executive summary

REGIONAL WASTE MANAGEMENT FACILITY

Fernview Farm

Lot 7778 Wannamal Road South, Cullalla

Veolia Environmental Services

September 2008

larry smith planning

urban and strategic planning & design

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In association with

Coffey Environments

FirePlan WA

executive summary

1. background

In February, 2007, Veolia Environmental Services (VES) lodged an Application for Approval to Commence Development with the Shire of Gingin for the purposes of a Regional Waste Management Facility within the northern portion of Fernview Farm, Lot 7778 Wannamal Road South, Cullalla.

Council in March, 2007 resolved to consider the application as a "Use Not Listed" under the Rural zoning of the land and to refer the proposal to the EPA for comment. The EPA has assessed the proposal and determined that the project may proceed with conditions. Draft Conditions have been issued and formal approval by the Minister for Environment is expected shortly.

In June, 2007, Council considered a report dealing with acceptance of waste from outside the Shire as part of a broader strategic direction for waste management. The report also expressed the view that further landfills – that is additional to the VES and Ioppolo Road proposals then before the Council – should be avoided on amenity and broader environmental grounds.

In order to provide it with better control of future proposals, Council resolved to amend Town Planning Scheme No 8 to introduce the use of "Sanitary Landfill" and to prohibit the use in all Zones within the Shire; in effect requiring that future proposals would require re-zoning under the Scheme. The resulting amendment to TPS 8 – Amendment 91 – was Gazetted on the 27th May, 2008.

Consistent with Amendment 91 and previous Council resolutions, VES now seeks Council's consideration and support to the re-zoning of portion of Lot 7778 Wannamal Road South, Cullalla for the purposes of a Waste Management Facility.

2. need for facility

The State Government has adopted a "*Statement of Strategic Direction for Waste Management in WA – Vision & Priorities"* to guide the management of the total waste stream within WA which seeks to achieve minimal to zero waste to landfill by the year 2020.

The achievement of zero waste to landfill will require major investment in Alternative Waste Treatment (AWT) technologies requiring substantial capital expenditure and, as a result, implementation of AWT's will occur progressively and slowly over the next 15 years.

Current AWT technologies still require access to landfill to dispose of treatment residues which vary from 15% to 30% of the original volume. While VES strongly supports the Strategy, it must be recognised that zero waste to landfill is an ambitious target.

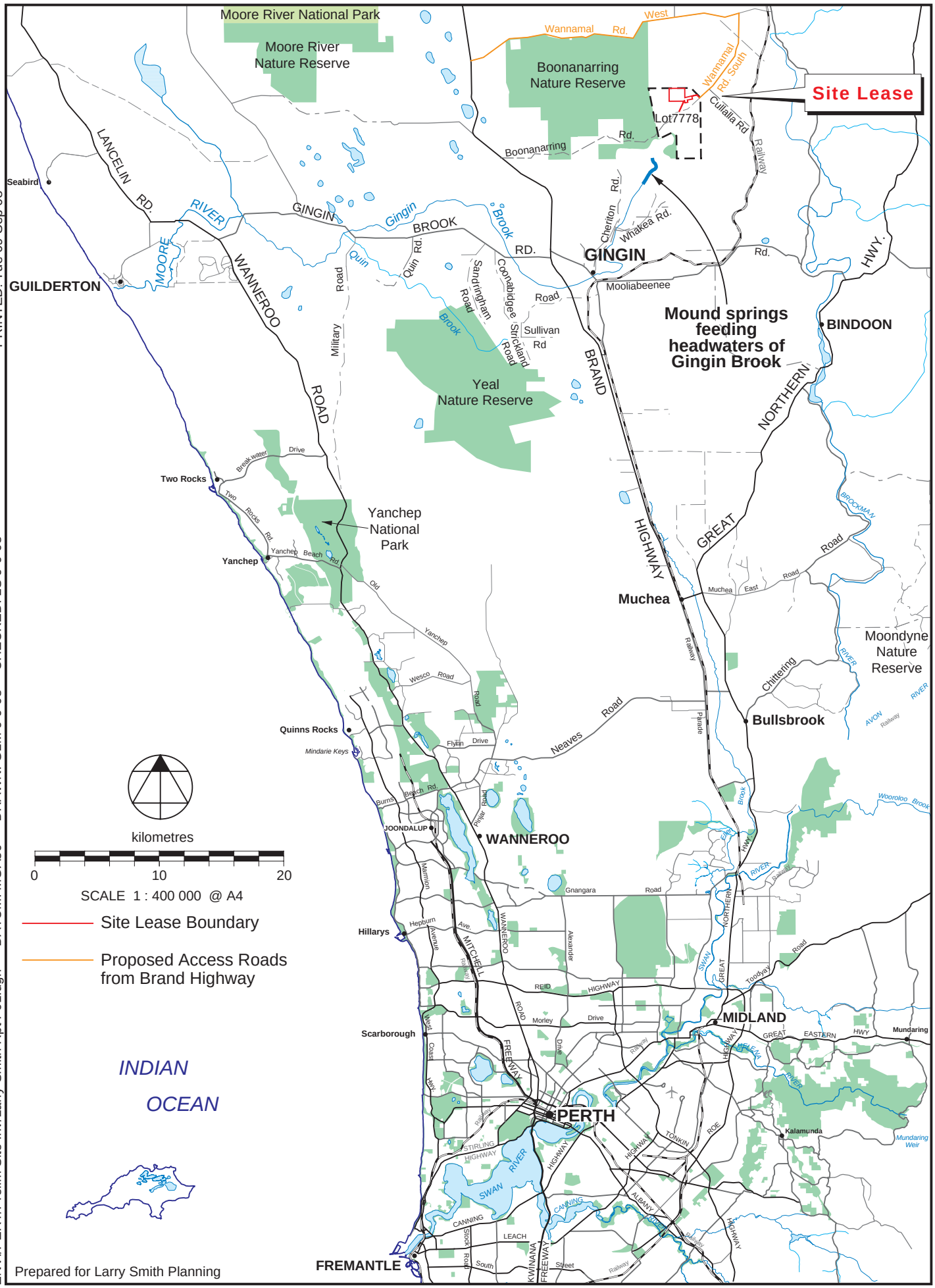
Accordingly, there is a pressing need to ensure that sufficient landfill capacity exists within the system to provide for the safe management of those wastes that cannot be recovered and re-cycled economically from the waste stream.

Following the closure of a number of landfills in recent years, the only currently available landfill sites to service the entire Metropolitan Region beyond 10 years time, or thereabouts, will be Redhill and Rockingham.

Current environmental criteria for the location of landfills effectively preclude the development of new landfills within the Swan Coastal Plain, thereby limiting site opportunities to the foot of the Darling Scarp or areas inland thereof.

Locations south of the Metropolitan Area are limited by considerations of:

- The need to protect basic raw materials (sand, clays, rock);



PRINTED: Tue 09 Sep 08 CHECKED: LS 9-9-08 DRAWN: GLM 9-9-08 DATUM: MGA50 ENVI/PERT/Prelim Site Inv/Larry Smith Rpt F01.dgn

REGIONAL WASTE MANAGEMENT FACILITY
FERNVIEW FARM, GINGIN

LOCATION PLAN

FIGURE 1

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- The presence of major mineral deposits, notably bauxite and associated refinery installations;
- Extensive surface water catchment protection areas;
- Extensive areas of State Forest;
- The distribution and proximity of semi-urban and rural residential settlements; and
- Issues related thereto, including buffers and heavy haulage traffic.

Cumulatively, these factors conspire to force the search for suitable landfill locations to areas north of the Metropolitan Area.

From a more local context the facility will provide an environmentally responsible approach to managing a segment of the waste stream generated not only in the Metropolitan Area but, also within the Shire of Gingin and surrounding Shires of Chittering and Victoria Plains which are typically currently served by small, unlined, un-staffed landfills with limited recycling and recovery services.

It is apparent that with the rapidly expanding population within the Shire of Gingin and the adjacent Shires of Chittering and Victoria Plains, there will be an increased requirement for appropriately managed waste facilities within the region.

VES has recognised the increasing pressures on waste disposal and, as a consequence, has spent the past 24 months developing its proposal for a state of the art waste management facility at Gingin. The proposed facility presents the opportunity to alleviate the pressure on existing waste management facilities, while also offering a sustainable and long term approach to regional waste disposal.

3. site

In November 2003, the Shire of Gingin commissioned Parsons Brinckerhoff to identify areas of the Shire suitable for the establishment of a waste management facility as part of a longer term strategy for consolidating waste management.

The resulting "Fatal Flaw", desktop analysis identified two zones and specifically:

- Zone A : within the North-East of the Shire and centred on Cullalla Road and Wannamal Road South; and
- Zone B : bordered by the Brand Highway and Shire's northern boundary.

Given the limitations of Zone B and particularly the issues of distance and road access to Brand Highway, VES concentrated on the broader Zone A area, examining two potential sites including Lot 7778. The site selection process concluded that Lot 7778 Wannamal Road South provided the most suitable location.

The proposed site, Lot 7778 Wannamal Road South, is located approximately 16km north of the Gingin townsite, within the locality of Cullalla [Figure 1 : Location Plan]. The property, Fernview Farm, is privately owned and comprises a total area of 1,750ha. The area proposed for the waste management facility will be leased from the owners and covers approximately 160ha within the northern portion of the site [Figure 2 : Site Area].

The isolation of the site, west of the Boonanarring Nature Reserve, combined with the siting of the facility within Lot 7778 provides the opportunity for establishing a substantial buffer zone around the facility, thereby minimising any impact of the activities on local residents and surrounding land uses. The buffer achieved is four times that required by the EPA for a Class II landfill.

The nearest residence is located approximately 1.95km to the south of the proposed facility, within Lot 7778. Beyond Lot 7778, the nearest residence to the facility is approximately 2.3km to the north east.

400388mE
6546583mN

403801mE
6546610mN

Cullalla Road
to Gingin

Access to Brand Highway

404559mE
6545841mN

Proposed
weighbridge

Spoil Dump/
Future
Inert Cell

Proposed
Landfill

MAIN ACCESS ROAD

Proposed office
and workshop

Proposed
leachate
ponds

Proposed equipment
storage yard

WANNAMAL ROAD SOUTH

Existing Light
Vehicle Access

LOT 7778

Residence

Boonanarring
Nature Reserve

402281mE
6543026mN

402633mE
6542771mN

401237mE
6542517mN

404604mE
6540957mN

402660mE
6540941mN

metres

0 250 500 750 1000

SCALE 1 : 20 000 @ A3

LEGEND

- Site Lease Boundary
- Lot 7778 Boundary
- Site Infrastructure
- Topographic Contour (5m interval)

Prepared for LARRY SMITH PLANNING
SOURCES: AERIAL & RELIEF: Bruce Bowman, Bowman and Associates, 2003
SITE INFRASTRUCTURE: Duggan & Hede Pty Ltd, Received 2006

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REGIONAL WASTE MANANGEMENT FACILITY
FERNVIEW FARM, GINGIN

SITE AREA

FIGURE 2

The proposed waste management facility does not impact on agricultural or tourist sensitive areas. Lot 7778 is zoned Rural under TPS 8 and the proposed development is consistent with the Council's Draft Local Planning Strategy. The proposal is also consistent with the Avon Arc Strategy.

4. waste recovery & minimisation

Central to the VES proposal is the installation of a major waste recovery and minimisation strategy. VES propose the installation of a bio-recovery process; "Bioreactor", which instead of the storage and entombment of waste focuses on the treatment and recovery of the emplaced waste, resulting in a far more sustainable waste management option.

The Bioreactor facility provides the opportunity to recover a significant proportion of the waste stream and particularly organic rich material for blending into a soil improver for local and regional farms. Additionally, the Bioreactor process facilitates the recovery and processing of plastics and other compatible materials into diesel fuel. It is anticipated that landfill mining can potentially take place after approximately 8-9 years.

Bioreactor therefore presents a long term sustainable approach to waste disposal and management as it significantly increases the life of landfill airspace through the excavation of decomposed waste as well as presenting the opportunity to re-process and re-use up to 70% of the waste stream.

5. proposed waste management facility

- *overview:*

VES propose leasing 160ha of the northern portion of Fernview Farm for the proposed Waste Management Facility. The site of the proposed landfill itself occupies a footprint of approximately 29ha within the lease area [Figure 2 : Site Area].

The site comprises two main areas; the Operating Landfill and an Inert Spoil Dump to hold waste sorted during the Bioreactor waste recovery process that cannot be re-used. The proposed waste management facility will be designed as an engineered, valley landfill within a predominantly south and east facing valley and is estimated in the order of 4.75 million m3 of airspace.

The facility will accept only Class II waste, being principally Municipal Solid Waste and complying biodegradable organics. No noxious or hazardous wastes nor toxic chemicals will be accepted. The bulk of the waste accepted at the site will emanate from the Metropolitan Area.

Initially, the annual waste acceptance rate is estimated at 100,000 tonnes per annum, increasing at a projected rate of 5% per annum; giving a conventional landfill life in the order of 25 years. Waste recovery for Bioreactor will significantly increase the life of the facility to in excess of 50 years.

Post-completion, the facility will be capped and re-vegetated to maximum AHD of 225m, thereby blending in to the existing landscape, effectively as an extension of the existing landform.

- *site access and security;*

Access to the site from the south or north will be via Brand Highway, Wannamal Road West and Wannamal Road South. VES will enter into an agreement with Council to contribute towards the substantive cost of upgrading both routes to full bitumen.

- *liner:*

Although the facility will only accept screened Class II waste, the landfill liner will be designed in accordance with best practice for a Class III landfill sites and better.

The main engineering components of the liner include [Figure 3 : Liner & Leakage Detection System]:

- 500mm thick compacted base;

- Geosynthetic Clay Liner (GCL) installed on the 500mm thick compacted base and the sidewalls; and
- 2mm thick high density polyethylene (HDPE) flexible membrane liner (FML), will be installed directly above the approved GCL.

A protective geotextile will be installed directly above the approved FML and itself overlain by a 300mm gravel leachate drainage layer to protect the liner system from puncture by sharp objects

The liner system proposed will maintain a minimum 15m clearance to the groundwater and have superior performance characteristics to the more conventional system of HDPE and 1 metre of clay.

- *leakage detection and collection system:*

Notwithstanding that the composite liner system proposed has been approved by the EPA, VES will also install a sophisticated leakage detection and collection system.

The leakage detection system will comprise a second HDPE membrane liner overlain by 200mm of sand and placed between the primary liner system and the compacted base.

The leakage detection and collection system creates a triple liner system providing Council and the Community with a very high degree of confidence that the proposed facility will not impact on the groundwater beneath the site.

- *leachate management:*

Landfill leachate is an aqueous liquid which is generated within landfills as the result of the physical and biological decomposition of the deposited waste. Leachate is recognised as a potential source of surface water and groundwater contamination.

The leachate collection system for the proposed landfill will consist of collection pipework within the landfill cells from where leachate will be pumped to leachate evaporation ponds which will be fully lined and include a leakage detection system. A minimum 1m freeboard will be maintained at all times to the ponds. Where necessary, leachate will be tankered off-site.

Leachate levels within the landfill will be controlled by regular monitoring.

- *groundwater monitoring system:*

A comprehensive groundwater monitoring program will be established and implemented to determine potential changes in groundwater quality as a result of site operations.

The monitoring bores will be installed around the landfill and leachate storage ponds, on the up hydraulic gradient side to monitor background groundwater quality and on the down gradient side of potential contaminant sources. Monitoring will be undertaken every three months and will include but not be limited to pH, heavy metals, nitrogen and phosphorous, total dissolved solids and total petroleum hydrocarbons.

All monitoring results will be recorded and reported to the Shire and DEC annually.

- *landfill gas:*

Landfill gas (LFG) is composed of a variety of gases which include methane, carbon dioxide, oxygen, nitrogen, hydrogen and water vapour. Methane and carbon dioxide are the major constituents and trace compounds which are considered as potential odorants include hydrogen sulphide. Both methane and carbon dioxide are greenhouse gases.

Landfill gas may migrate from the landfill through the cap and sidewalls by diffusion.

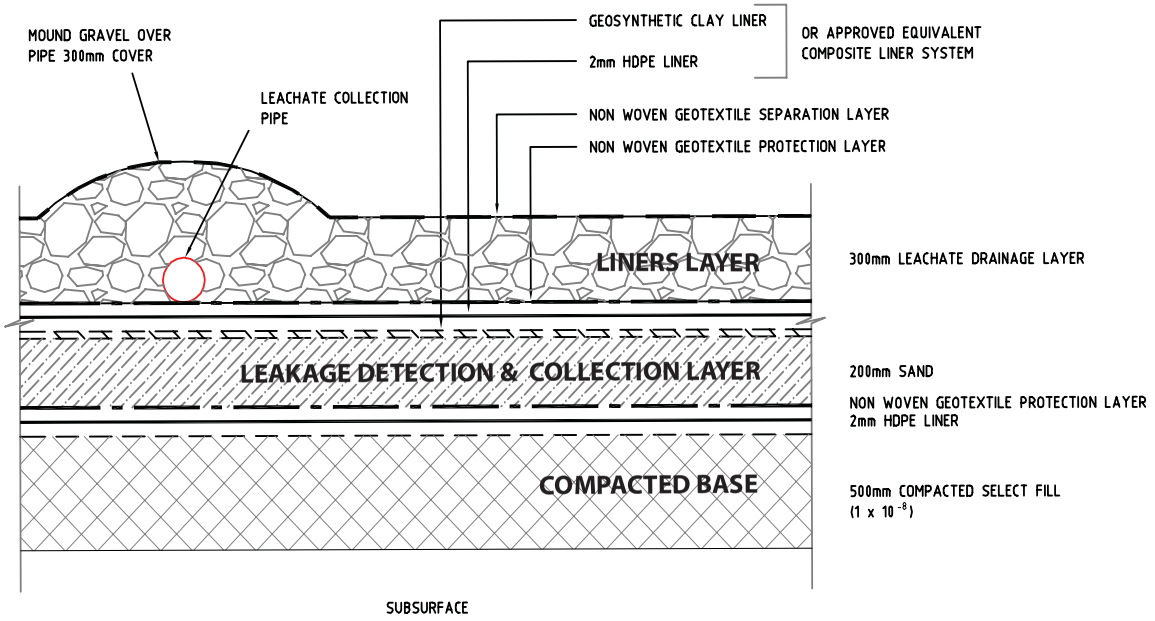
Landfill gas will be extracted from the landfill via an active removal system comprised of a number of gas extraction wells placed within the waste. The system will operate by inducing a slight vacuum within the

REGIONAL WASTE MANAGEMENT FACILITY

FERNVIEW FARM

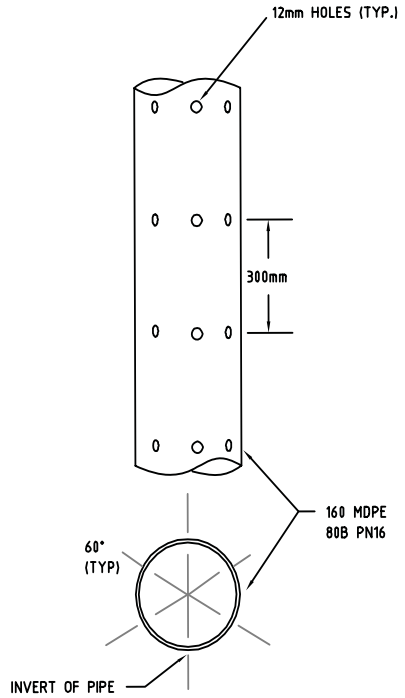
COMPOSITE LINER & LEAKAGE DETECTION SYSTEM

FIGURE 3



BASE LINER TYPICAL DETAIL

N.T.S.



PERFORATED LEACHATE PIPE DETAIL

N.T.S.

C	HDPE thickness changed SEP 08
B	Liner detail amended SEP 08
A	Original Issue MAY 07

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VEOLIA ENVIRONMENTAL SERVICES

PROPOSED LANDFILL
FERNVIEW FARM, CULLALLA
BASE LINER AND PIPE DETAIL

SCALE NTS

CW641-00-06 C

extraction wells and associated piping that will promote gas flow from the waste mass to the gas extraction wells. Where the recovered gas is of low quality it will be conveyed to a portable flare. The flare will remain in place throughout the life of the landfill to burn excess landfill gas that cannot be utilised to generate power. It is expected that as LFG volumes increase with time, that up to three gas powered generators will be installed, providing power for up to 2,500 homes.

- *staging:*

The construction of the landfill facility will be a staged development where construction activities will occur at intervals throughout the life of the facility. This will allow the progressive use of the landfill areas so that construction, operation, capping and leachate recirculation and waste recovery and re-processing can occur simultaneously in different areas (stages) of the site.

- *capping, landscaping and aftercare:*

A site rehabilitation and aftercare management plan will be developed to meet the requirements of the Shire of Gingin and the DEC. Site aftercare is essential in order to meet the primary environmental goals of land management and conservation. There are two main aspects to site closure:

- Site capping and revegetation; and

- Post-closure monitoring and maintenance.

The rehabilitation and aftercare management will include the following:

- Maintenance of landfill cap, in particular to: prevent/control erosion; restore depressions; and seal and monitor cracks in the cap caused by settlement; and restore/maintain vegetation;

- Maintenance and operation of leachate collection and treatment system;

- Maintenance and operation of landfill gas-extraction system; and

- Environmental monitoring of groundwater; surface water, landfill gas, leachate and settlement.

VES has a strong commitment to aftercare and envisages that the site will be managed by VES for an extended period following closure (typically 15-25 years). The site will only be transferred from VES control when monitoring confirms that the site is stable and non-polluting and with the written agreement of the DEC and Shire of Gingin.

- *financial guarantees/assurances:*

VES will provide, by way of Bank Guarantee, a financial assurance to the Shire of Gingin to ensure:

- The continuing operation of the waste management facility in accordance with conditions imposed both by the DEC and the Shire;

- The site is capped and re-habilitated in accordance with the approved Closure Plan;

- The site is correctly managed post closure in accordance with the Post Closure Management Plan; and

- That Council has access to adequate funding in the unlikely event that it is required to intervene in any of the above stages as a consequence of the failure of VES to perform after due warning.

The sum of the guarantee will be determined in consultation with Council.

Additionally, VES will reimburse Council for the costs of engaging a suitably qualified consultant to oversee the construction and commissioning of each stage of the facility and that groundwater monitoring is being undertaken in accordance with approved methods.

6. environmental impacts

- *Flora & Fauna:*

The proposed facility will not impact on any rare or endangered flora or fauna. The waste disposal cells have been sited to minimise clearing of undisturbed vegetation, particularly that which is in good condition.

A total of 57.5ha of vegetation in varying condition will require to be cleared in order to accommodate the facility. The area to be occupied by the facility is currently used for grazing and was cleared by the farmer in approximately 1970 and has been chained at about 5 year intervals to control regrowth.

Additionally, the facility is well removed from the Boonanarring Nature Reserve.

- *Groundwater:*

The groundwater system below the site is a minimum of 15m below the surface at the lowest point where waste will be deposited; increasing to 35m below surface as filling occurs further up the valley slopes.

Noxious and hazardous wastes will not be permitted, nor will toxic chemicals, oils or petroleum based products. Therefore, the principle source of possible contamination is the leachate, a nutrient rich liquid, produced from the decomposition of organic materials and typically household waste.

VES is very conscious of the importance of the groundwater system to the Gingin Community and engaged Mr Chris Barber, a respected hydrogeologist to undertake detailed measurements and computer modelling to determine what impact a catastrophic leak would have on the groundwater.

It is important to note that the modelling undertaken assumed that no leakage detection and collection system was in place.

The modelling has demonstrated that:

- It takes approximately 400 years for groundwater beneath the site to reach the environmentally sensitive headwaters of Gingin Brook which are located some 3.5km to the south west of the site;

- At a leakage rate of 30,000 litres per day, the contamination plume dissipated to below drinking water standards within approximately 1.75km of the landfill site and returned to background levels within 2km of the landfill site; and

- A remediation bore pumping at 1ML per day located 500m down gradient would result in background nitrogen levels being achieved within approximately 1.75km of the landfill site.

It is evident from the modelling that even without the leakage detection and collection system, a catastrophic leak would not present a risk to the groundwater system beyond the site.

Clearly the addition of the leakage detection and collection system would eliminate any possibility of risk to the groundwater beyond the site. More importantly, the Townsite drinking water supply bores are located in excess of 15km to the south west of the site. It is clear that the proposed facility would present no risk to the Gingin Townsite Water Supply.

The triple liner system proposed, including leakage detection and collection system provides a very high level of confidence for Council and the Community that the groundwater will be protected from contamination even under a worst case scenario.

- *Amenity:*

Potential impacts on amenity include, noise, odour, dust, litter and vermin. Because of its isolated location, it is most unlikely that the proposed waste management facility will impact on the amenity of the community or local residents.

The EPA requires a buffer of 500m to residential development in order to ameliorate potential amenity effects. The closest residents to the proposed facility are some 2km to the north-east, four times the required buffer distance. Accordingly, the remote nature of the site and large separation distances to sensitive land-uses means that there is little likelihood of any off-site impacts.

If a problem does arise, local residents will be provided with a "Complaints Hotline" telephone number. The Site Manager will contact any complainants that have concerns related to site operations and determine the nature of the nuisance. If the nuisance is of an ongoing nature, the Site Manager will take steps to ensure that any identified nuisance source is addressed within 48 hours.

A Complaints Register will be established to record the details of any complaints received, date, nature, and resolution action undertaken. The Register will be a public document and will be reported annually to Council.

Notwithstanding the extensive buffer, Veolia are conscious of the need to ensure that the facility is managed to the highest standards and will implement a suite of management measures to further minimise the risk of any impacts on the amenity of nearby residents and the broader community.

7. community and social impacts:

- *public health:*

Similarly, the remote nature of the site and large separation distances to sensitive land-uses means that there is little likelihood of any off-site health risks.

A modern, well managed landfill does not represent a health threat either on or off the site. For a health threat to exist as a result of a landfill operation, two conditions must be met:

- There must be a hazardous agent that is present in sufficient concentration or duration to provide a suitably large dose to affect health; and

- There must be a completed exposure route whereby the agent can impact on a human receptor.

Those most at risk are:

- Those working on the landfill itself who are exposed 8-10 hours a day in close proximity to freshly deposited waste and who are potentially directly exposed to dust or aerosols etc. at relatively high concentrations because of their proximity to the source; and

- Residents who live in the vicinity of a landfill who could be impacted by airborne emissions, surface or groundwater which is then used for drinking or direct contact bathing.

Employees will be provided with a safe working environment with the highest standards of work practice to minimise any risk of infection.

There are few surrounding residents and they are located some 2km distant from the site boundary which in itself contains the 500m buffer required to residential areas.

A hazardous agent must be able to access a completed exposure path (source $\rightarrow$ path $\rightarrow$ receptor) and at sufficiently high doses, for health impacts to be imparted on nearby residents. There are three potential pathways for exposure:

- Exposure to contaminated surface water;

- Exposure to contaminated groundwater; and

- Airborne exposures to gaseous or particulate emissions.

There are no surface water bodies on the site, thereby excluding that pathway.

Clearly, the risk of groundwater contamination theoretically presents the greatest public health risk to the community as the Townsite relies on groundwater for its drinking supplies. Previous discussion in respect of the impact of the proposed facility on groundwater has clearly demonstrated that there is no threat to health due to groundwater.

Landfills can potentially cause off-site impacts through the release of airborne dust and aerosols or through gaseous emissions. The substantial buffer distances to the nearest sensitive premises mean that the concentrations of dust experienced by human receptors are likely to be very low. Further, the hazardous contaminants in landfill gas are very low at the fill surface and the emitted gases are diluted extensively as they migrate to the site boundary.

Therefore, no health threat would exist as a result of airborne emissions.

- *economic & community benefits:*

The construction, operation and flow-on effects of the facility will provide a significant impetus to the local and regional economy.

Construction of Stage 1 of the facility is estimated at $5.4million of which $3.5million in labour, plant and materials is potentially sourceable from within the Gingin region; including at least 12 positions for Plant Operators, Tradesmen and Labourers. Upgrading of external roads is estimated at a further $2.7million.

The estimated annual operating cost of the facility is $3million of which approximately $0.9million in labour, plant, consumables and materials is potentially sourceable from within the Gingin region; including seven full time positions which are expected to be filled within the region.

Materials and consumables purchases required during the operational phase and able to be sourced locally include fuels and oils, plant and machinery servicing and repair, trades services, catering needs and office consumables.

The annual operating cost excludes waste haulage, the direct costs of which are estimated at $2million per annum. The opportunity exists for locally based owner / operators to enter into long term contracts with VES for waste haulage providing an additional six, locally based positions of heavy haulage drivers.

The flow-on effects of the operation of the facility are expected to create up to a further 15 full time positions within other businesses in the Gingin region and result in an additional $3million in expenditure by other local businesses and services.

VES have extensive community support programs associated with their operations in the Eastern States and hope to develop the same, long term relationship with Council and the Community of Gingin and surrounding districts. VES recognise that the increase in the local workforce resulting both directly and indirectly from the facility will put pressure on Council Budget for increased facilities and services.

In addition to meeting most of the cost of upgrading Wannamal Road West and Wannamal South Road ($2.1million), VES will also establish a Community Development Fund with Council. The Fund is expected to generate up to $2.7million over time to assist with upgrading of Council facilities to meet the needs of employees and their families who are attracted to the district by the proposed facility.

8. Fire Management

Landfill fires are not a common occurrence at waste management facilities. However, once started they are difficult to extinguish; therefore the primary method of control is prevention.

The cause of landfill fires can include:

- Vandalism;

- Poor management of landfill gas; and

- Spontaneous combustion.

Fire can not only impact on amenity but also be a hazard to local properties and health.

The design, construction and operation of the proposed landfill facility will aim to prevent landfill fires. The landfill will be designed and operated to current best practice which will minimise the potential for landfill fires in the first instance.

Fire fighting vehicles and water supply capable of being delivered to any point on the landfill, to the satisfaction of the Shire and FESA will be maintained on site and fire breaks will be maintained around the inside of the perimeter security fence.

Additionally, a fire management plan will be developed and implemented prior to the construction of the facility in conjunction with the Shire and FESA.

Fire fighting vehicles and equipment maintained at the site will also be available for fire fighting duties in the local area.

9. Proposed Zoning

The proposed site area forms only a portion of the broader Lot 7778 and it is:

- Impractical to define a zone around the proposed 160ha lease area; and

- Excessive to zone the whole of the Lot 7778.

It is the general preference of the WA Planning Commission that where land is to be zoned, that the zoning be aligned with a definitive cadastral boundary.

The nearest existing and future southern cadastral boundary to the site is that of Wannamal Road South and its proposed extension westward through the Boonanarring Nature Reserve to Boonanarring Road. It is understood that this route has been approved by all relevant agencies but remains to be created and Gazetted as a formal public road. Gazettal is expected in the near future. It is proposed that this road form the southern boundary of the zoning for the proposed Waste Management Facility.

Accordingly, it is proposed that that portion of Lot 7778 north of Wannamal Road South extension be zoned under TPS 8 with the:

> "Additional Use" of "Waste Management Facility for the Disposal, Recovery and Re-processing of approved wastes and associated activities".

The application of the Additional Use provisions of the Scheme in this case is more appropriate than a Special Use Zone, as it would enable the balance of the zoned area outside of the immediate facility site to continue to be used by the owner for the underlying Rural Zone purposes.

Further, it is proposed that the application of the "Additional Use" be subject to the following condition:

> "Development to be generally in accordance with the Waste Management Facility proposal as described in the Waste Management Facility Report approved by Council at its meeting of the ___ day of _____, 200__ and the Statement of Conditions issued by the Minister for the Environment dated the ___ day of _____, 200__; or in such other manner as may be approved by Council and the Minister for Environment."

Subject to Council's acceptance of the proposed zoning methodology, formal Scheme Amendment documents will be prepared and forwarded for formal endorsement.

10. Conclusion

The proposed Waste Management Facility at Lot 7778 Wannamal Road South, Cullalla has been the subject of extensive investigations, particularly in respect of the potential for impacts on the groundwater system and the environmentally sensitive Gingin Brook. It has been the subject of the environmental assessment process and the EPA and Minister for Environment have determined that the proposal can proceed.

The proposed facility is consistent with Council's Local Planning Strategy and the Avon Arc Regional Strategy. Under Council's TPS 8, the proposed facility will require re-zoning as a consequence of the recent Gazettal of Amendment 91 to Council's Scheme. Amendment 91 arose from concerns that the Shire was the subject of numerous enquiries in respect of landfill facilities. The report proposed that further landfill proposal, other than for this proposal at Lot 7778 and a further proposal at Ioppolo Road, should be avoided on amenity and broader environmental grounds.

There is pressing need to ensure that sufficient landfill capacity exists to serve the Perth Metropolitan Region and adjacent regions to provide for the safe management of those wastes that cannot be recovered and re-cycled economically from the waste stream while the strategies of the State Government *Statement of Strategic Direction for Waste Management in WA – Vision & Priorities* take effect. From a more local context the facility will provide an environmentally responsible approach to managing a segment of the waste stream generated not only of the Metropolitan Area but also within the Shire of Gingin and surrounding Shires of Chittering and Victoria Plains which are typically currently served by small, unlined, un-staffed landfills with limited recycling and recovery services.

VES has recognised the increasing pressures on waste disposal and, as a consequence, has spent the past 24 months developing its proposal for a state of the art waste management facility at Gingin. The proposed facility presents the opportunity to alleviate the pressure on existing waste management facilities, while also offering a sustainable and long term approach to regional waste disposal.

Lot 7778 falls within an area identified in November, 2003 by a study undertaken for the Shire of Gingin to identify areas of the Shire suitable for the establishment of a waste management facility as part of a longer term strategy for consolidating waste management. Subsequent detailed site analysis has confirmed Lot 7778 as being highly suitable for the proposed Waste Management Facility. The proposed facility will not impact rare or endangered flora and fauna and the extensive buffer distances achieved will ensure that potential amenity impacts will be minimal.

Critically, detailed assessment of the potential for impacts on the groundwater system beneath the site has clearly demonstrated that the Gingin Townsite drinking water supplies and the environmentally sensitive Gingin Brook will not be impacted in the unlikely event of a major leak.

Notwithstanding that the composite liner system exceeds requirements for Class II landfill sites and has been approved by the EPA, VES will install a leakage detection and collection system that will virtually eliminate any risk to the groundwater systems.

The flow-on effects of the proposed waste management facility will provide a significant impetus to the local and regional economy resulting in up to 30 local full time positions, including the 13 positions directly created together with an additional $9million in direct and in-direct expenditure and wages by VES and other businesses and services in the region. VES is committed to the establishment of a Community Development Fund to be held as a Special Purpose Reserve Fund by Council for the upgrading of community facilities within the Gingin locality. Current projections indicate the gross end value of the Fund to be in excess of $2.7million and is additional to the $2.1million in contributions by VES to the upgrading and sealing of Wannamal Road West and Wannamal Road South.

In conclusion, it is evident that the proposed Waste Management Facility will have minimal environmental or community impacts while providing potentially significant benefits to the local and regional community.

Accordingly, VES earnestly seeks the support of the Council of the Shire of Gingin to the initiation of Scheme Amendment procedures under TPS 8 to provide the northern portion of Lot 7778 Wannamal Road South, Cullalla with the "Additional Use" of "Waste Management Facility for the Disposal, Recovery and Re-processing of approved wastes and associated activities".