EXECUTIVE SUMMARY OF THE BASIC ASSESSMENT REPORT

PROJECT BACKGROUND

The Stellenbosch Landfill Site (the site) is classified as a General: Medium: leachate positive (G:M:B+) and has been operational since 1966.

The landfill site comprises three cells. Cells 1 and 2 are the oldest cells and have reached maximum capacity. Waste disposal to these cells ceased during 2013, with no rehabilitation undertaken to date. Cell 3 is a fairly new cell and has been operational since April 2013. It will remain operational until its capacity of 600 000 cubic metres is reached.

Stellenbosch Municipality intends to decommission and rehabilitate the licensed Stellenbosch Landfill Site in terms of Regulations pursuant to the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA), the National Environmental Management: Waste Amendment Act (No. 26 of 2014) (NEM:WAA) and National Environmental Management Act (Act No. 107 of 1998), as amended (NEMA), as the site is reaching maximum capacity.

In terms of the 2010 Environmental Impact Assessment (EIA) Regulations, the Listed Activities relevant to this application are GN.R 544: 1, 11, 18 and 27, and GN.R 546: 16. In terms of NEM:WA, the proposed decommissioning and rehabilitation would trigger Activity 14 of Category A of Government Notice Number 921. Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed to conduct the Integrated Basic Assessment and Waste Management Licence Application process to obtain Environmental Authorisation (EA) to decommission and rehabilitate the site.

PROPOSED CLOSURE AND REHABILITATION MEASURES

The proposed closure and rehabilitation of the site would ensure that the site is environmentally and publicly acceptable and that it complies with the waste permit and the *Minimum Requirements for Waste Disposal by Landfill, 2nd Edition (DWAF, 1998)* (hereafter referred to as the *Minimum Requirements)*.

The closure and rehabilitation of the site would entail the following:

1. Shaping and scaping of the waste body;
2. The construction of storm water infrastructure;
3. Capping of the waste body in accordance with the *Minimum Requirements*;
4. Concrete palisade fencing;
5. The construction of gravel service / maintenance roads;
6. Vegetative cover of the final landform;
7. The construction of the required end-use infrastructure; and
8. The establishment of a post closure monitoring programme, particularly groundwater monitoring and post-closure gas monitoring.

After the landfill site is closed and rehabilitated, there is an option to use the space for an alternative purpose which is called the end-use. Potential Interested and Affected Parties (I&APs), were provided with an opportunity to comment on five end-use options initially proposed and

recommended for the site[1]. Based on the comments received from I&APs and the feasibility of the proposed end-uses, the list of end-use options was narrowed down to the three most feasible alternatives. The reasons for scoping out the other end-use options are provided in Section E(b) of the Basic Assessment Report.

PROPOSED END-USE ALTERNATIVES

Alternative 1: Open space green landscaping, preferably using indigenous vegetation, coupled with a community upliftment project.

Alternative 2: Methane gas extraction for beneficial use.

Alternative 3: No-go (i.e. no closure, rehabilitation or monitoring, and authorised no end-use) as required in terms of NEMA.

PUBLIC PARTICIPATION PROCESS (PPP)

The PPP to date included the distribution of a Background Information Document (BID) requesting feedback and input on the proposed end-use alternatives. The identified I&APs included landowners and occupiers of the site and adjacent to the site, ward councillors, local and district municipalities, organs of state, local ratepayers, local heritage associations, interest groups and relevant State departments. Advertisement of the availability of the BID was placed in two local newspapers (*Die Eikestad Nuus* and *Stellenbosch Gazette*) as well as one provincial newspaper (*Die Burger*). Site notices were placed at the existing access road to the site off Devon Valley Road, and at the proposed access road off the R310. A3 notices were also erected at the office building at the landfill and at the Stellenbosch Public Library notice boards.

All I&APs were notified of the availability of the Draft Basic Assessment Report (BAR) providing opportunity to comment. The Draft BAR will be available for comment from I&APs until 9 January 2015 and until 26 January 2015 for the Department of Water and Sanitation, which requires a 60 day comment period. A hardcopy of this report will be placed at the Stellenbosch municipal office, the Stellenbosch Public Library, and the Stellenbosch University Library. Furthermore, a digital version will be uploaded onto the Aurecon website (http://www.aurecongroup.co.za/en/public-participation.aspx\) and Stellenbosch Municipality website (www.stellenbosch.gov.za click on Have your Say) for perusal and download. In addition, several Focus Group Meetings, as well as a Public Meeting will take place on 11 November 2014.

SUMMARY OF IMPACT ASSESSMENT

Potential environmental and social impacts associated with the proposed decommissioning and rehabilitation has been assessed as described in Section F of the Draft BAR. The potential impacts are listed in Table 1 below.

Construction phase impacts

The majority of impacts associated with both Alternatives 1 and 2 during construction could be reduced to between very-low and low (-).

[1] These five proposed end-uses were presented in a Background Information Document (BID) as part of the Basic Assessment Process. The BID was circulated to I&APs for comment for a period of 21 days, from 29 August 2014 to 19 September 2014.

For both alternatives, the water quality impairment, loss of aquatic habitat and flow modification impacts could change from a negative to a positive impact by re-establishing a 30 m riparian zone along the Veldwagters River.

An additional positive impact associated with Alternatives 1 and 2 would be employment opportunities (medium (+)). Alternative 1 would result in the improvement to the cultural landscape (low (+)).

Operational phase impacts

During the operational phase, the majority of impacts associated with both Alternatives 1 and 2 could be reduced to between very low (-) and low (-). The positive impacts anticipated for the operational phase are employment opportunities, the visual impacts associated with the rehabilitated vegetation on site and public amenity, and ongoing improvement to cultural landscape (solely Alternative 1).

Decommissioning phase impacts

Alternative 2 might require infrastructure to be removed from site once the landfill gas resource is depleted. The significance of anticipated impacts could all be reduced to between low and very low (-) with mitigation. The impact on cultural landscape is expected to improve to high (+) during the decommissioning phase. The visual impacts associated with construction machinery, dust, lighting at night vehicles is expected to be low (-), depending on the scale of the infrastructure to be removed. Moreover, visual impacts associated with vehicles entering and leaving the site during the decommissioning phase is expected to be medium (-).

No-go alternative

The majority of the potential impacts associated with the No-go alternative are expected to be of high (-) significance and cannot be mitigated if this alternative is implemented. The geotechnical impacts are expected to be of lower significance.

EAPs opinion

Based on the impact ratings provided by the specialists, both Alternatives 1 and 2 could be implemented. The No-go alternative should not be implemented as the impacts associated with it are mostly of high (-) significance.

However, when considering the mitigation measure to include a 500 m buffer around the gas extraction facility proposed by the air quality specialist it appears that it would not be feasible to implement both Alternative 1 and 2 due to the size of the area available for development.

Therefore, the preferred end-use would be informed by the feasibility assessment of gas extraction potential and the comments received from I&APs on the Draft BAR. These will be detailed in the Final BAR.

Table 1 | Summary of significance of potential impacts with and without mitigation

Potential Construction Phase Impacts		**Significance without mitigation**	**Significance with mitigation**
1.	**Slope stability**		
	Alternative 1	Low (-)	Low (-)
	Alternative 2	Low (-)	Low (-)
2.	**Soil Erosion**		
	Alternative 1	Very low (-)	Very low (-)

	Alternative 2	Very low (-)	Very low (-)
3.	**Settlement of Waste**		
	Alternative 1	Very low (-)	Very low (-)
	Alternative 2	Very low (-)	Very low (-)
4.	**Groundwater contamination**		
	Alternative 1	Medium (-)	Low (-)
	Alternative 2	Medium (-)	Low (-)
5.	**Water quality impairment**		
	Alternative 1	Low (-)	Low (+)
	Alternative 2	Low (-)	Low (+)
6.	**Loss of aquatic habitat**		
	Alternative 1	Very low (-)	Low (+)
	Alternative 2	Very low (-)	Low (+)
7.	**Flow modification**		
	Alternative 1	Very low (-)	Low (+)
	Alternative 2	Very low (-)	Low (+)
8.	**Creation of employment opportunities**		
	Alternative 1	Medium (+)	Medium (+)
	Alternative 2	Medium (+)	Medium (+)
9.	**Loss of income for waste pickers**		
	Alternative 1	High (-)	Low (-)
	Alternative 2	High (-)	Low (-)
10.	**Cultural landscape**		
	Alternative 1	Low (-)	Low (+)
	Alternative 2	Low (-)	Low (-)
11.	**Nuisance impacts**		
	Alternative 1	Low (-)	Low (-)
	Alternative 2	Low (-)	Low (-)
12.	**Visual Impacts**		
	Alternative 1	Medium (-)	Low (-)
	Alternative 2	Medium (-)	Low (-)
13.	**Air quality impacts**		
	Alternative 1	N/A – not modelled	N/A – not modelled
	Alternative 2	N/A – not modelled	N/A – not modelled
Potential Operational Phase Impacts		**Significance without mitigation**	**Significance with mitigation**
1.	**Slope stability**		
	Alternative 1	Medium (-)	Low (-)
	Alternative 2	Medium (-)	Low (-)
2.	**Soil Erosion**		
	Alternative 1	Low (-)	Very low (-)
	Alternative 2	Very low (-)	Very low (-)
3.	**Settlement of Waste**		
	Alternative 1	Low (-)	Very low (-)
	Alternative 2	Medium (-)	Low (-)
4.	**Groundwater contamination**		
	Alternative 1	Medium (-)	Low (-)
	Alternative 2	Medium (-)	Low (-)
5.	**Employment opportunities**		
	Alternative 1	Low (+)	Medium (+)
	Alternative 2	Low (+)	Medium (+)
6.	**Cultural landscape**		
	Alternative 1	Medium (+)	High (+)

	Alternative 2	Low (+)	Medium (-)
7.	**Visual Impacts – rehabilitated vegetation and public amenity**		
	Alternative 1	High (+)	High (+)
	Alternative 2	High (+)	High (+)
8.	**Visitors parking and increased traffic**		
	Alternative 1	Low (-)	Very low (-)
	Alternative 2	N/A	N/A
9.	**Visual impacts – gas flaring at night**		
	Alternative 1	N/A	N/A
	Alternative 2	Medium (-)	Low (-)
10.	**Visual impacts – maintenance vehicles entering and leaving site**		
	Alternative 1	N/A	N/A
	Alternative 2	Low (-)	Low (-)
11.	**Ambient PM10 and benzene air quality impacts**		
	Alternative 1	Low (-)	N/A
	Alternative 2	Low (-)	N/A
12.	**Ambient NO_2 air quality impacts**		
	Alternative 2	Medium (-)	Low (-)
Potential Decommissioning Phase Impacts		**Significance without mitigation**	**Significance with mitigation**
1.	**Slope stability**		
	Alternative 2	Medium (-)	Low (-)
2.	**Soil Erosion**		
	Alternative 2	Low (-)	Very low (-)
3.	**Settlement of Waste**		
	Alternative 2	Neutral	Neutral
4.	**Groundwater contamination**		
	Alternative 2	Medium (-)	Low (-)
5.	**Cultural landscape**		
	Alternative 2	Medium (+)	High (+)
6.	**Visual Impacts**		
	Alternative 2- Vehicles entering and leaving the site	Medium (-)	Medium (-)
	Alternative 2- Construction machinery, dust and lighting at night	Medium (-)	Low (-)
Potential No-go Impacts		**Significance without mitigation**	**Significance with mitigation**
1.	**Slope stability**		
	No-go alternative	Medium (-)	N/A
2.	**Soil Erosion**		
	No-go alternative	Medium (-)	N/A
3.	**Settlement of Waste**		
	No-go alternative	Very low (-)	N/A
4.	**Freshwater impacts**		
	No-go alternative	High (-)	N/A
5.	**Groundwater contamination**		
	No-go alternative	High (-)	N/A
6.	**Socio-economic impacts**		
	No-go alternative	High (-)	N/A
7.	**Cultural landscape**		
	No-go alternative	High (-)	N/A
8.	**Visual impacts**		
	No-go alternative	High (-)	N/A

CONCLUSIONS AND EAP RECOMMENDATION

The EAP is of the opinion that both Alternatives 1 and 2 did not pose significant impacts post mitigation. Therefore, any one of these two alternatives could be implemented as the proposed end-uses. This conclusion is based on the assumption that the Stellenbosch Municipality would implement the mitigation measures included in the Environmental Management Plan (EMP) (Appendix H of the Draft BAR).

Way forward

The Draft BAR will be available from **6 November 2014 until 9 January 2015** for a 40-day review period at the Stellenbosch Municipal Offices (71 Plein Street), the Stellenbosch Public Library (Plein Street), and the JS Gericke Stellenbosch University Library (Victoria Street). The Draft BAR is accessible from the Aurecon website (http://www.aurecongroup.co.za/en/public-participation.aspx\) and from the Stellenbosch Municipality website (www.stellenbosch.gov.za click on Have your Say).

You are hereby invited to attend the public meeting to be held on 11 November 2014 from 18:00 to 19:30 at the Devon Valley Hotel, where the content of the Draft BAR will be discussed followed by a question and answer session. Should you wish to attend the public meeting, please rsvp to Sonja Pithey (contact details provided below).

If you would like to obtain more information, submit any comments or register as an Interested and Affected Party, please contact **Sonja Pithey** on or before 9 January 2015.

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