

PORTIONS 54 & 56 OF FARM GROENFONTEIN NO 716, PAARL:
PROPOSED STORMWATER MANAGEMENT

Locality and Description

Portions 54 & 56 of Farm Groenfontein No 716, Paarl are located ± 3.0 km northwest of Klapmuts off Divisional Road 1104. (See Fig 1)

Portion 53 is currently partially used for the manufacturing of compost. The only buildings are a vacant shed and a small office building being used by the compost staff. An earth dam is situated in the north western corner of the property.

Portion 54 is not being used for any activity and the two existing sheds are vacant. There is an earth dam on the north western boundary.

Both sites have an even grade of $\pm 2\%$ from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54.

No geological investigation was carried out on site, but visual observations indicate that the general geology is made up of clayey material.

Stormwater Runoff

The mean average rainfall for the area is ± 555 mm with an associated runoff volume of $\pm 112\,000$ m³.

The two portions fall within a relatively small catchment area of ± 18 ha which drains to a natural, but currently dry, water course to the west. (See Fig 2)

Runoff Management

Due to the nature of compost manufacturing and the potential pollution of water courses all runoff across the sites have to be retained on the properties.

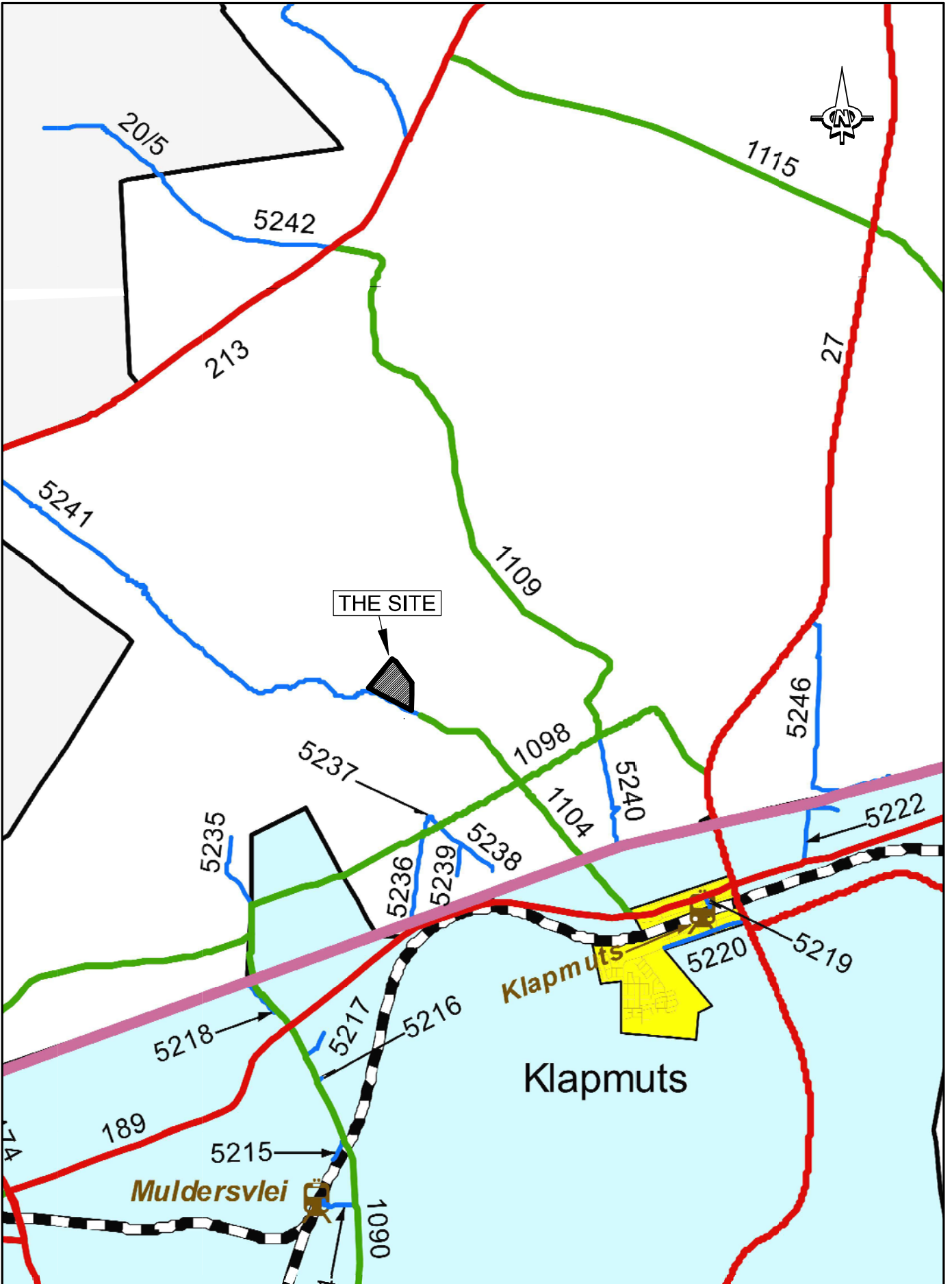
In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 53. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ± 13 ha.

The existing two dams have a combined storage capacity of $\pm 6600\text{m}^3$. It is envisaged that the existing dams will be reshaped and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land. (See Fig 3) The proposed dam with a 3m high wall will have a capacity of $\pm 13\,800\text{m}^3$ including a spare capacity of $\pm 15\%$. If the wall is raised to 3.5m the storage capacity will increase to $\pm 15\,600\text{m}^3$ with a spare capacity of $\pm 30\%$.



In order to manage the volume of water in the dam and to prevent overtopping the water will be used in the composting process. It can also be made available to the adjacent vegetable farm for irrigation purposes or carted away by tanker for the same purpose.

Conclusion

Portions 54 & 56 of Farm 716 fall within a relative small catchment area. The existing earth dams will be reconstructed to provide the required capacity to intercept and store stormwater runoff that crosses the two portions. Water collected in the dam will be used in the composting process and could also be made available to adjacent farms for irrigation purposes.





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	CATCHMENT AREA
Scale:	1 : 5000
Date:	SEPTEMBER 2017
Status:	PRELIMINARY
Plan No:	FIGURE 2
	A4
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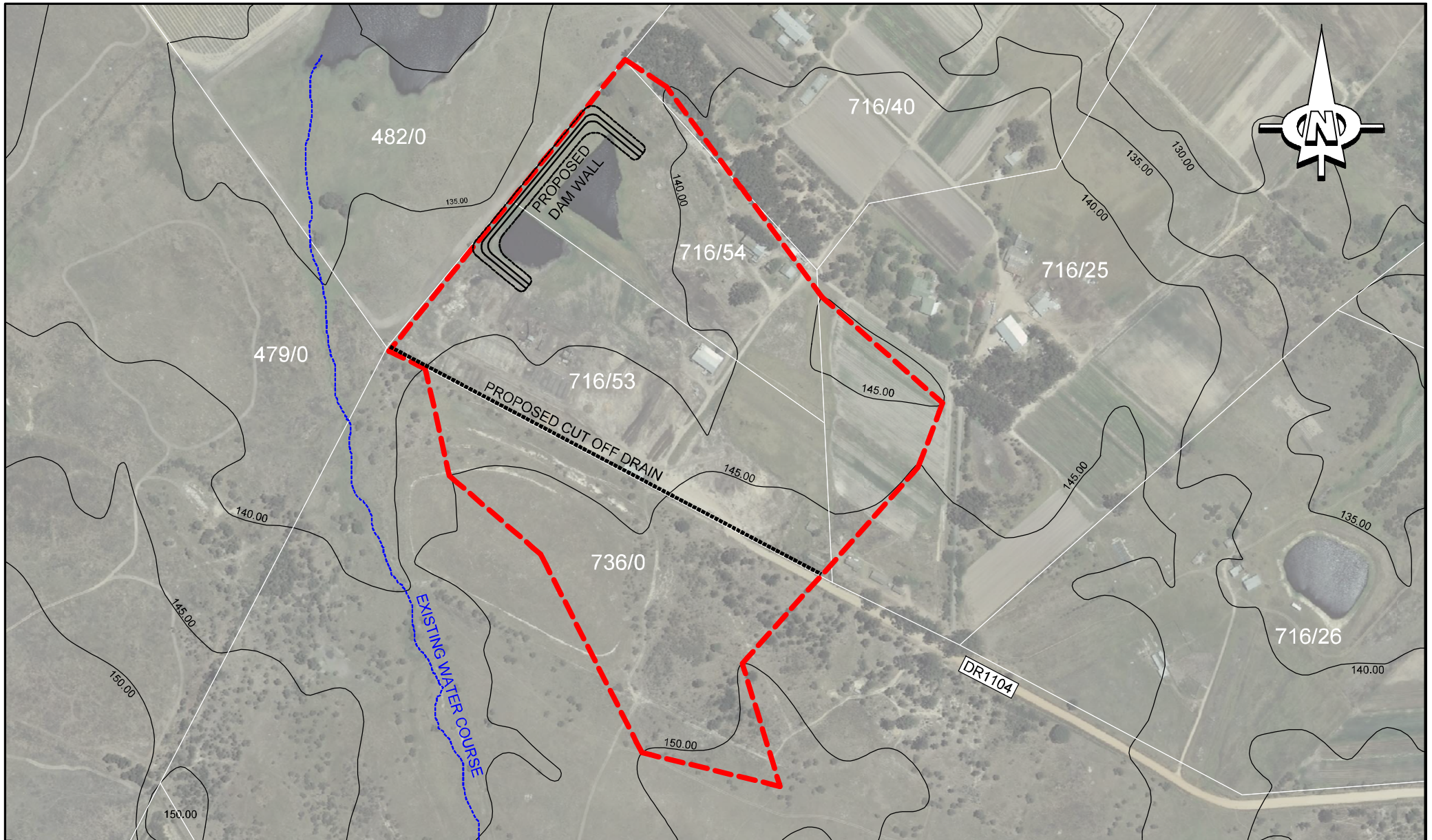


Planned For:

**GROENFONTEIN
 COMPOST FACILITY**

**PORTION 54 & 56 OF THE FARM GROENFONTEIN
 ANNEX NO.716, KLAPMUTS**

CATCHMENT AREA



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