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VERSION [1.1]

FEBRUARY 16, 2022



SOIL AND SITE ASSESSMENT FOR ONSITE WASTEWATER MANAGEMENT

14 MOUNT VERNON ROAD, MOUNT VERNON, NSW

LGA: Penrith

Lot 123 DP 32140

Project manager: Brian Longbottom

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VERSION CONTROL

Title	Soil and Site Assessment for Onsite Wastewater management			
Site address	14 Mount Vernon Road, Mount Vernon, NSW			
Description	Proposed dwelling			
Created By	Sean Harris Msc Env Science (UOW), Grad dip Nat Res (UNE), BscAppSc, Agriculture (HAC)			
Date Created	23/03/2021			
Version Number	Modified By	Modifications Made	Date Modified	Status
[1.0]	L.H.	Issue for client review	23/02/2021	Complete
[1.1]	M.S.	Altered dwelling location due to biodiversity issues – Change of disposal method for subsurface irrigation to absorption beds in response to remaining area	16/02/2022	Complete

Limitations

The findings and recommendations in this report are based on the objectives and scope of work outlined above. Harris Environmental Consulting Pty performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. The report and conclusions are based on the information obtained at the time of the assessment. Changes to the site conditions may occur subsequent to the investigation described herein, through natural processes or through the intentional or accidental addition of contaminants, and these conditions may change with space and time. The results of this assessment are based upon site assessment conducted by HEC personnel and information provided by the client and site management. All conclusions regarding the property are the professional opinions of the HEC personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, HEC assumes no responsibility or liability for errors in any data obtained from regulatory agencies, information from sources outside of HEC, or developments resulting from situations outside the scope of this project.

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1. ASSESSMENT CRITERIA

This report was prepared by Harris Environmental Consulting Pty for a proposed development on 14 Mount Vernon Road, Mount Vernon, NSW. The proposed development is for a 4-bedroom dwelling.

Fieldwork was undertaken by Harris Environmental Consulting (HEC) on the 19th March 2021. This plan is based on the primary investigation of the soils, topography and hydrology of the site observed on the day of inspection. Soil samples and photos of the site were taken for further analysis. This assessment was undertaken to propose a new Aerated Wastewater Treatment System (AWTS) for wastewater treatment and the installation of soil absorption beds for treated wastewater disposal.

Harris Environmental Consulting was commissioned by the owner to undertake this Soil and Site Assessment for On-Site Wastewater Management in accordance with:


- Penrith City Council's On-site Sewage Management and Greywater Reuse Policy;
- Environment and Health Protection Guidelines (1998) On-site Sewage Management for Single Households (Department of Local Government);
- Local Government Act 1993
- AS/NZ 1547:2012 On-site wastewater management (Standards Australia, 2012); and
- AS/NZS 3500 Plumbing and Drainage 2018 (Standards Australia, 2012)

FIGURE 1 LOCATION OF PROPERTY



Source: SixMaps

2. SITE INFORMATION

Project manager:	Brian Longbottom E: atjarchitects@outlook.com M: 0414 774 116	
Size of property:	~1 ha	
Site address:	14 Mount Vernon Road, Mount Vernon, NSW	
Legal title:	Lot 123 DP 32140	
Local Government:	Penrith Council	
Water supply:	Town	
Wastewater design load and daily wastewater (L/day):	Proposed dwelling: 4 bedrooms	DESIGN FLOW: 1200 L/day
Proposed wastewater treatment:	AWTS	
Proposed wastewater disposal:	Subsurface irrigation	
Date site assessed:	March 19, 2021	
Date report prepared:	February 16, 2022	
Report prepared by	Sean Harris Msc Env Science (UOW), Grad dip Nat Res (UNE), BscAppSc, Agriculture (HAC)	
Site assessor:	 Sean Harris	Msc Env Science (UOW), Grad dip Nat Res (UNE), BscAppSc, Agriculture (HAC)

3. SITE ASSESSMENT

Climate - rainfall	Penrith Rainfall Station (median annual 1299mm)
Climate - evaporation	Badgerys Creek (median 1557mm)
Flood potential	Treatment system above 1 in 100-year flood level; minor limitation; Land application system above 1 in 20 year flood contour, minor limitation
Frost potential	The site is not known to be subject to severe frosts, minor limitation
Exposure	Northern aspect, partially shaded
Slope	5-8% slope, minor limitation
Landform	Sideslope, minor limitation
Run-on and seepage	Moderate upslope stormwater run on; minor limitation
Erosion potential	Minor erosion potential
Site drainage	Moderate to well drained soil profile; minor limitation
Evidence of fill	No evidence of fill; minor limitation
Domestic groundwater use	No used domestic groundwater bores within 100m
Surface rock	No surface rock; minor limitation

4. SOIL ASSESSMENT

Method:	Hand augur/crowbar/shovel			
Depth to bedrock (m):	1000mm to restrictive layer; minor limitation			
Depth to high soil watertable:	No groundwater or subsoil mottling encountered at a depth of 1000mm; minor limitation			
Coarse (%):	No coarse fragments in subsoil, minor limitation			
pH (soil/water):	pH 5.5-6; minor limitation			
Electrical conductivity:	0.04 dSm, minor limitation			
Salinity hazard:	The Department of Infrastructure, Planning and Natural Resources map of salinity hazard throughout Western Sydney shows the proposed irrigation area as having a moderate salinity hazard .			
Domestic groundwater use:	The Department of Primary Industries Office of Water search of groundwater bores found there are no known groundwater bores within 100m of the proposed effluent management area			
Geological unit:	Wianamatta Group - Sandstone, siltstone and shale.			
Soil landscape:	Luddenham Soil Landscape			
Surface rock:	No surface rock in proposed effluent management area			
Bulk density:	Well drained soil profile; minor limitation			
Phosphorus balance assumptions:	P sorption capacity - 600,000mg/m ² /week/depth for clay soil types or 400,000mg/m ² /week/depth for sandy soil types			
Soil profile:	Layer 1		DIR	DLR
	Texture	Clay loam	NA	NA
	Colour	Grey/brown		
	Depth	0-400mm		
	Structure	Moderately structured		
	Coarse frag.	NA		
	Layer 2		DIR	DLR
Texture	Light clay	NA	10mm/d	
Colour	Tan/brown			
Depth	400-1000mm			
Structure	Moderately structured			
Coarse frag.	NA			

5. SUMMARY OF SOIL AND SITE CONSTRAINTS

There are no major soil or site constraints that would prevent the use of proposed Aerated Wastewater Treatment Systems (AWTS) for wastewater treatment and soil absorption beds for wastewater disposal. However, due to the slope of the land to the north-west, buffer distances require the beds to be pushed within the 40m buffer of the dam. To satisfy the 40m buffer distance in this case, a downslope diversion bank is required to increase the flow path. This diversion bank is shown on the site plans included in the Appendix. The proposed bed locations selected are compliant with all other buffers as set out by Penrith Council.

Additionally, given the proximity of the proposed primary soil absorption beds to the rear of the dwelling, the clients have the option to instead make the proposed reserve beds the primary beds instead, and the beds closest to the dwelling will become the reserve.

The light clay subsoil has suitable properties for this method of wastewater treatment and disposal.

Photo 1 On-site soil profile assessment



Photo 2 Site landform and landscape



Photo 3 Site landform and landscape



6. PROPOSED METHOD OF WASTEWATER TREATMENT

6.1 WASTEWATER TREATMENT SYSTEM

An Aerated Wastewater Treatment System is proposed for wastewater treatment. The owner is required to provide the Council with the AWTS manufacturer's specifications of the proposed treatment system. (Information on proposed AWTS can be obtained from the manufacturer or NSW Health Register of Accredited Sewage Management Systems at http://www.health.nsw.gov.au/publichealth/environment/water/waste_water.asp.)

The owner will need to lodge an application to install/operate a Sewage Management System under the Local government act 1993, Section 68. Council will require the owner to have selected an AWTS manufacturer and provide Council with the necessary plans and specifications including NSW Health Accreditation, tank dimensions and capacity, operation and maintenance details, plus Licensed Plumber's name, address, phone number and license number.

The AWTS will be installed and maintained in accordance with Section 5 of the guidelines 'On-site Sewage Management for Single Households' (Department of Local Government, 1998) and AS/NZS 1547-2012 'On-site Domestic Wastewater Management' (Standards Australia, 2012). **Upon approval from Penrith Council, the owner is to enter into a servicing contract with an approved servicing agent for the life of the system. Copies of the written service reports should be lodged with Penrith Council following each quarterly service.**

6.2 LOCATION OF PROPOSED AWTS

The location of the AWTS should be decided in conjunction with the licensed plumber in consultation with the property owner. The AWTS must be positioned on a stable, level base and be downslope of the building so there is sufficient fall from drainage outlets in the dwelling. The location of AWTS must be:

- The exact location of the AWTS is to be decided by the installer in consultation with the property owner.
- It is to be at least 1.5m from any building.
- A power supply (and telephone line if telemetry or an automated monitoring/ alarm is fitted), will be required to deliver power to the treatment unit.
- Shall be located above the 1% AEP (1:100) flood contour.

AWTS installation must comply with the manufacturer's recommendations, AS/NZS 3500.2:2018 Plumbing and Drainage Part 2 Sanitary Plumbing and Drainage' and Council requirements.

6.3 Installation of pipes

The sewer pipes between the proposed secondary dwelling, AWTS and irrigation area must conform with 'AS/NZS 3500(Set):2015 Plumbing and Drainage Set' specifying the nominal pipe sizes and respective minimum grades. Table 1 contains these specifications.

In addition, where a sewer carrying untreated wastewater to a treatment system is longer than 60 metres, the minimum grade should be doubled, and inspection ports should be installed at least every 30 metres or at an angle or change of grade.

The sewer pipes between the plumbing amenities, AWTS and irrigation area must be buried at a depth that provides protection against mechanical damage or deformation, in accordance with 'AS/NZS 3500.2:2018 Plumbing and Drainage Set'. Table 2 shows the minimum pipe depth for trafficable areas.

TABLE 1 Minimum pipe diameter and grade calculations

Nominal pipe size (DN)	Minimum grade %	Minimum grade ratio
65	2.5	1:40
80	1.65	1:60
100	1.65*	1:60
125	1.25	1:80
150	1.00	1:100

* Except for drains from septic tanks, sewage treatment plants and unvented discharge pipes from tundishes, which may have a minimum grade of 1%,
 Source: 'AS/NZS 3500.2:2018 Plumbing and drainage Part 2 Sanitary plumbing and drainage' Table 3.4.1. NB: pipe grades are expressed as a percentage of vertical to horizontal distances.

TABLE 2 Minimum pipe depth for trafficable areas

Location	Minimum depth of cover (mm) for all materials other than cast iron
Where subject to vehicular traffic	500
Elsewhere	300

Source: 'AS/NZS 3500 (Parts 0-4):2018 Plumbing and drainage Set'. Table 3.7.2 Minimum Cover for Buried Pipes'

7. SIZING OF SOIL ABSORPTION BEDS

The soil absorption bed can be constructed within the range of widths and depths shown in Table 3 (AS/NZ1547, 2012). The bed can be no deeper than 600mm and no wider than 4m. For this site, the proposed base of the bed is 450mm below ground surface (300mm aggregate and 150mm topsoil).

TABLE 3 DIMENSIONS FOR CONSTRUCTING SOIL ABSORPTION BED

	Typical dimensions (mm)	Maximum (mm)	Minimum (mm)
Width	1000-4000	4000	1000
Depth of aggregate	300-600	600	300
Depth of topsoil	100-150	150	100
Spacing between adjacent beds	-	NA	1000

Source: 'AS/NZS 1547:2012 On-site domestic wastewater management

The size of the soil absorption bed is calculated using the formulae in AS/NZ 1547(2012). It is based on design flow rate, design width and Design Loading Rate (DLR), which is the amount of effluent that, over the long-term, be applied each day per area of an infiltrative surface without failure of the infiltrative surface. AS/NZ1547(2012) recommend a DLR of 10mm/day for light clay soils.

The AS/NZ1547(2012) method for calculating bed size is as follows:

$$L = \frac{Q}{DLR \times W}$$

Where

- L = Length in m
- Q = Design daily flow in L/day (**1200L/day**)
- W = Width in m
- DLR = Design Loading Rate in mm/d (**10mm/d**)

Based on the above formulae and assumptions described in this report, the soil absorption bed configuration must be **120m²**. **The proposed configuration will include TWO beds, measuring 20m x 3m each.**

As per Penrith City Council's DCP and AS/NZS 1547:2012, an additional 100% reserve area (120m²) must be available as the alternative irrigation area for future use. This reserve area is compliant for soil absorption beds.

8. SUMMARY

This assessment recommends the following:

- Installation of an Aerated Wastewater Treatment System capable of treating 1200L/day; and
- Installation of 120m² disposal area as soil absorption beds as described in the Appendix and shown on the Site Plans.
- Allocation of an additional 120m² as reserve disposal area as shown on the Site Plans.
- Installation of a downslope diversion bank as described in the Appendix and shown on the site plans.
- The owners have the choice to swap which beds will be made the primary absorption beds, and which will be made reserve.

9. REFERENCES

Department of Local Government (1998) *On-site Sewage Management for Single Households*. NSW Government.

Standards Australia (2012) Australian/New Zealand Standard 1547:2012 *On-site domestic wastewater management*. Standards Australia.

NSW Health Septic Tank Accreditation Guidelines (2001).

Hazelton, P.A and Murphy, B.W ed. (1992) *What Do All the Numbers Mean? A Guide for the Interpretation of Soil Test Results*. Department of Conservation and Land Management (incorporating the Soil Conservation Service of NSW), Sydney.

Penrith City Council's On-site Sewage Management and Greywater Reuse Policy.

APPENDIX I Designer Producer Statement

DESIGN PRODUCER STATEMENT

On-site Wastewater and/or Effluent Disposal System Design

ISSUED BY: Harris Environmental Consulting
TO: Penrith Council
DA NO:
TO BE SUPPLIED TO: Brian Longbottom
IN RESPECT OF: Soil and Site Assessment for Onsite Wastewater management, 14 Mount Vernon Road, Mount Vernon, NSW
AT: Lot/DP: Lot 123 DP 32140

Harris Environmental Consulting has been engaged by Brian Longbottom to provide the technical design details for an on-site wastewater system.

The design has been carried out in accordance with:

- SCA, 2012 'Developments in Sydney's Drinking Water Catchment- Water Quality Information Requirements'
- DLG, 1998 'Environment and Health Protection Guidelines: On-site Sewage Management for Single Households'
- AS/NZS 1547:2012 'On-site Domestic Wastewater Management'

For details of site assessment and design, refer to **the Soil and Site Assessment for Onsite Wastewater management, 14 Mount Vernon Road, Mount Vernon, NSW**, dated February 16, 2022

This System Design was prepared with reference to SCA, 2012 'Designing and Installing On-Site Wastewater Systems'

This is an independent design, covered by a current policy of Professional Indemnity Insurance.

DECLARATION:

I believe on reasonable grounds that this design has been carried out in accordance with agency and council requirements, and best practice in on-site wastewater design principles and procedures.

NOTE: This statement does not approve the installed system.

Under certain conditions, **Harris Environmental Consulting** is available to certify the installed system. These conditions include:

- the technology supplier(s) take(s) full responsibility for the stated quality and performance of technologies and other equipment supplied
- the installer(s) take full responsibility for installing the system as specified by all conditions of consent and **Harris Environmental Consulting** design reports unless departure from the station specification(s) is subsequently agreed between the installer and **Harris Environmental Consulting** and approved by the consent authority
- **Harris Environmental Consulting** is to be informed before installation, and engaged, under separate contract, if required to supervise installation of all specified system components.

DISCLAIMER:

Approval is to be sought from **Harris Environmental Consulting** should variations to the specification and layout in this report/ drawing be considered necessary by the installer before or at the time of installation. Failure to do so will invalidate the Design Producer Statement and **Harris Environmental Consulting** will no longer take responsibility for the design.

The client is to make full disclosure of relevant information on existing and/or proposed activities on the site that will influence estimation of likely daily wastewater quantity (based on the number of potential bedrooms and other wastewater producing activities) and quality (in particular any chemicals in the water supply and/or wastewater stream potentially toxic to biological wastewater processes). This design is based on the site assessment carried out by **Harris Environmental Consulting**.

Subsequent changes to the site that might affect the topography and soil profiles are to be notified by the client. Failure, by the Client, to provide this information will invalidate this Design Producer Statement.

Name Sean Harris, Harris Environmental Consulting

Signature



Msc Env Science (UOW), Grad dip Nat Res (UNE),
BscAppSc, Agriculture (HAC)

Title: Soil and Site Assessment for Onsite Wastewater management, 14 Mount Vernon Road, Mount Vernon, NSW

Date: February 16, 2022

APPENDIX II CONSTRUCTION OF SOIL ABSORPTION BEDS

The process for constructing soil absorption beds is described below:

Step 1 Site Preparation

Obtain a copy of the council approved plans and conditions of consent. Accurately locate beds as shown on the site plans and according to the specified and approved design and/or any covenant. Check the location of all constructed beds against the approved site plans. If there is any change in their position from the site plans, a Section 96 application (from the *Environmental Planning and Assessment Act 1979*) must be made to the council to alter their position.

Step 2 Positioning

Build the bed along the contours and use laser levelling to ensure that the base is exactly level. If this does not happen, distribution will not be even and one part of the bed will be more heavily loaded. This could cause the most heavily loaded part of the bed to fail prematurely, with further creeping failure as the effluent is forced to more distant parts of the bed.

Step 3 Timing

Build beds during fine weather. If it rains before beds are completed, they should be covered to protect them from rain damage. Once dug, complete the bed promptly to avoid foreign material being washed into the open bed.

Step 4 Excavation

Carefully excavate the base of any bed and level it with a dumpy or laser level. The bed must be level along and across the line of the bed. If there is a slope across the base of the bed, the effluent will drain to and preferentially load the downslope side of the bed, which may then fail or overflow.

Where beds are dug along the contour on sloping ground by an excavator that does not have a pivoting bucket, the base of the bed will probably be cut parallel to the ground surface. In this case, the base of the bed will have a fall towards the downslope side. The bed should be further hand dug to level the base and stop excessive effluent accumulating against the downslope wall of the bed.

Step 5 Construction

The pipe work that distributes effluent into each bed shall include a tap/valve to enable flows to be managed between beds so individual beds can be rested off-line. A brief resting phase is needed to break down the microbial biomass that develops around the bed that can eventually lead to its failure.

The effluent will be distributed in the bed using a 100mm PVC pipe laid level onto a 200mm depth of 20-40mm aggregate.

The pipe will be drilled out with 10mm deburred holes every 30cm, and 20 degrees off the bottom of the pipe. Seep holes of 5mm should be sited at 2m intervals along the bottom of the pipe.

Once laid, the pipe has a 50mm cover of aggregate. Total aggregate depth is 300mm. The end of each length of pipe will have a capped riser to allow flushing of the distribution pipe.

A capped inspection port to be inserted on downhill side of the trench, using 50mm PVC pipe, slotted entire depth of gravel bed.

Cover gravel with geotextile to prevent topsoil mixing with gravel bed.

Ensure that the sides of beds are not damaged or caused to collapse when the beds are filled with gravel or sand.

Bed can be filled with gravel (typically 20-40 millimetres), but it should not be compacted. Appropriate consideration should be given to bed storage capacity where beds are filled with material other than gravel.

Test the beds with clean water before filling with gravel to ensure effective and even distribution of effluent.

Apply 150 to 200 millimetres of topsoil to the top of the bed and leave it slightly mounded above ground level to allow it to settle and to encourage incident rainfall to be shed away from the top of the bed.

The top of the absorption bed area should be turfed or grass planted to establish vegetation cover promptly after construction. This ensures the best uptake of effluent by evapotranspiration. Ensure that larger deep-rooting plants are not planted close to bed to reduce the chance of root intrusion and clogging of the beds.

A stormwater diversion berm/ drain should be built on sloping sites upslope of the absorption beds.

Step 6 Dosing

Bed is to be pressure-dosed from the AWTS.

Run-on stormwater is to be diverted around bed means of a berm or diversion drain.

APPENDIX III GENERAL RECOMMENDATIONS TO MANAGE WATER QUALITY AND QUANTITY

Insinkerator style kitchen garbage disposal units should be avoided as they increase water consumption and raise the nutrient and BOD concentrations of household effluent.

Water conservation can reduce the volume of wastewater that needs to be treated and discharged on-site. The residence should include appliances that are rated under the Water Efficiency Labelling and Standards (WELS) Scheme that includes:

- i. 4-star dual-flush toilets;
- ii. 3-star showerheads;
- iii. 4-star taps (for all taps other than bath outlets and garden taps);
- iv. 3-star urinals; and
- v. Water-efficient washing machines and dishwashers are to be specified and used wherever possible.

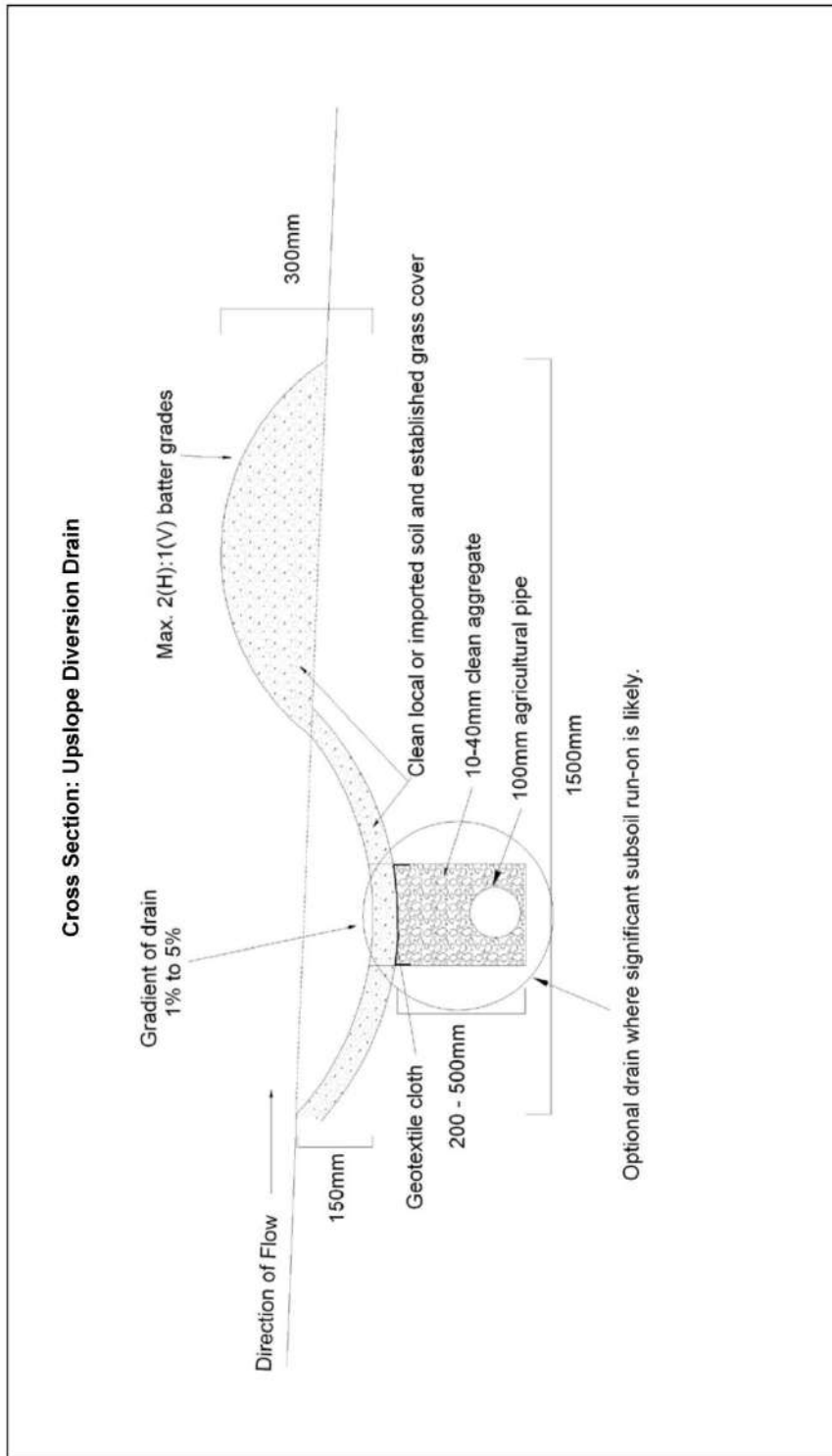
Chemical cleaning compounds and other chemicals that enter the treatment system should be low in phosphate and salt.

Anti-bacterial chemical cleaning compounds and other chemicals that enter the treatment system should be avoided. This includes chlorine, disinfectants, bleaches etc.

APPENDIX IV STANDARD DRAWING 9A - DOWNSLOPE DIVERSION DRAIN



Design and Installation of On-site Wastewater Systems



Standard Drawing 9A - Upslope Diversion Drain
(not to scale)

APPENDIX V PENRITH CITY COUNCIL, TABLE 2

Sizing of AWTS Effluent Disposal Areas			
Suburb	No. of Bedrooms	Surface and Sub-Surface Irrigation Areas (m ²)	
		Reticulated Water	Tank Water
Sandy Soil Types <i>Agnes Banks - east of Castlereagh Road. Castlereagh - north of Devlin Road and east of Castlereagh Road.</i>	2	584	467
	3	779	623
	4	973	778
	5	1168	934
	6	1326	1090
Clay Soil Types <i>Most other areas</i>	2	417	334
	3	556	444
	4	695	556
	5	833	667
	6	972	778

Notes: (1) The irrigation areas in Table 2 are calculated using conservative figures to enable the sustainable management of effluent. A property owner can provide a Wastewater Assessment Report to support a proposal for a smaller irrigation area.

(2) The Effluent Disposal Area (EDA) is based on nutrient balances as they are considered to be the most limiting factors in these areas.

(3) Figures in Table 2 are based on:

- 150 litres per person/day or 120 litres per person/day for tank water supply
- One person per bedroom and two for a master bedroom
- TN output value of 25 mg/L and a Critical Loading Rate of 27 mg/m²/day
- TP output value of 12 mg/L
- P sorption capacity - 600,000 mg/m²/depth for clay soil types or 400,000 mg/m²/depth for sandy soil types
- Design Irrigation rate of 15 mm/week for clay soil types or 35 mm/week for sandy soil types.

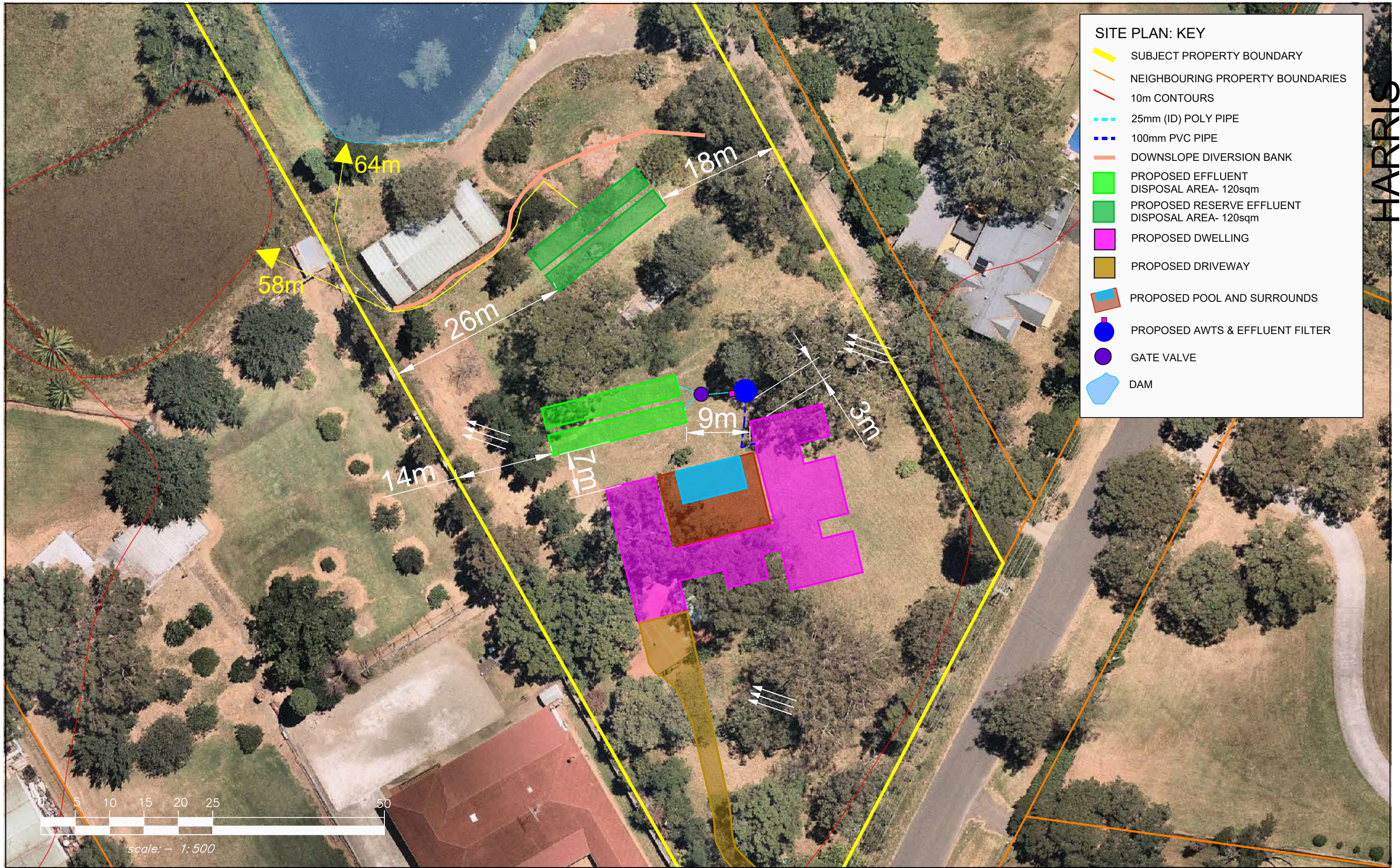
(4) A Wastewater Assessment Report is required for applications with more than 6 bedrooms.

(5) Council assesses effluent loading based on two persons for a master bedroom, two persons for a guest room and one person per additional bedroom. A study or any other room that has the potential to be used as a bedroom will be considered as an additional bedroom.

APPENDIX VI REQUIRED BUFFERS

The following buffers must be applied when installing all onsite sewage management systems in accordance with the Penrith Council Development Control Plan

SYSTEM	BUFFER DISTANCES
All Onsite Sewage Management Systems	<ul style="list-style-type: none"> • 100 metres to domestic groundwater well • 100 metres to permanent surface waters (e.g. rivers, creeks, streams, lakes etc.) • 150m to SCA named rivers • 40 metres to other waters (e.g. dams, intermittent water courses, overland flow paths etc.) • 15metres from in-ground water tank • 1 metre from the drip line of native trees and shrubs
Surface spray irrigation	<ul style="list-style-type: none"> • 6 metres if area up-slope and 3 metres if area down-slope of buildings, driveways and property boundaries • 15m to dwellings • 3m to paths and walkways • 6m to swimming pools
Subsurface irrigation	<ul style="list-style-type: none"> • 6 metres if area up-slope and 3 metres if area down-slope of buildings, driveways and property boundaries
Absorption system	<ul style="list-style-type: none"> • 12m if area up-slope and 6m if area down-slope of property boundary • 6 metres if area up-slope and 3 metres if area down-slope of buildings, driveways and property boundaries



SITE PLAN: KEY	
	SUBJECT PROPERTY BOUNDARY
	NEIGHBOURING PROPERTY BOUNDARIES
	10m CONTOURS
	25mm (ID) POLY PIPE
	100mm PVC PIPE
	DOWNSLOPE DIVERSION BANK
	PROPOSED EFFLUENT DISPOSAL AREA- 120sqm
	PROPOSED RESERVE EFFLUENT DISPOSAL AREA- 120sqm
	PROPOSED DWELLING
	PROPOSED DRIVEWAY
	PROPOSED POOL AND SURROUNDS
	PROPOSED AWTS & EFFLUENT FILTER
	GATE VALVE
	DAM



Issue:	Description:	Date	Drawn	Approved	North
A	Issue for client review	24/3/21	LH	SH	
B	Amended dwelling location	16/02/22	MS	SH	

CLIENT:

PROJECT MANAGER:
BRIAN LONGBOTTOM

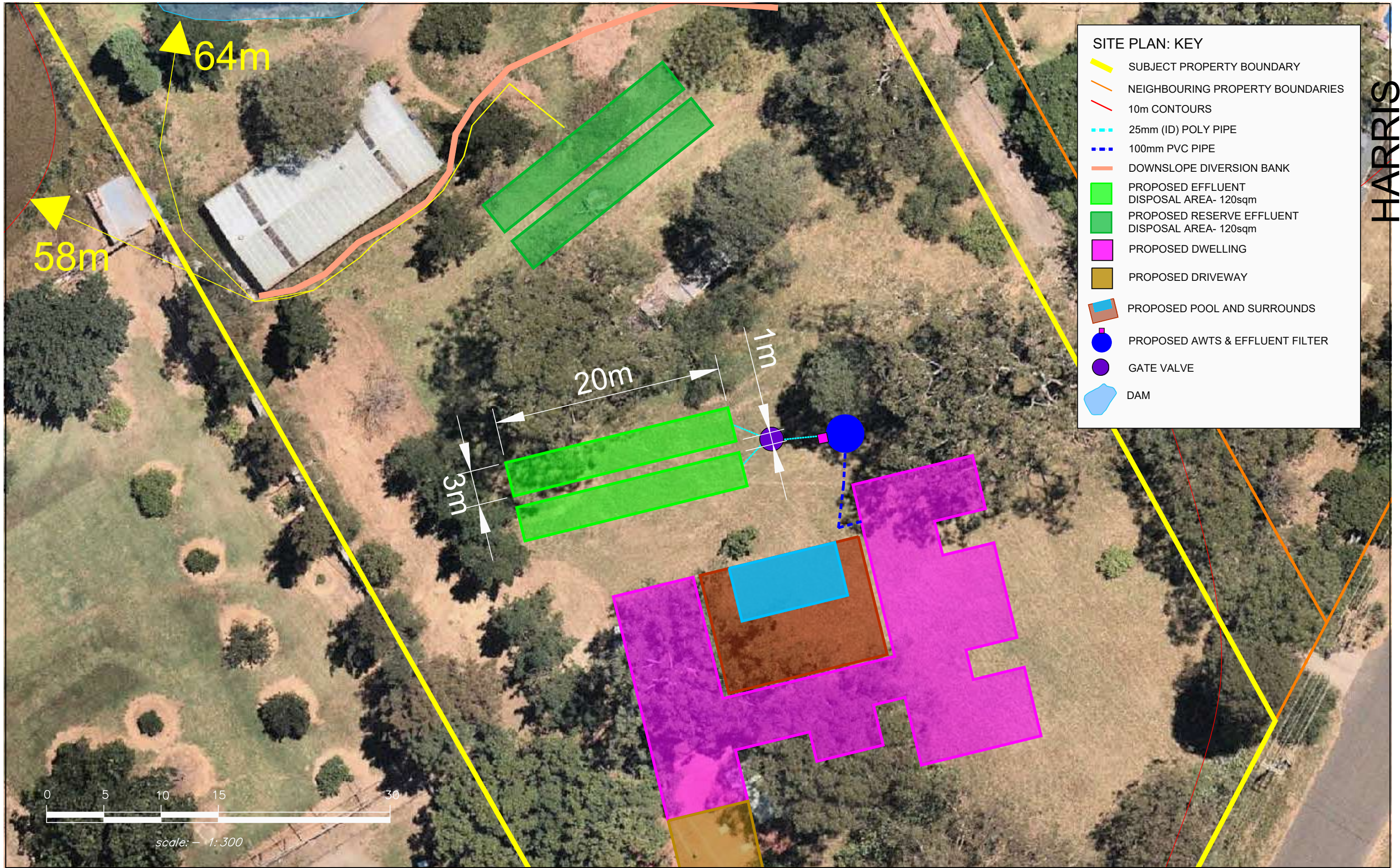
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Wastewater | Bushfire | Stormwater

Project:
PROPOSED DWELLING

LOT 123 DP 32140
14 MOUNT VERNON ROAD, MOUNT VERNON
LGA: PENRITH

Drawing Title: WASTEWATER MANAGEMENT PLAN DETAILS SHEET No.1				
Drawn: MS	Date: 16/02/2022	Paper Size: ISO Expand A3	Q.A. Check: Complete	Date: 16/02/2022
Designed: MS	Our reference: 4316WWW	Scale: 1:500	Dwg. No. #1	Issue: B



SITE PLAN: KEY

- SUBJECT PROPERTY BOUNDARY
- NEIGHBOURING PROPERTY BOUNDARIES
- 10m CONTOURS
- - - 25mm (ID) POLY PIPE
- - - 100mm PVC PIPE
- DOWNSLOPE DIVERSION BANK
- PROPOSED EFFLUENT DISPOSAL AREA- 120sqm
- PROPOSED RESERVE EFFLUENT DISPOSAL AREA- 120sqm
- PROPOSED DWELLING
- PROPOSED DRIVEWAY
- PROPOSED POOL AND SURROUNDS
- PROPOSED AWTS & EFFLUENT FILTER
- GATE VALVE
- DAM



Issue:	Description:	Date	Drawn	Approved	North
A	Issue for client review	24/3/21	LH	SH	
B	Amended dwelling location	16/02/22	MS	SH	

CLIENT:

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 ABN: 54128740549
 Wastewater | Bushfire | Stormwater

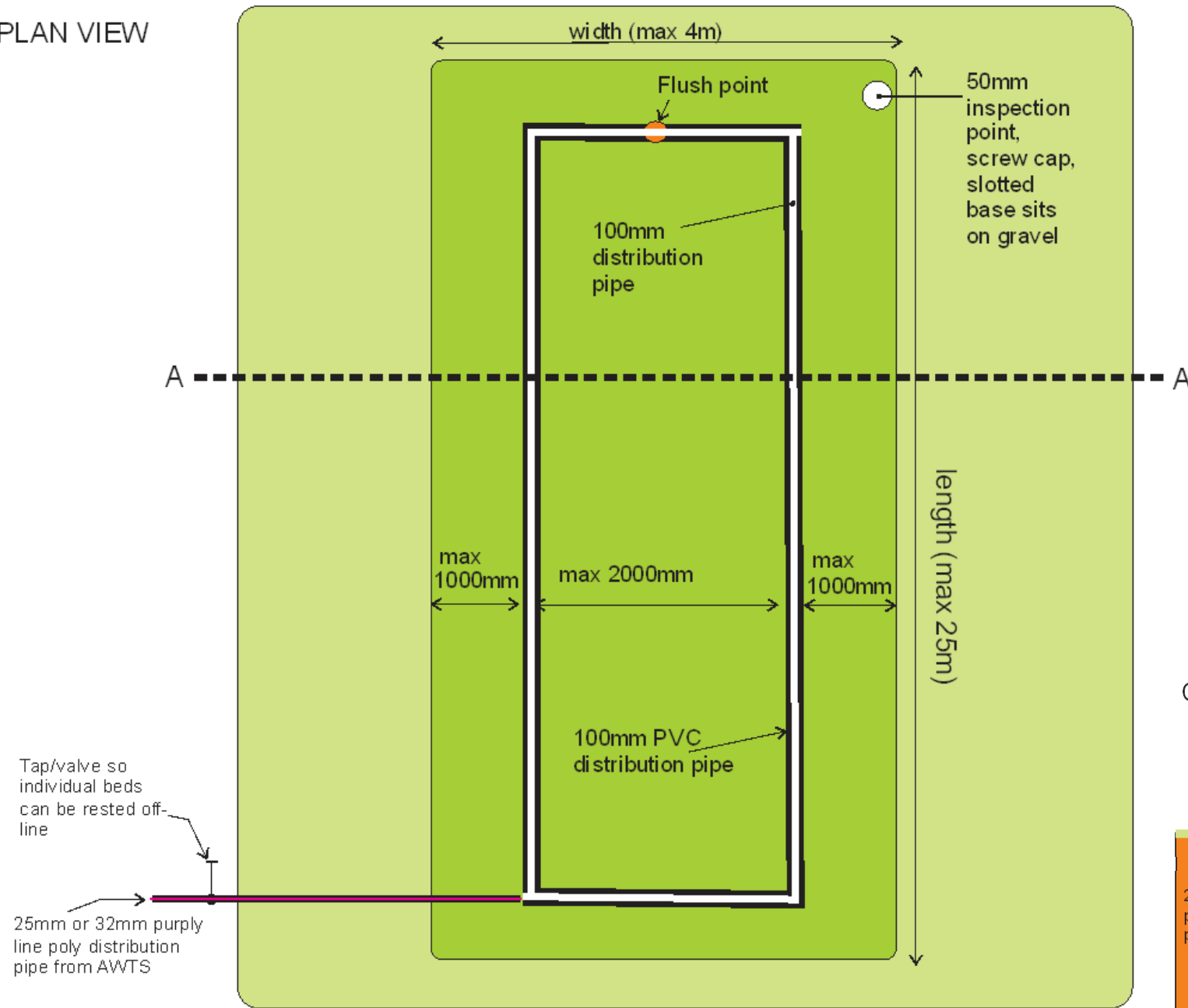
Project:
PROPOSED DWELLING
 LOT 123 DP 32140
 14 MOUNT VERNON ROAD, MOUNT VERNON
 LGA: PENRITH

Drawing Title:
**WASTEWATER MANAGEMENT PLAN
 DETAILS SHEET No.2**

Drawn: MS	Date: 16/02/2022	Paper Size: ISO Expand A3	Q.A. Check: Complete	Date: 16/02/2022
Designed: MS	Our reference: 4316WWW	Scale: 1:300	Dwg. No. #1	Issue: B

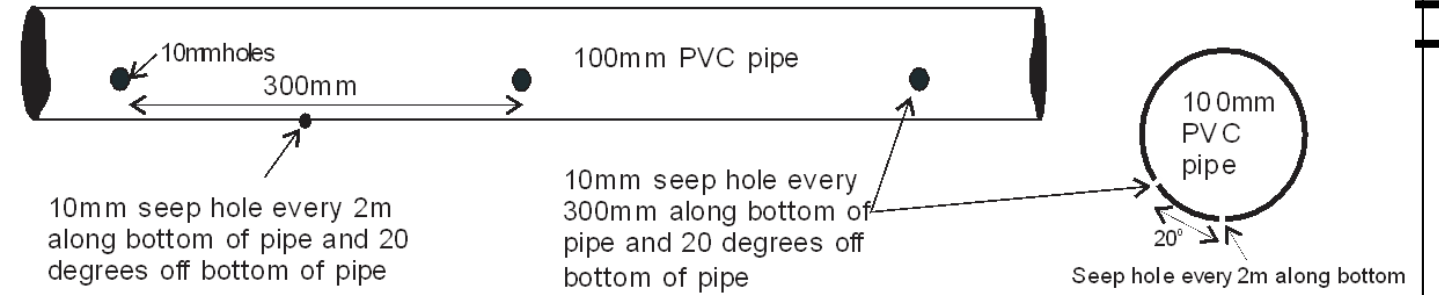
DESIGN AND CONSTRUCTION

PLAN VIEW

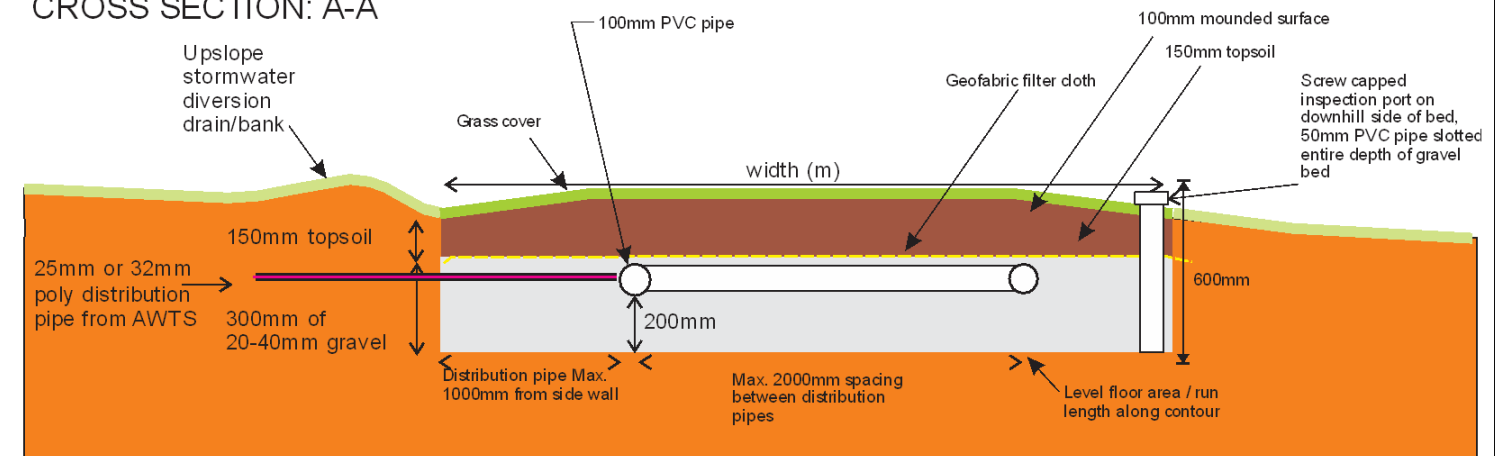


DISTRIBUTION PIPE

Detail of holes to be drilled in distribution pipe



CROSS SECTION: A-A



Issue:	Description:	Date:	Drawn:	Approved:	North
A	HEC Standard Drawing		PS	SH	

Client


Harris
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 Wastewater | Bushfire | Stormwater

Project

Drawing Title: SOIL ABSORPTION BED STANDARD DRAWING			
Drawn: PS	Date:	Scale: NTS	Q.A. Check: Date:
Designed: PS	Our reference:	Dwg. No.:	Issue: