiles should be managed to minimise the risk of dust generation, erosion and leaching. The measures required to achieve this will depend on the materials in the stockpile and the length of time the stockpile is to remain on site, but should include:

- Restrict the height of stockpiles to reduce dust generation;
- Construct erosion, sediment and runoff control measures;
- Cover stockpiles of contaminated soils to be left on site no more than 24 hours; and
- Keep temporary stockpiles moist, by using water spray where required.

9. UNEXPECTED FINDS PROTOCOL

9.1 Management

Where earthworks are required there is potential to expose unexpected forms of contamination within the surface and subsurface. In such instances, action is required to mitigate potential contaminated soil/material encountered during excavation or construction activities. If potentially contaminated material is encountered the Unexpected Finds Protocol is to be followed. Works in the vicinity will be stopped or modified and will not recommence until the material has been analysed and management measures developed.

9.2 Training

Personnel involved in earthworks on site are to be inducted on the identification of potential unexpected finds and asbestos awareness. The induction can be undertaken at the time of general site induction and refreshed periodically at toolbox meetings. Induction to provide awareness of all types of possible unexpected finds is not practicable. In general, a precautionary approach can be employed and the unexpected finds procedure outlined in the following sections should be implemented.

9.3 Procedure

Personnel involved in earthworks on site are to be inducted on the identification of potential unexpected finds and asbestos awareness. The induction can be undertaken at the time of general site induction and refreshed periodically at toolbox meetings. Induction to provide awareness of all types of possible unexpected finds is not practicable. In general, a precautionary approach can be employed and the unexpected finds procedure outlined in the following sections should be implemented.

Should an unexpected actual or suspected contamination be encountered during the development works, the following procedure applies:

1. Stop work in the potentially hazardous area as soon as it is safe to do so and move to the upwind side of the area, or away from the area.

2. Assess the potential immediate risk to human health posed by the unexpected find and assess if evacuation or emergency services need to be contacted.

3. Delineate an exclusion zone around the affected area using fencing and/or appropriate barriers and signage. Additional control measures may be required for odours and/or volatile compounds: odours suppression and no smoking signage.

4. Contact the appointed environmental consultant for advice and request a site visit to undertake an assessment of the unexpected find. The Site Supervisor should be informed of the find once a preliminary assessment is made.

5. The environmental consultant will assess the unexpected find and provide advice regarding:

   a) Preliminary assessment of the contamination and need for immediate management controls;

b) What further assessment and/or remediation works are required and how such works are to be undertaken in accordance with contaminated site regulations and guidelines;

c) Preparation of an addendum to the remediation action plan (if necessary) or provide clean up advice;

d) Remediation works required (where applicable);

e) Validation works required following remediation works (if applicable).

6. Works are not to recommence in the affected area until appropriate advice has been obtained from the environmental consultant and the environmental consultant has provided relevant information to the Site Supervisor, particularly for considering change to the Site Safety Plan.

7. If it is deemed safe to do so by the Site Supervisor, works may resume in the affected area.

10. CONCLUSION

The Site can be made suitable for the intended land-use through remedial action as part of the redevelopment works in accordance with State Environmental Planning Policy No.55 Managing Land Contamination: Planning Guidelines SEPP 55.

In conclusion, the RAP:

- Has been developed in a manner consistent with current industry practice;
- Has selected a preferred remediation strategy based on the site-specific issues and currently available technologies that will allow the site to be made suitable for the intended land use;
- Has presented an outline of the Environmental Management Plan (EMP) and associated contingency plans to ensure the environment is appropriately protected during the proposed works;
- Has presented an information and consultation program to ensure the stakeholders are informed of the works as they proceed; and,
- Has outlined the means of validation of the completed works and ongoing management.

11. REFERENCES

- *Australian and New Zealand Guidelines for the Management of Contaminated Sites, 1992, Australian and New Zealand Environment and Conservation Council and National Health and Medical Research Council (ANZECC/NHMRC 1992).*
- *Contaminated Sites: Sampling Design Guidelines 1995, NSW Environment Protection Authority (NSW EPA 1995).*
- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites, 2011, NSW Environment Protection Authority (NSW EPA 2011).*
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 3rd Edition, 2017.*
- *NSW EPA Best Practice Note: landfarming (NSW EPA, 2014).*
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination (NSW DEC 2007).*
- *Guidelines for the Assessment, Remediation and Management of Asbestos: Contaminated Sites in Western Australia, May 2009.*
- *Guide to Noise Control on Construction, Maintenance and Demolition Sites (AS 2436-1981).*
- *National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEPM).*
- *Contaminated Land Management Act (1997), NSW Government, Sydney, NSW.*
- *Waste Classification Guidelines, NSW DECCW 2009*

12. LIMITATIONS

The information contained within this report have been prepared exclusively for the client. Envirotech has carried out the investigation with a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. This report is to be read in its entirety including attachments and appendixes and should not read in individual sections.

A third party should not rely upon the information prior to making an assessment that the scope of work conducted meets their specific needs. Envirotech cannot be held liable for third party reliance on this document.

The sub-surface environment can vary greatly across an individual site. The conclusions presented in this report are based on limited investigation of conditions at specific sampling locations chosen to be as representative as possible under the given circumstances. However, it is possible that this investigation may not have encountered all areas of contamination at the site due to the limited sampling and testing program undertaken.

Envirotech's professional opinions are based upon its professional judgment, experience, training and results from analytical data. In some cases further testing and analysis may be required, thus producing different results and/or opinions. Envirotech has limited its investigation to the scope agreed upon with its client.

APPENDIX A: REMEDIATION SITE PLANS

LEGEND:
Site Boundary
Other Fences
Landform Element
Watercourses, Dams
Overland Flow Path
Surface Spray Sprinkler
Irrigation Pipework
Soil Borehole
Photo Location
Building Area
Land App. Area
Paved Area

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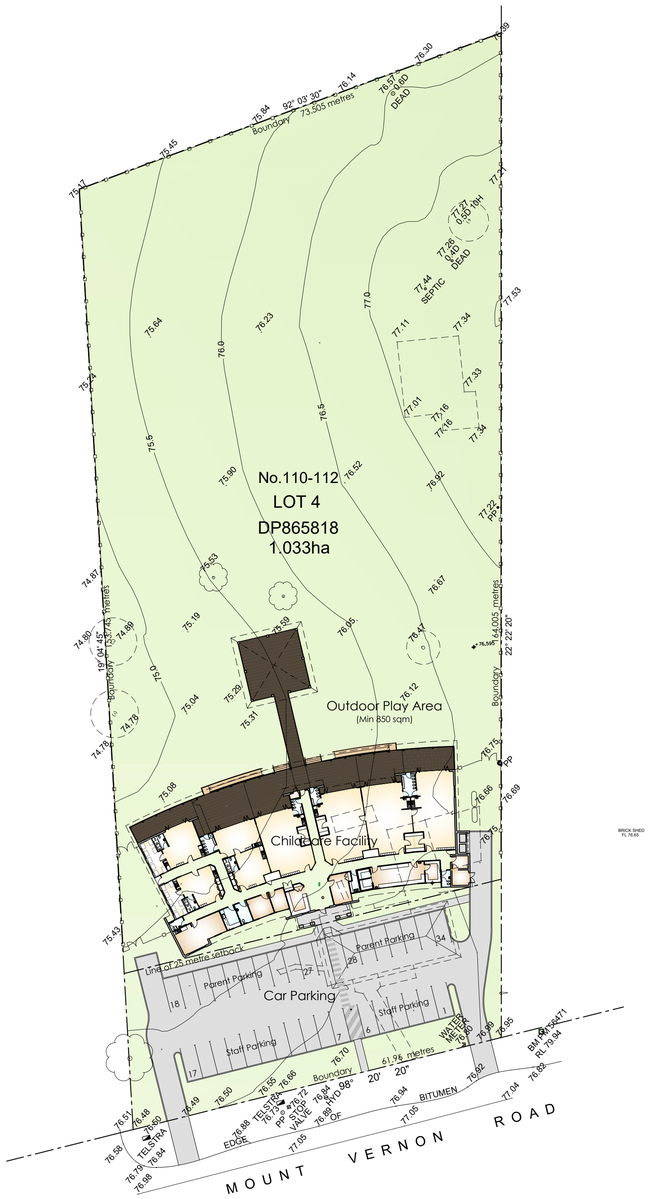
Wastewater | Contamination | Geotechnical
Stormwater | Ecology | Occupational Hygiene
Bushfire | Acoustic & Noise

TITLE: 110-112 Mount Vernon Road Remediation Map		SHEET SIZE: A4	SCALE: NTS
CLIENT: Graham Mann	PROJECT: 110-112 Mount Vernon Road, Mount Vernon NSW (Penrith LGA)	SHEET: 1/1	DATE: 15/05/2019
		PROJECT REF / DRAWING NUMBER: DWG-19-7963-A	

APPENDIX B: DEVELOPMENT PLANS



SITE PLAN
SCALE 1:500

PART SITE PLAN
SCALE 1:200

0 1 2 3 4 5 10
SCALE - 1:200 @ A1 METRES

Concept Design Plans

PROJECT WORKS DESIGN

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Rev Date Description
Amendments

Vladimir Vanovac and Mark Toma

Proposed Childcare Centre

110 - 112 Mount Vernon Road Mount Vernon NSW

North Point

Title: Proposed Site Plan
Drawn: GM
Date: 01.11.18
Checked: GM
Scale: 1 : 500 / 1:200 @A1
Dwg No. SK01
Job No. 18307
Issue: B