Site Constraints to
On-Site Wastewater Treatment & Disposal
for Rezoning of
1059A Grose Vale Road, Grose Vale, NSW

Report No. TFA3410/01

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Date: 22 March, 2013

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1. BACKGROUND

Toby Fiander & Associates Pty Ltd has been commissioned to provide a short report that examines the site constraints to onsite disposal of wastewater at 1059A Grose Vale Road, Grose Vale, NSW. The land is described as Lot 2 in DP270237.

1.1 Site Location

The site is located as shown in **Figure 1**. Soil was described on the Penrith Soil Conservation map sheet, reproduced in **Figure 2**. A preliminary assessment of soil was also made on site.

1.2 Site Description

The site is principally grazing land and appears to have been used for that purpose for some time.

2. SOIL ASSESSMENT

Based partly on the Soil Landscape assessment of McInnes (1997) and partly on site observation the the soil is principally Luddenham, which of the common local soils is among the best for wastewater disposal by both irrigation and soakage methods. **Figure 2** is derived from McInnes (1997). It also shows Gymea soil along the drainage lines. Gymea soil can be used for disposal provided minor filling and mixing is also undertaken. No Gymea soil was observed in locations where wastewater disposal is likely.

3. SEPARATION ASSUMPTIONS

The following separation assumptions were made based on the published standards and experience with Council's previous approvals.

6 metres if area up-gradient and 3 metres if area down-gradient of driveways and property boundaries,
15metres to dwellings for surface irrigation and/or 6 metres to dwellings for sub-surface irrigation,
3 metres to paths and walkways,
6 metres to swimming pools,
100 metres to (named) watercourses,
40 metres to dams and drainage lines.

It was assumed that only where water could enter a dam or other body did the 40m separation apply.

An area of land with vegetation is prevented from having building development by a Section 88B instrument. It was assumed this would also affect wastewater disposal on the four rear lots, but appears to be over-ridden by other constraints for the most part.

4. SIMPLIFIED TOPOGRAPHIC ANALYSIS

Land with a surface gradient of steeper than one in six (~16%) was assumed to be too steep,based on published standards and Council's previous approvals.

The discussion developed in OSWMSSH(1998) provides for steeper grades with care and in specific circumstances, but this was not assumed.

5. POSSIBLE MODIFICATIONS

There are locations on the site which are not likely to remain, For example, the dam on proposed Lot 1 is likely to be removed.

The roadway is likely to become the local low point and the pathway for overflow from the dam shown in **Figure 3** is likely to be graded to the road. Lowering the road by about 0.6m would win sufficient material to supplement what could obtained in each lot to enable to this regarding to occur. This is part of the normal earthworks required for subdivision.

6. SIMPLIFIED ASSUMPTIONS ABOUT DISPOSAL AREAS

Based on previous analysis, published standards and Council's previous approvals, an area of 1000m^2 was assumed to be required for irrigation disposal. Where this may not be available, such as proposed Lots 1, 8 and 9 (see **Figure 3**), it was assumed that disposal would be possible by one of the other methods shown in AS1547-2012.

If a mound was used (Lots 1, 8 and 9) the Wisconsin Mound would take approximately 50m^2 of land, with a requirement for a further area of similar size. A platform would need to be formed with earth batters a grade of three horizontal to one vertical. Based on experience on other sites, an area of about 200m^2 of land would be adequate. As the filling has no direct purpose in the disposal, it was considered that filling could be partly on land that was steeper than one in six, or a buffer zone to a road boundary, if necessary.

Other systems may also be suitable, such as a evapotranspiration beds. In any case, there is sufficient suitable land available on each block of the indicative subdivision to allow for adequate disposal with minor modification of land contours, if any.

The constraints are shown on **Figure 3**, which was prepared on a Council contour plan base. Constraints were shown by Toby Fiander & Associates.

7. CONCLUSIONS

It is concluded that there is sufficient suitable land available on each block of the indicative subdivision to allow for adequate disposal.

8. REFERENCES

McInnes, S.K. (1997) Soil Landscapes of the Penrith 1:100 000 Sheet. Soil Conservation Service of NSW, Sydney.

OSWMSSH(1998) Environment and Health Protection Guidelines - On-Site Sewage Management for Single Households. Dept. of Health, Dept. of Land & Water Conservation, Dept. of Local Govt & NSW EPA

Standards Australia (2012) AS1547:2012 On-site Domestic-Wastewater Management. Sydney.

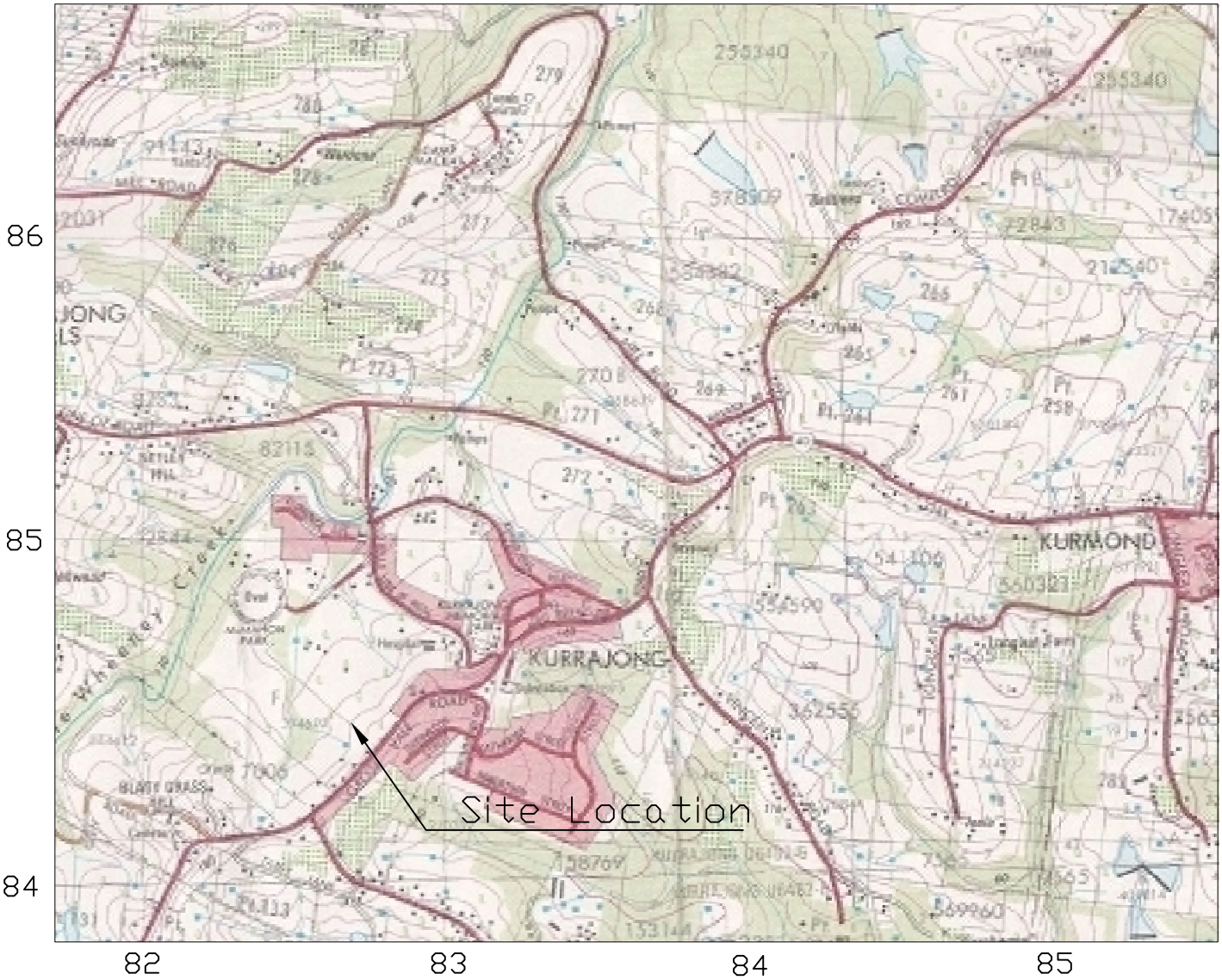

FIGURE 1
SITE LOCATION

Topographic & Orthophoto Map Sheet
Kurrajong 1:25 000

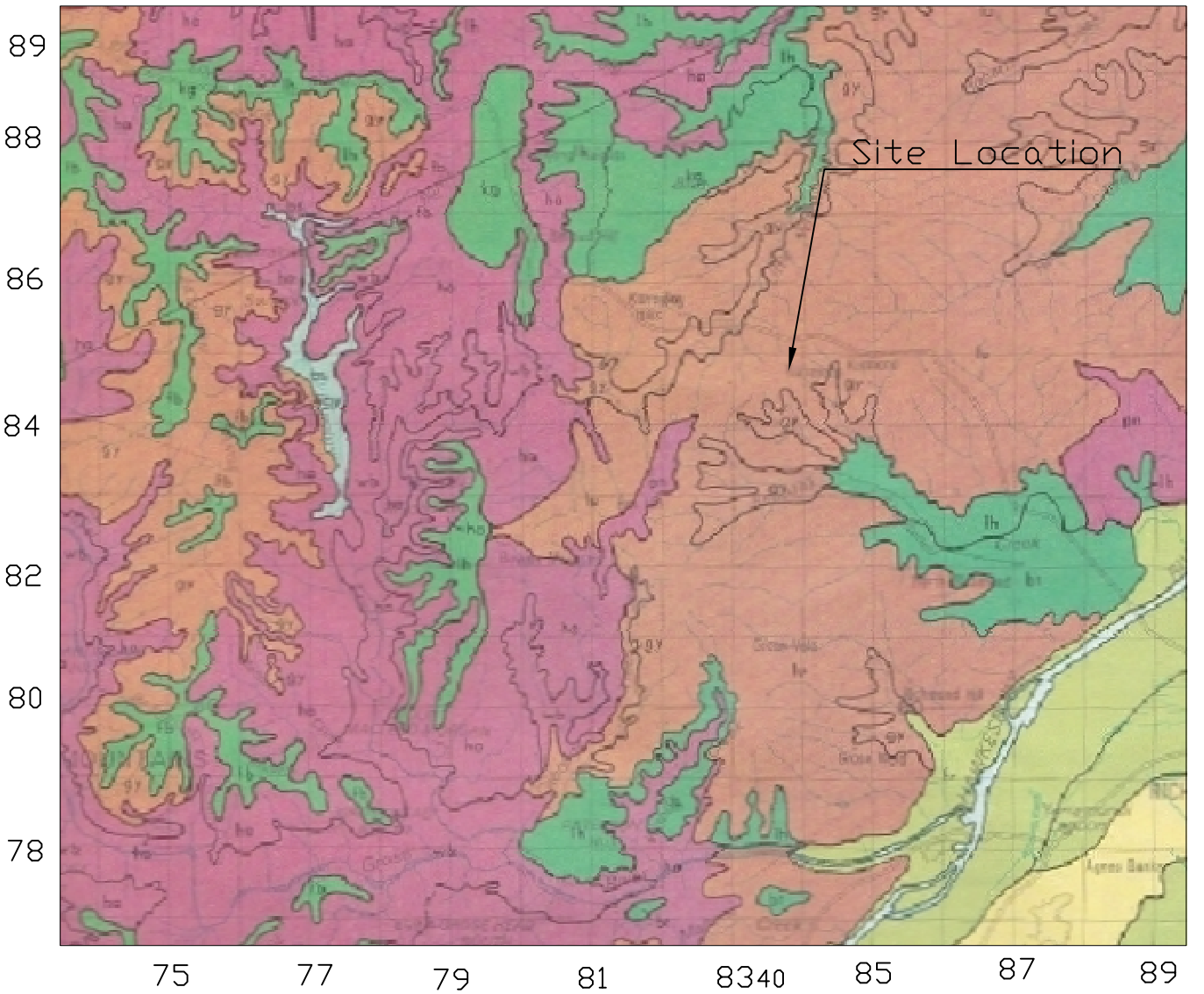

FIGURE 2
SOIL MAP

Soil Landscape Series Sheet 9030
Penrith 1:100 000

Legend

- Contours
- Suburbs
- Road Names
- Pending Subdivisions
- Land Parcels
- Roads
- Creeks_Rivers
- Creeks_Rivers_Poly

LEGEND

- Boundary Constraints
- Creek Constraints
- Slope Constraints

Constraints by Toby Fiander & Associates

N W E S

0 12.5 25 50
Metres

1:1,200 @A3

The scale displayed is approximate only. Hawkesbury City Council takes no responsibility for any errors or omissions. The assets shown on this map indicate the presence and general location only. Its accuracy or completeness is not guaranteed. Contours are to be used as a guide. A survey maybe required for more accuracy.

Date: Wednesday, August 22, 2012

Lot 2 DP 270237 - 1059A Grose Vale Road, Kurrajong