THE LEADER IN RESOURCE RECOVERY

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New Landfill Proposed for St. Ronans near York

Project Summary

SITA Australia (SITA) is planning development of a new landfill on a small portion of Allawuna farm at St. Ronans approximately 18 km west of York in Western Australia. It is important to us to hear your thoughts on this project and we welcome the opportunity to answer any questions you may have regarding the development of a state of the art landfill in your shire.

We want to assure you that we are developing this landfill with you and the local natural environment in mind. In the planning process we are working to address and satisfy all concerns of the Environmental Protection Authority (EPA), Department of Environment and Conservation (DEC), the Department of Water (DoW), the Fire and Emergency Services Authority (FESA) and the Shire of York.

We are looking forward to working with the local community during the planning stage and ongoing operation of the facility.

Environmental Investigations

At SITA, we are committed to the responsible management of our landfill sites using the latest technology and drawing on our extensive experience. We have engaged several specialist organisations to undertake investigations required prior to presenting the project to the EPA for environmental consideration. SITA has concluded that the site is appropriate for a landfill because of the environmental protection it offers.

Odour

A thorough investigation of the potential for odour generation at the site has been undertaken. Factors including waste type, waste volume, operational procedures and waste covering frequency have been used in a computer model to evaluate the spread of odour from the site. The model was calibrated based on odour measurements from a similar landfill site. The results of the odour modelling show that all odours should be contained well within the boundaries of Allawuna farm.

Noise

Detailed noise modelling was undertaken for both the construction and operation phases of the landfill. The type of heavy plant being used, their work areas and work hours were combined with measured background noise levels to generate a map of noise in the area. When we compared this map to the requirements of the *Environmental Protection (Noise) Regulations* we found that the landfill development should have no impact on the nearest neighbours.

Groundwater

We have installed a network of groundwater bores across the site to determine both the flow direction and the baseline quality of the water under the site. The results show that the groundwater moves extremely slowly in a northerly direction away from the Mundaring Weir catchment. The water quality data collected will be used as a benchmark for future measurements to ensure the landfill is not having any impact.

Surface Water

The Allawuna landfill site was chosen specifically because it is very close to the head waters of the water catchment in the area. This means the quantities of runoff flowing past the landfill will be minimised. The

landfill is sited adjacent to a small seasonally dry creek that contributes to Thirteen Mile Brook. Runoff from this small upstream catchment will be directed into a stormwater dam for onsite use.

Native Plants and Animals

A field survey of the complete works area has been performed looking for rare or endangered plants and animals. As the landfill is being constructed on already cleared cropland, unsurprisingly, no rare or significant plants were found. A few scattered remnant Gums, Wandoo and Marri trees on the site were carefully inspected for evidence of Black Cockatoo roosting or breeding and found to be all clear.

Geology

The site at Allawuna has excellent geology for the development of a landfill. The groundwater lies beneath a thick (6.5 to 9.5 m) natural layer of low permeability confining clay. This clay prevents stormwater from seeping down into the groundwater. This clay barrier will be retained as an effective natural barrier beneath the engineered multi layered landfill liner. The site has ample supplies of gravel for road making.

Greenhouse Gas Emissions

As a socially responsible company and a leader in resource recovery, we aim to continuously reduce greenhouse gas emissions derived from our operations. All our landfills are equipped with biogas capture, in fact we are Australia's largest producer of landfill biogas for the production of recovered energy.

Landfills are also one of the types of enterprises liable under the Clean Energy Future Act. The carbon price presents a further incentive for SITA to minimise the fugitive emissions from the landfill to limit its liability.

Early planning for future landfill gas collection, diligent maintenance of waste received records and progressive landfill capping and rehabilitation all serve to limit the carbon emissions from the site.

Waste

The landfill will accept only a small range of waste. This includes:

- Municipal Solid Waste – waste from your general waste wheelie bin
- Commercial and Industrial Waste – waste from shops, restaurants and industry
- Construction and Demolition Waste – bricks, concrete, soil, timber, plastic etc
- Asbestos – sealed asbestos packages will be buried deep in the landfill.

The landfill will not accept any hazardous wastes like oxides, heavy industrial waste, toxic or radioactive waste.

Landfill Design Features

A modern landfill is much more than just a hole in the ground filled with garbage and covered over. An engineered lining system, environmental monitoring and reporting program, gas collection and extraction system and progressive capping and rehabilitation are all designed to limit the impact of the landfill on the environment. We have designed this landfill in accordance with the current best practice standards for Western Australia. Where possible and practical, we have taken advantage of site specific benefits to surpass the requirements of the best practice guideline.

Lining System

The multi layered lining system covers the base of the landfill and is designed to collect both leachate (the water that has been in contact with the waste) and landfill gas. The liner consists of a layer of very low permeability clay material, covered by a durable 2 mm thick layer of plastic, welded together into one large sheet. The plastic liner is tested thoroughly for leaks before being covered. The plastic liner is

covered with a protective cushion layer, a thick drainage collection aggregate layer and a filtration textile layer. Finally waste is placed on top of this composite system.

Groundwater Monitoring

Groundwater testing will be undertaken every 6 months by a specialist independent laboratory until the landfill becomes operational, at which time the frequency will increase to once every 3 months. [SITA publicly releases groundwater monitoring results for our landfill sites and plans to continue this policy at Allawuna.]

Gas Extraction

Extracting gas from the landfill and burning it in a flare or electricity generation turbine is beneficial to the environment as it breaks down the methane into much less harmful carbon dioxide. A network of gas extraction wells will be installed in the waste mass for this purpose. As the total volume of waste in the landfill increases, the gas generation also increases and more power can be generated.

Capping and Rehabilitation

By progressively capping and rehabilitating the landfill we can limit the amount of gas escaping and also limit the amount of water getting into the waste and generating leachate. The final shape of the capped landfill has been designed to fit into the surrounding hills. SITA will continue to manage the site for many years after the final cap is complete. Only when the landfill stops emitting gas and generating leachate will SITA be permitted by the DEC to finish operations at the site.

Construction Quality Assurance

As a component of the construction of the landfill, an independent third party will be engaged to verify the construction is completed to the standards required by the Department of Environment and Conservation. Special emphasis is placed on the quality of the installation of the plastic liner. Every weld is tested and audited to confirm there are no leaks.

Landfill Operation

Just as the landfill has been sited and designed with the current Western Australian best practice guidelines as the minimum benchmark, so too have our operational procedures. SITA has successfully run many landfills all over Australia and has an excellent track record in environmental protection and public satisfaction.

Waste Identification and Screening

All waste trucks entering the landfill will be weighed and inspected to ensure they meet the waste acceptance criteria. Any vehicle with non-conforming waste such as liquid waste, unacceptable industrial waste or radioactive waste will be directed to use an alternative facility.

Waste Placement

The landfill tipping face is limited to a small area under 30 m in length. Trucks deposit their garbage at the face and a Dozer and Landfill Compactor work together to compact the waste. At the end of every day the waste is covered with a layer of soil to limit odour, landfill gas emission, windblown litter and vermin access.

Fire Prevention

To minimise the risk of fire on the site a fire management plan, developed in consultation with FESA describes the important fire prevention activities to be undertaken on site. The responsibilities of each staff member are clearly identified and key contacts in case of fire are listed. Fire breaks will be maintained and regularly inspected, fire fighting equipment, including a dedicated water storage tank and vehicle mounted extinguishers will be regularly inspected to ensure they are always in good working order. Flammable materials will be stored away from ignition sources.

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Annual Reporting

As part of operating a Licensed Landfill, SITA will be required to report annually to the DEC. This report will detail any environmental issues or complaints, how they were investigated and how they were addressed. The report also includes the groundwater monitoring results for the preceding year and the volumes of different types of waste received.

Benefit for your Community

The landfill site will provide employment for 8 -12 people and make use of local suppliers for maintenance, equipment and supplies wherever possible. We welcome suggestions from the York community about ways the development can further benefit the shire. Suggestions to date have included private use of the weighbridge and depositing of locally collected York waste in the landfill, although the landfill will not be open to the general public.

Traffic

When operational, the landfill will receive one road train of waste every 20 minutes during the day. As road trains only leave the Perth transfer station when they are full, they are evenly spaced to reduce the impact on traffic along the highway. This ensures the total amount of traffic to and from the site will have minimal impact on the current traffic volumes.

As part of the development, SITA will be upgrading the turn off into Allawuna farm from the Great Southern Highway to include an overtaking lane for other vehicles to pass our road trains entering into the site and a speed up lane for our road trains departing the site to return to Perth.

Project Timeline

We hope to start construction of the landfill in 2014. Before that can happen we will need to finalise approvals from the EPA, DEC and the Shire of York.

For more information

Phone

You can call Nial Stock on (08) 9350 7101 or Adam Davies on (08) 9457 5899 during office hours.

Display

SITA have set up a display in the York Shire offices with some more detailed information and a cross section of the landfill lining system, showing the ground water protection properties of the liner materials.