

Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 14 September 2011, the Planning Assessment Commission of NSW (the Commission) approves the development application referred to in Schedule A, subject to the conditions specified in Schedules B to D.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the Development.



Joe Woodward PSM

Member of the Commission (Chair)

Sydney 23 January 2017

SCHEDULE A

Application No:	SSD 6835
Applicant:	SITA Australia Pty Ltd and Sutherland Shire Council
Consent Authority:	Minister for Planning
Land:	Little Forest Road, Lucas Heights Lot 101 in DP 1009354, Lot 3 in DP 1032102 and Lot 2 in DP 605077
Development:	Increase landfill capacity, relocate and expand the garden organics facility and construct and operate a new resource recovery facility

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DEFINITIONS

ANSTO	Australian Nuclear Science and Technology Organisation
ARRT Facility	Advanced Resource Recovery Technology Facility, as described in the EIS
Applicant	SITA Australia Pty Ltd and Sutherland Shire Council
BCA	Building Code of Australia
Biosolids	As defined in the EPA's <i>Environmental Guidelines: Use and Disposal of Biosolids Products, 2000</i>
CEMP	Construction Environmental Management Plan
Construction	As described in the EIS, including: - landfill re-profiling, stripping back covered areas and landfilling on top of existing waste; - construction of the GO Facility, earthworks, hardstand, internal access road, water and leachate infrastructure, waste receipt and sorting areas, compost bunkers and storage areas; - construction of the ARRT Facility, earthworks, hardstand, buildings, biofilters, water infrastructure; and - Mill Creek re-alignment.
Council	Sutherland Shire Council
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Department	Department of Planning and Environment
Development	The development as described in the EIS and RTS, and as generally depicted in Appendix A, including increasing landfill capacity, expanding garden organics processing and constructing and operating a resource recovery facility at Little Forest Road, Lucas Heights
DPI Water	Department of Primary Industries Water
EIS	Environmental Impact Statement titled <i>Environmental Impact Statement – Lucas Heights Resource Recovery Park Project</i> , prepared by GHD dated October 2015
ENM	Excavated Natural Material
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning & Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning & Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued by the EPA under the <i>Protection of the Environment Operations Act 1997</i>
Evening	The period from 6 pm to 10 pm
General Solid Waste (putrescible)	As defined in the EPA's <i>Waste Classification Guidelines, 2014</i> , or its latest version, includes manure
General Solid Waste (non-putrescible)	As defined in the EPA's <i>Waste Classification Guidelines, 2014</i> , or its latest version, includes garden waste and wood waste
GO Facility	Garden Organics Facility, as described in the EIS
Feasible	Feasible relates to engineering considerations and what is practical to build
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
Heritage Item	An item as defined under the <i>Heritage Act 1977</i> , and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i>
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this consent
Land	In general, the definition of land is consistent with the definition in the EP&A Act
Landfill re-profiling	Area of the landfill to be stripped of existing final cap cover and intermediate cover for the placement of further waste on top, as described in the EIS and shown on the figures in Appendix A
LHRRP	Lucas Heights Resource Recovery Park incorporating the landfill, GO and ARRT facilities, administration building, weighbridge, workshops, parking areas, gas, leachate and water management infrastructure
Management & Mitigation Measures	The Applicant's management and mitigation measures contained in the EIS and included in Appendix B
Material harm to the environment	Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning (or delegate)
Mitigation	Activities associated with reducing the impacts of the Development
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan

Operation	As described in the EIS, includes receipt, processing and landfilling waste on the re-profiled landfill and at the GO and ARRT facilities
OU/m ³	Odour units per cubic metre, as defined in the EPA's <i>Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW</i> , November 2006
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Reasonable	Reasonable relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Resource Recovery Centre	Existing resource recovery centre in the eastern part of the site for receipt and processing of recyclable materials including plastics, paper, scrap metal and household rubble
RMS	Roads and Maritime Services
RTS	Response to Submissions titled <i>Lucas Heights Resource Recovery Park Project Response to Submissions and Preferred Project Report</i> prepared by SUEZ Recycling & Recovery Australia dated June 2016 and supplementary information titled <i>LHRRP Response to Biodiversity Offsets Review</i> , prepared by GHD dated 29 July 2016, <i>LHRRP Re: DPI Comments on the RTS Report</i> , prepared by GHD dated 3 August 2016 and <i>Response to Cronulla Model Aero Club</i> , prepared by SUEZ Recycling and Recovery, dated 29 July 2016
Secretary	Secretary of the Department (or nominee)
Sensitive Receivers	Residence, education institution (e.g. school, university, TAFE college), health care facility (e.g. nursing home, hospital), religious facility (e.g. church) and children's day care facility, as shown on the figure in Appendix E
Site	The land listed in Schedule A, and as depicted in Appendix A including the landfill, GO and ARRT facilities, administration building, weighbridge, workshops, parking areas, gas, leachate and water management infrastructure
Special waste	As defined in the EPA's <i>Waste Classification Guidelines, 2014</i> , or its latest version, includes asbestos waste
VENM	Virgin Excavated Natural Material
Voluntary Planning Agreement	Voluntary Planning Agreement between Council and SITA Australia Pty Ltd for the Lucas Heights Resource Recovery Park, as described in the EIS, publicly exhibited from 1 June to 29 June 2016 and referred to in the Letter of Offer dated 15 December 2016

SCHEDULE B
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

- B1. In addition to meeting the specific performance criteria established under this consent, the Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the Development.

TERMS OF CONSENT

- B2. The Applicant shall carry out the Development in accordance with the:
- (a) EIS and RTS;
 - (b) Development plans and drawings in the EIS and RTS (see Appendix A);
 - (c) the Management and Mitigation Measures (see Appendix B); and
 - (d) the draft Landfill, GO, ARRT and Post Closure Environmental Management Plans included in the EIS.
- B3. If there is any inconsistency between the plans and documentation referred to in Condition B2 above, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.
- B4. The Applicant shall comply with any reasonable requirement(s) of the Secretary arising from the Department's assessment of:
- (a) any reports, plans or correspondence that are submitted in accordance with this consent; and
 - (b) the implementation of any actions or measures contained in these documents.

LIMITS OF CONSENT

- B5. This consent lapses five years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies before the date on which the consent would otherwise lapse under Section 95 of the EP&A Act.
- B6. The Applicant shall not receive more than:
- (a) 850,000 tonnes of general solid waste (putrescible and non-putrescible) and asbestos waste per year on site for landfill disposal;
 - (b) 10,000 tonnes of general solid waste (non-putrescible) and batteries per year on site at the Resource Recovery Centre and waste collection point;
 - (c) 80,000 tonnes of garden and wood waste per year and 2,000 tonnes of manure at the GO Facility;
 - (d) 200,000 tonnes of general solid waste (putrescible and non-putrescible) per year including 10,000 tonnes of biosolids at the ARRT Facility; and
 - (e) the quantity of waste required to meet the final landform profile described in the EIS.
- B7. The receipt, processing and disposal of waste at the landfill, GO and ARRT facilities shall cease at the end of 2037.

OTHER CONSENTS AND APPROVALS

- B8. Within 6 months of the date of this consent, the Applicant shall modify DA 11-01-99 to remove the conditions of that consent that relate to the LHRRP. The modification shall be in accordance with the *Environmental Planning and Assessment Regulation, 2000*. The modification is required to ensure all activities undertaken at the LHRRP are covered by this consent only.

STATUTORY REQUIREMENTS

- B9. The Applicant shall ensure that all licences, permits and approval/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this

consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approval/consents.

STRUCTURAL ADEQUACY

- B10. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works; and*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the Development.*

OPERATION OF PLANT AND EQUIPMENT

- B11. The Applicant shall ensure that all plant and equipment used for the Development are:
- (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

PROTECTION OF PUBLIC INFRASTRUCTURE

- B12. Prior to the commencement of construction, the Applicant shall:
- (a) prepare a dilapidation report of the public infrastructure in the vicinity of the site (including roads, kerbs, footpaths, nature strip, street trees and furniture); and
 - (b) submit a copy of this report to the Secretary and Council.
- B13. The Applicant shall:
- (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged as a result of the Development; and
 - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Development.

STAGED SUBMISSION OF PLANS OR PROGRAMS

- B14. With the approval of the Secretary, the Applicant may:
- (a) submit any strategy, plan or program for the landfill re-profiling, GO Facility and ARRT Facility construction and operation, required by this consent, on a progressive basis; and/or
 - (b) combine any strategy, plan or program required by this consent.

DISPUTE RESOLUTION

- B15. In the event that a dispute arises between the Applicant and either Council or a public authority, in relation to an applicable requirement in this consent or relevant matter relating to the Development, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

Note: This condition does not relate to disputes raised regarding matters in the Voluntary Planning Agreement required under Condition B19.

COMPLIANCE

- B16. The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.
- B17. The Applicant shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors.

EVIDENCE OF CONSULTATION

- B18. Where consultation with any public authority or community group is required by the conditions of this consent, the Applicant shall:
- (a) consult with the relevant public authority or community group prior to submitting the required documentation to the Secretary for approval, where required;
 - (b) submit evidence of this consultation as part of the relevant documentation required by the conditions of this consent; and
 - (c) include the details of any outstanding issues raised by the relevant public authority or community group and an explanation of or agreement between any public authority or community group and the Applicant or any person acting on this Development consent.

PLANNING AGREEMENT

- B19. Prior to the commencement of construction and prior to receiving increased tonnes of waste in accordance with Condition B6(a), the Applicant shall enter into the Voluntary Planning Agreement with Council in accordance with the Letter of Offer dated 15 December 2016.

SCHEDULE C

SPECIFIC ENVIRONMENTAL CONDITIONS

WASTE

Receipt, Storage & Handling of Waste

- C1. The Applicant shall only receive waste on site that is authorised for receipt by an EPL.
- C2. The Applicant shall ensure any waste generated on the site during construction is classified in accordance with the EPA's *Waste Classification Guidelines, 2014* or its latest version, and disposed of to a facility that may lawfully accept the waste.
- C3. The Applicant shall:
 - (a) implement auditable procedures to:
 - i. ensure the site does not accept wastes that are prohibited;
 - ii. screen incoming waste loads; and
 - (b) ensure that:
 - i. all waste types that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and
 - ii. staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste.

Monitoring

- C4. The Applicant shall provide details of the quantity, type and source of wastes received on the site and provide these details to the EPA and the Secretary when requested.

Landfill Operations

- C5. To minimise the potential for odour generation, the Applicant shall, unless otherwise agreed in writing by the EPA:
 - (a) ensure a maximum of 1 hectare of existing intermediate cover or 2 hectares of existing final capped cover may be stripped in advance of landfilling to form the prepared surface. The prepared surface must have a minimum depth of 300 millimetres;
 - (b) at any one time a maximum of 2,500 metres squared of the prepared surface may be stripped back to expose previously landfilled waste to form the active tip face; and
 - (c) the landfill gas field infrastructure must be retained and operating at all times, with the exception of the stripped back prepared surface.

Imported Soil

- C6. The Applicant shall:
 - (a) ensure that only VENM or ENM or other material approved in writing by the EPA is used as fill on the site;
 - (b) keep accurate records of the volume and type of fill to be used; and
 - (c) make these records available to the Secretary upon request.
- C7. During construction, the Applicant shall ensure any material brought on site for use as fill meets the requirements of the relevant Resource Recovery Order and Exemption issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, to apply that material to land. The Applicant shall retain records of all material brought on site for filling purposes and provide the records to the EPA and the Secretary when requested.

ODOUR & AIR QUALITY

Limits

- C8. The Applicant shall ensure the Development does not cause or permit the emission of any offensive odour, as defined in the POEO Act.

C9. The Applicant shall:

- (a) operate and maintain all facilities within the site in a condition which controls the emission of dust; and
- (b) carry out all reasonable and feasible measures to minimise dust from the site.

Meteorological Monitoring

C10. The Applicant shall install, operate and maintain a meteorological weather station on the site that complies with the requirements of an EPL for the site.

Site Air Quality and Odour Management Plan

C11. The Applicant shall prepare a Site Air Quality and Odour Management Plan. The plan shall:

- (a) be prepared by a suitably qualified and experienced person in consultation with the EPA and Council;
- (b) be submitted to the Secretary prior to the commencement of construction;
- (c) list all emission sources across the LHRRP and key performance indicators for each emission type;
- (d) describe odour and dust monitoring methods, location, frequency and duration;
- (e) show the locations of real-time dust monitors on and off-site with appropriate trigger values;
- (f) report on the performance of the site against the key performance indicators for each emission type;
- (g) detail proactive mitigation measures for the control of dust and odour impacts;
- (h) detail the contingency measures to be implemented to respond to complaints or if dust or odour impacts are identified; and
- (i) include record keeping, a complaints register and compliance reporting.

Landfill

C12. The Applicant shall conduct an odour audit of the landfill to validate the odour reductions described in the EIS have been achieved at the existing landfill. The odour audit shall:

- (a) be prepared by a suitably qualified and experienced person in consultation with the EPA and Council;
- (b) be submitted to the EPA, Council and the Secretary at least one month prior to the commencement of landfill re-profiling;
- (c) include collection and analysis of odour samples in accordance with the EPA's *Approved Methods for Sampling and Analysis of Air Pollutants in NSW*; and
- (d) identify mitigation measures with a timeline for implementation, where the odour reductions identified in the EIS are not being achieved.

GO Facility

C13. All organic material and waste shall be stored at the GO Facility in accordance with the requirements of an EPL for the site, including limits on the height of stockpiles and use of breathable membrane covers on compost bunkers.

C14. The Applicant shall conduct an odour audit of the GO Facility to validate the odour data used in the EIS. The odour audit shall:

- (a) be prepared by a suitably qualified and experienced person in consultation with the EPA and Council;
- (b) be submitted to the EPA, Council and the Secretary within 6 months of commencement of operation of the GO Facility as described in the EIS;
- (c) include collection and analysis of odour samples in accordance with the EPA's *Approved Methods for Sampling and Analysis of Air Pollutants in NSW*;
- (d) validate the efficiencies of the odour controls, specifically the covers used for the active composting stage;
- (e) validate the odour data for freshly turned material;

- (f) demonstrate that the final design achieves an equivalent or better performance than stated in the EIS, supported by dispersion modelling in accordance with EPA's *Approved Methods for Sampling and Analysis of Air Pollutants in NSW*, if required; and
- (g) identify additional mitigation measures with a timeline for implementation, where odour performance significantly differs from the predictions in the EIS.

ARRT Facility

Biofilter and Pre-Treatment System

- C15. The Applicant shall appoint an appropriately qualified and experienced person to design the ARRT Facility, biofilter and pre-treatment and post-treatment systems. The biofilter, pre-treatment and post-treatment systems shall be designed and constructed to:
- (a) achieve the point source discharge parameters detailed in the EIS, as a minimum; and
 - (b) achieve a maximum odour emission concentration of 250 OU/m³ at discharge. If 250 OU/m³ cannot be achieved, the Applicant shall implement the pre-treatment and post-treatment systems, in accordance with the requirements of the EPA and in a timeframe approved by the Secretary.

Pre-Operation

- C16. Prior to the commencement of operation of the ARRT Facility, the Applicant shall:
- (a) provide written evidence to the EPA and the Secretary, from an independent odour expert to verify the final design parameters and actual stack parameters for the pre-treatment system and biofilter;
 - (b) prepare an odour verification report for the pre-treatment, biofilter and post-treatment system, prepared by an independent odour expert, to verify:
 - a. the systems are fully commissioned prior to operation of the ARRT Facility; and
 - b. approve the odour control system and the odour management plan required under Condition C17.

Air Quality and Odour Management Plan

- C17. The Applicant shall prepare an Air Quality and Odour Management Plan for the ARRT Facility. The plan shall:
- (a) be prepared by an independent odour expert in consultation with the EPA and Council;
 - (b) be submitted to the EPA, Council and the Secretary prior to the commencement of operation of the ARRT Facility;
 - (c) include an odour management strategy containing:
 - i. objectives and targets;
 - ii. odour risk assessment;
 - iii. biofilter and pre-treatment monitoring and maintenance plan;
 - iv. air quality monitoring plan;
 - v. communications strategy; and
 - vi. system and performance review for continuous improvement.

Biofilter and Pre-Treatment Monitoring and Maintenance Plan

- C18. The Applicant shall prepare a Biofilter and Pre-Treatment Monitoring and Maintenance Plan as required under Condition C17. The plan shall:
- (a) be prepared by an independent odour expert endorsed by the Secretary;
 - (b) be prepared in consultation with the EPA and Council;
 - (c) be submitted to the EPA, Council and the Secretary prior to the commencement of operation of the ARRT Facility;
 - (d) include a method for monitoring biofilter and pre-treatment performance that identifies biofilter and pre-treatment performance indicators that can be monitored via the process control room computer systems;

- (e) detail all proposed actions to ensure the biofilter and pre-treatment system is maintained for operation in a proper and efficient manner including, but not limited to, frequency of replacement/replenishment of filter bed material; and
- (f) identify mitigation actions to be taken in the event of breakdown and/or servicing of the biofilter and/or pre-treatment system.

Operating Conditions

- C19. All waste receivable, processing, storage and dispatch associated with the ARRT Facility must be completely enclosed within sealed buildings that are operated under negative pressure.
- C20. The Applicant shall ensure all air captured through the ARRT Facility buildings are treated through a biofilter and approved pre-treatment system prior to discharge to atmosphere.

Odour Audit

- C21. The Applicant shall conduct an odour audit of the ARRT Facility to validate the odour data used in the EIS. The odour audit shall:
 - (a) be prepared by an independent odour expert in consultation with the EPA and Council;
 - (b) be submitted to the EPA, Council and the Secretary within 6 weeks of commencement of operation of the ARRT Facility and again after 6 months of operation;
 - (c) include collection and analysis of odour samples in accordance with the EPA's *Approved Methods for Sampling and Analysis of Air Pollutants in NSW*;
 - (d) validate the efficiencies of the odour controls, including the biofilter(s) and pre-treatment system;
 - (e) demonstrate the final design achieves an equivalent or better performance than stated in the EIS, supported by dispersion modelling in accordance with EPA's *Approved Methods for Sampling and Analysis of Air Pollutants in NSW*, if required; and
 - (f) identify additional mitigation measures with a timeline for implementation, where odour performance significantly differs from the predictions in the EIS.

GREENHOUSE GAS

- C22. The Applicant shall implement all reasonable and feasible measures to minimise energy use on site and greenhouse gas emissions produced on site.

LEACHATE

Landfill – Dual Gas and Leachate Trench

- C23. The Applicant shall design and install a dual gas and leachate management trench near the perimeter of the re-profiled landfill to intercept sideways movement of leachate. The trench shall:
 - (a) be designed in accordance with the requirements of the EPA;
 - (b) be approved by the EPA, prior to construction of the trench and landfill re-profiling;
 - (c) include extraction risers along the length of the trench to allow extraction and transfer of leachate to the existing ring main; and
 - (d) be installed in accordance with a CEMP, prepared by a suitably qualified person and submitted to the EPA at least one month prior to construction of the trench.

Landfill Gas Infrastructure

- C24. The Applicant shall maintain and operate the landfill gas infrastructure on the site, at all times. The Applicant shall retain and operate the gas collection system within the prepared surface (stripped back cover) as much as practicable.

Operating Conditions

- C25. Accumulated sludge and sediment formed during leachate storage at the site shall be disposed of to a special waste area at the LHRRP, separate from the active tip face.

- C26. The Applicant shall manage all water that comes into contact with waste at the GO Facility as leachate. Leachate generated at the GO Facility may only be reused in the composting process on site or disposed to sewer in accordance with a Trade Waste Agreement or as otherwise agreed in writing with the EPA.
- C27. All leachate generated at the ARRT Facility must be stored indoors or in enclosed tanks and used in the ARRT composting process or transferred for disposal to a Facility lawfully permitted to receive it.

Leachate Monitoring

- C28. The Applicant shall routinely monitor leachate volumes from all sources and re-calibrate the leachate model included in the EIS, to ensure adequate storage, treatment and disposal capacity is maintained at all times. The Applicant shall report the results of on-going monitoring and model calibration every year in the Annual Review required under Condition D7.
- C29. The Applicant shall implement any recommended measures identified by leachate model calibrations to maintain adequate storage, treatment and disposal capacity for the LHRRP at all times.

SURFACE WATER & GROUNDWATER

Discharge Limits

- C30. The Development shall comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.

GO Facility

- C31. The Applicant shall ensure excess water collected in the leachate dams at the GO Facility during high rainfall periods is transported off-site and disposed of lawfully or discharged to sewer in accordance with a Trade Waste Agreement.
- C32. The Applicant shall prepare and submit a detailed design for managing surface water from roofs and breathable membrane covers at the GO Facility. The design shall:
- (a) be approved by the EPA prior to the commencement of operation of the GO Facility;
 - (b) demonstrate that surface water runoff from the roof and breathable membrane covers does not come into contact with waste; and
 - (c) describe a program for on-going monitoring of the water quality discharged from the GO Facility to Mill Creek.

Mill Creek

- C33. The Applicant shall prepare an Aquatic Habitat Monitoring Plan to monitor the stream health of Mill Creek within the site. The plan shall:
- (a) be prepared by a suitably qualified and experienced person in consultation with DPI Water;
 - (b) be submitted to the Secretary prior to construction of the GO Facility and updated and re-submitted to the Secretary prior to construction of the ARRT Facility;
 - (c) describe the monitoring locations, frequency and parameters to be measured; and
 - (d) detail the measures to be implemented if monitoring indicates the habitat quality of Mill Creek is decreasing as a result of activities on the site.
- C34. The Applicant shall prepare a Mill Creek Stream Rehabilitation, Stabilisation and Vegetation Management Plan. The plan shall:
- (a) be prepared by a suitably qualified and experienced person in consultation with DPI Water;
 - (b) be submitted to the Secretary prior to construction of the GO and ARRT facilities;
 - (c) be prepared in accordance with DPI Water *Guidelines for Controlled Activities on Waterfront Land*;

- (d) detail proposed stream realignment works including details of the measures to minimise water quality impacts;
- (e) detail the proposed rehabilitation and stabilisation of the stream including methods and staging of works;
- (f) detail opportunities to maximise the width of riparian zones, particularly in the final landform design, and detail the vegetation types, maintenance, monitoring and performance criteria for the rehabilitation works; and
- (g) be updated to include any changes to the rehabilitation objectives and staging approved in the Post Closure Plan for the site, required under Condition C40.

Groundwater Management Plan

- C35. The Applicant shall prepare a Groundwater Management Plan for the site. The plan must:
- (a) be prepared by a suitably qualified and experienced person, in consultation with the EPA and DPI Water;
 - (b) be submitted to the Secretary, prior to the commencement of construction;
 - (c) detail the groundwater monitoring network including location and frequency of monitoring, the parameters for testing, relevant criteria and trigger levels for action;
 - (d) include a protocol for investigation, notification and mitigation of any exceedances of the identified trigger levels; and
 - (e) describe the measures that could be implemented to respond to identified groundwater contamination.

Groundwater Monitoring

- C36. The Applicant shall re-establish historic groundwater monitoring bores (BH24, BH31, MB021 and MB022) to improve detection of leachate in groundwater systems to the north of the site. The Applicant shall monitor groundwater from these bores in accordance with the requirements of an EPL for the site and the groundwater management plan required under Condition C35.

Bunding

- C37. The Applicant shall store all chemicals, fuels and oils used on the site in appropriately banded areas in accordance with the requirements of all relevant Australian Standards, and/or the EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Handbook*.

FINAL LANDFORM, REHABILITATION & CLOSURE

Final Landform

- C38. The Applicant shall rehabilitate the site to achieve the final landform shown in Appendix C, in accordance with the criteria in the EPA's *Environmental Guidelines: Solid Waste Landfills, 2016*, or its latest version.
- C39. The Applicant shall ensure the height of the final landform does not exceed 179.9 metres Australian Height Datum (AHD) post-settlement of the waste mass and final capping, as described in the EIS.

Post-Closure Plan

- C40. The Applicant shall amend the draft Post-Closure Plan for the site, to the satisfaction of the Secretary. The plan shall:
- (a) be prepared by a suitably qualified and experienced person;
 - (b) be submitted to the EPA and the Secretary 12 months prior to the planned closure of the landfill, GO and ARRT Facilities on the site;
 - (c) be approved by the EPA, Council, ANSTO and the Secretary, prior to commencement of the final phase of landfill capping and rehabilitation works;
 - (d) detail the requirements for on-going management of the capped waste mass;
 - (e) describe monitoring and management measures to ensure integrity of the cap;
 - (f) describe on-going leachate and surface water management, odour and dust control;

- (g) detail landfill gas monitoring and maintenance;
- (h) identify future land uses on the site, developed in consultation with Council, ANSTO, the Cronulla Model Aero Club and local recreational and sporting groups;
- (i) include a rehabilitation management plan, including, but not limited to:
 - i. rehabilitation works as generally depicted in Appendix C;
 - ii. criteria for evaluating the effectiveness of the rehabilitation;
 - iii. a program and schedule to monitor the effectiveness of the rehabilitation;
 - iv. a program and schedule for routine maintenance of the rehabilitation;
 - v. any remedial actions necessary to ensure the success of the rehabilitation;
 - vi. a weed management plan; and
- (j) incorporate the post closure requirements detailed in the VPA.

VISUAL AMENITY

- C41. The Applicant shall undertake screen planting as shown on the plan in Appendix D to minimise the visual impacts of the Development. The planting shall be completed by January 2025, subject to agreement with ANSTO for works on ANSTO's land. Evidence of implementation of the planting shall be provided to the satisfaction of the Secretary, within one month of completing the planting.
- C42. The Applicant shall progressively hydro-mulch and grass completed landfill areas to minimise the visual impacts of the Development.

BIODIVERSITY

Construction

- C43. The Applicant shall prepare a Vegetation and Fauna Management Plan to minimise impacts on biodiversity during construction of the GO and ARRT facilities, to the satisfaction of the Secretary. The plan shall:
- (a) be prepared by a suitably qualified and experienced ecologist;
 - (b) be submitted to the Secretary, prior to the commencement of construction of the GO and/or ARRT Facility, whichever is sooner;
 - (c) include a vegetation clearing protocol and pre-clearance surveys;
 - (d) detail specific procedures for protecting native vegetation, including the *Coastal Upland Swamp*, and fauna adjacent to construction areas, including the access track near the GO Facility, the sediment pond north of the ARRT Facility and the verge adjacent to Heathcote Road;
 - (e) detail erosion and sediment controls and weed management procedures; and
 - (f) include procedures for seed collection and translocation of key species, including *Allocasuarina diminuta subsp. Mimica* and *Acacia bynoeana*.
- C44. The Applicant shall appoint a qualified and experienced ecologist to be present on site during native vegetation clearing for construction of the GO and ARRT facilities and realignment of Mill Creek.

Biodiversity Offset Strategy

- C45. The Applicant shall purchase and retire the ecosystem and species credits listed in Table 1, in accordance with OEH's *Frameworks for Biodiversity Assessment 2014* and the *NSW Biodiversity Offsets Policy for Major Projects 2014*, to the satisfaction of the Secretary. The credits shall be purchased and retired prior to construction of the relevant facility listed in Table 1.

Table 1: Biodiversity Offset Strategy

Facility	No. of Credits	Offset Type
GO Facility	185 ecosystem	Red Bloodwood – Scribbly Gum heathy woodland on sandstone plateaux
	97 species	Eastern Pygmy-possum
ARRT Facility	143 ecosystem	Red Bloodwood – Scribbly Gum heathy woodland on sandstone plateaux
	88 species	Eastern Pygmy-possum
	5154 species	<i>Allocasuarina diminuta subsp. mimica</i>

Note: The areas referred to in Table 1 are shown on the figures in Appendix A.

- C46. The Applicant shall not commence construction of a facility listed in Table 1, until the Biodiversity Offset Strategy for that facility has been implemented, to the satisfaction of the Secretary.
- C47. The Applicant shall ensure the biodiversity offsets are secured by a conservation mechanism, which protects and manages the land in perpetuity, to the satisfaction of the Secretary.

TRANSPORT AND ACCESS

Construction Traffic Management Plan

- C48. The Applicant shall prepare a Construction Traffic Management Plan for construction of the GO and ARRT facilities. The plan shall:
- (a) be prepared by a suitably qualified and experienced expert, in consultation with Council and RMS;
 - (b) be submitted to the Secretary, prior to the commencement of construction of the GO and/or ARRT Facility;
 - (c) detail the measures to be implemented to ensure road safety and network efficiency during construction;
 - (d) detail heavy vehicle routes, access and parking arrangements;
 - (e) include a Driver Code of Conduct to:
 - minimise the impacts of construction works on the local and regional road network;
 - minimise conflicts with other road users;
 - ensure truck drivers use specified routes;
 - (f) include a program to monitor the effectiveness of these measures; and
 - (g) if necessary, detail procedures for notifying residents and the community, of any potential disruptions to routes.

Intersection Safety Review

- C49. The Applicant shall conduct a safety review of the Little Forest Road and New Illawarra Road intersection in the years 2020 and 2025 to ensure the on-going safe and efficient performance of the intersection. The safety reviews shall be prepared to the satisfaction of the Secretary and shall:
- (a) be prepared by an independent traffic expert;
 - (b) be undertaken in consultation with Council and RMS and in accordance with relevant guidelines;
 - (c) be approved by the Secretary and RMS, by the end of 2020 and 2025;
 - (d) analyse vehicle movements and delays during peak periods;
 - (e) establish intersection performance and the need for any intersection upgrade works; and
 - (f) include a program for implementation of intersection upgrade works, if required.
- C50. The Applicant shall implement the recommendations of the safety reviews, including any required intersection upgrades, to the satisfaction of the Secretary and RMS. The timing and payment for implementation of any required intersection upgrades shall be agreed with the Secretary and RMS.

Operating Conditions

C51. The Applicant shall ensure:

- (a) all staff vehicles, plant and equipment are parked on site and do not park on the public road network;
- (b) all loading and unloading of materials is carried out on site;
- (c) all trucks entering or leaving the site with loads have their loads covered;
- (d) vehicles do not track dirt onto the public road network; and
- (e) heavy vehicles use designated routes to minimise impacts on the local and regional road network.

Parking

C52. The Applicant shall provide sufficient parking facilities for site personnel and heavy vehicles on the site, to ensure traffic associated with the site does not utilise public and residential streets or public parking facilities.

NOISE

Hours of Work

C53. The Applicant shall comply with the hours detailed in Table 2, unless otherwise agreed in writing by the EPA or the Secretary.

Table 2: Hours of Work

Facility	Activity	Day	Time
Landfill	Construction	Monday – Friday	7 am - 5 pm
		Saturday - Sunday	8 am - 5 pm
	Operation	Monday – Friday Saturday - Sunday	6 am - 5 pm 8 am - 5 pm
	Other operations ¹	Monday – Sunday	Anytime
GO Facility	Construction	Monday – Friday	7 am - 5 pm
		Saturday - Sunday	8 am - 5 pm
	Operation	Monday – Friday Saturday - Sunday	6 am – 5 pm 8 am – 5 pm
	Other operations ²	Monday – Sunday	Anytime
ARRT Facility	Construction	Monday – Friday	7 am - 5 pm
		Saturday - Sunday	8 am - 5 pm
	Operation	Monday – Sunday	Anytime

Notes:

¹ Other landfilling operations includes only security guard control, machinery maintenance and/or repairs, site infrastructure maintenance and/or repairs (landfill gas and leachate), and emergency management activities related to site safety, emergency repairs and site infrastructure repairs

² Other GO operations includes only repair works, machinery maintenance and repairs, loading bunkers, final product preparation manufacture (but does not include shredding) and emergency management activities related to site safety, emergency repairs and site infrastructure repairs. Unloading bunkers is only permitted between the hours of operations listed under 'GO Facility - Operation' in Table 2.

Operational Noise Limits

C54. The Applicant shall ensure noise from the site does not exceed the noise limits in Table 3.

Table 3: Noise Limits dB(A)

No.	Location	Day	Evening	Night	Night
		L _{eq} (15min)	L _{eq} (15min)	L _{eq} (15min)	L ₁ (1min)
R1	Engadine	35	35	35	45
R2	Barden Ridge	35	35	35	45
R3	Menai	35	35	35	45
R6	Gandangara	37	37	37	45
R7	Gandangara North	35	35	35	45

Note:

- To identify a noise receiver location, refer to the figure in Appendix E.
- Noise generated on the site is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the EPA's NSW Industrial Noise Policy.

Noise Management

C55. The Applicant shall implement the noise management measures described in the OEMPs for the LHRRP, GO and ARRT facilities to ensure noise from the site complies with the limits in Table 3.

Noise Monitoring

C56. The Applicant shall monitor noise from the site to demonstrate compliance with the noise limits in Table 3. The monitoring shall be:

- undertaken annually, or to address genuine noise complaints that are related to the site as determined by the EPA or the Secretary;
- in accordance with the *NSW Industrial Noise Policy*; and
- reported to the EPA and the Secretary within one month of completing the monitoring, including details of management actions taken and the effectiveness of the actions to address any exceedances of the limits in Table 3.

LITTER & PEST CONTROL

C57. The Applicant shall:

- ensure all waste loads are covered;
- inspect and clear the site (and if necessary, surrounding area) of litter arising from the Development on a daily basis; and
- maintain the site in a clean and tidy state at all times.

C58. The Applicant shall:

- implement measures to manage pests, vermin and declared noxious weeds on site; and
- inspect the site routinely to ensure the measures are effective, and pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area.

Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.

HERITAGE

Unexpected Finds Protocol

C59. If Aboriginal objects are uncovered during construction, work in the immediate area must stop and the Regional Operations Group of the OEH, Council and the Registered Aboriginal Parties are to be consulted.

C60. If any archaeological relics are uncovered during the course of the work, then all works shall cease immediately in that area and the OEH Heritage Branch contacted. Depending on the possible

significance of the relics, an archaeological assessment and an excavation permit under the *NSW Heritage Act 1977* may be required before further works can continue in that area.

Site Impact Recording

- C61. Within one month of the date of this consent, the Applicant shall submit Site Impact Recording Forms to OEH for the four previously impacted Aboriginal heritage sites, AHIMS 52-2-1108, 52-2-1029, 52-2-1030 and 52-2-1031, as described in the EIS.

FIRE PREVENTION & MANAGEMENT

- C62. The Applicant shall:

- (a) design and construct the GO and ARRT Facility buildings to meet the fire safety requirements of the BCA; and
- (b) maintain a 10 metre wide Asset Protection Zone around the northern and western sides of the GO and ARRT Facility buildings.

- C63. The Applicant shall prepare an Emergency Response Plan for the site detailing procedures to be implemented in the event of a fire on or near the site. The Emergency Response Plan shall:

- (a) be prepared by a suitably qualified and experienced expert in consultation with Council and the NSW Rural Fire Service;
- (b) be submitted to the Secretary within three months of the date of this consent, or an alternative timing as otherwise agreed with the Secretary; and
- (c) detail emergency access and egress routes, including an alternative access route, escape routes, refuge areas, assembly points and evacuation procedures.

SCHEDULE D

ENVIRONMENTAL MANAGEMENT, REPORTING, AUDITING AND COMMUNITY ENGAGEMENT

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

- D1. The Applicant shall prepare a Construction Environmental Management Plan (CEMP) for the Development, to the satisfaction of the Secretary. The Plan must:
- (a) be prepared in consultation with Council and be approved by the Secretary prior to construction of the Development;
 - (b) identify the statutory approvals that apply to the site;
 - (c) outline all environmental management practices and procedures to be followed during construction;
 - (d) describe all activities to be undertaken on the site during construction, including a clear indication of construction stages;
 - (e) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
 - (f) describe the roles and responsibilities for all relevant employees involved in construction works; and
 - (g) include the management plans under Condition D2 of this consent.
- D2. As part of the CEMP for the Development, required under Condition D1 of this consent, the Applicant shall include the following:
- (a) a construction management plan for the dual gas and leachate trench prepared in consultation with EPA (Condition C23);
 - (b) an erosion and sediment control plan;
 - (c) a vegetation and fauna management plan (Condition C43); and
 - (d) a construction traffic management plan (Condition C48).
- D3. The Applicant shall carry out construction of the Development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Operational Environmental Management Plan

- D4. The Applicant shall amend the draft Operational Environmental Management Plan (OEMP) for the Landfill, GO and ARRT Facilities, to the satisfaction of the Secretary. The Plans must:
- (a) be prepared in consultation with Council and be approved by the Secretary prior to operation of the Development;
 - (b) identify the statutory approvals that apply to the site;
 - (c) outline all environmental management practices and procedures to be followed during operation;
 - (d) detail how the environmental performance of the Development will be monitored, and what actions will be taken to address identified adverse environmental impacts; and
 - (e) include the management plans under Condition D5 of this consent.
- D5. As part of the OEMP's for the Development, required under Condition D4 of this consent, the Applicant shall include the following:
- (a) site air quality and odour management plan (Condition C11);
 - (b) ARRT Facility air quality and odour management plan (Condition C17);
 - (c) biofilter and pre-treatment monitoring and maintenance plan (Condition C18);
 - (d) aquatic habitat monitoring plan (Condition C33);
 - (e) Mill Creek stream rehabilitation, stabilisation and vegetation management plan (Condition C34);
 - (f) groundwater management plan (Condition C35); and
 - (g) emergency response plan (Condition C63).

- D6. The Applicant shall operate the Development in accordance with the OEMP's approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Management Plan Requirements

- D7. The Applicant shall ensure the Management Plans required under this consent are prepared in accordance with any relevant guidelines, and include:
- (a) detailed baseline data;
 - (b) a description of:
 - i. the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - ii. any relevant limits or performance measures/criteria; and
 - iii. the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Development or any management measures;
 - (c) a description of the measures that will be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - i. impacts and environmental performance of the Development; and
 - ii. effectiveness of any management measures (see (c) above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences;
 - (f) a program to investigate and implement ways to improve the environmental performance of the Development over time;
 - (g) a protocol for managing and reporting any:
 - i. incidents;
 - ii. complaints;
 - iii. non-compliances with statutory requirements; and
 - iv. exceedances of the impact assessment criteria and/or performance criteria; and
 - (h) a protocol for periodic review of the plan.

Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

Revisions to Strategies, Plans and Programs

- D8. Within three months of:
- (a) an audit submitted under Condition D12;
 - (b) an incident report under Conditions D10 and D11;
 - (c) an annual review under Condition D9; and/or
 - (d) a modification to this consent,

the Applicant shall review, and if necessary, revise the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the site.

REPORTING

Annual Review

- D9. By the end of December each year, and annually thereafter, the Applicant shall review the environmental performance of the site, to the satisfaction of the Secretary. This review must:
- (a) be submitted to the Secretary by the end of February each year;
 - (b) describe the operations that were carried out in the past year;
 - (c) analyse the monitoring results and complaints records of the site over the past year, including a comparison of these results against the:
 - i. relevant statutory requirements, limits or performance measures/criteria;
 - ii. monitoring results of previous years;
 - iii. predictions in the EIS;

- (d) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- (e) identify any trends in the monitoring data;
- (f) identify any discrepancies between the impacts predicted in the EIS and the actual impacts of the site and analyse the potential cause of any significant discrepancies; and
- (g) describe what measure will be implemented over the next year to improve the environmental performance of the site.

Incident Reporting

- D10. Upon detecting an exceedance of the limits/performance criteria in this consent or the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant shall immediately (or as soon as practical thereafter) notify the Secretary and any other relevant agencies of the exceedance/incident.
- D11. Within seven days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

INDEPENDENT ENVIRONMENTAL AUDIT

- D12. Within one year of the date of this consent, and every three years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the site. The audit must:
- (a) be carried out by a suitably qualified, experienced and independent audit team whose appointment has been endorsed by the Secretary;
 - (b) assess the environmental performance of the site, and its effects on the surrounding environment;
 - (c) determine whether the site is complying with the relevant standards, performance measures and statutory requirements;
 - (d) review the adequacy of the Environmental Management Plans for the site, compliance with this consent, and any other licences and consents; and, if necessary;
 - (e) recommend measures or actions to improve the environmental performance of the site, and/or any plan/program required under this consent.
- D13. Within three months of commissioning the audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary with a response to all recommendations contained in the audit report.

COMMUNITY ENGAGEMENT

Community Reference Group

- D14. The Applicant shall establish and maintain a Community Reference Group (CRG) to maintain regular communication with the local community regarding activities on the site, any environmental impacts, monitoring results and management actions. The CRG shall include representatives from the local community, recreational and sporting clubs, ANSTO, Council and the Applicant. The CRG shall meet on a quarterly basis.

Access To Information

- D15. The Applicant shall make the following information publicly available on its website and keep the information up to date.
- (a) the EIS, RTS, CEMP and OEMPs;
 - (b) current statutory consents, approvals and licences for the site;
 - (c) approved strategies, plans and programs;
 - (d) a summary of all monitoring data for the site as required under this consent;
 - (e) a complaints register, updated on an annual basis;
 - (f) Annual Reviews, Independent Environmental Audits and the Applicant's response to the recommendations; and

(g) any other matter required by the Secretary.

Note: This requirement does not require any confidential information to be made available to the public.

APPENDIX A DEVELOPMENT PLANS

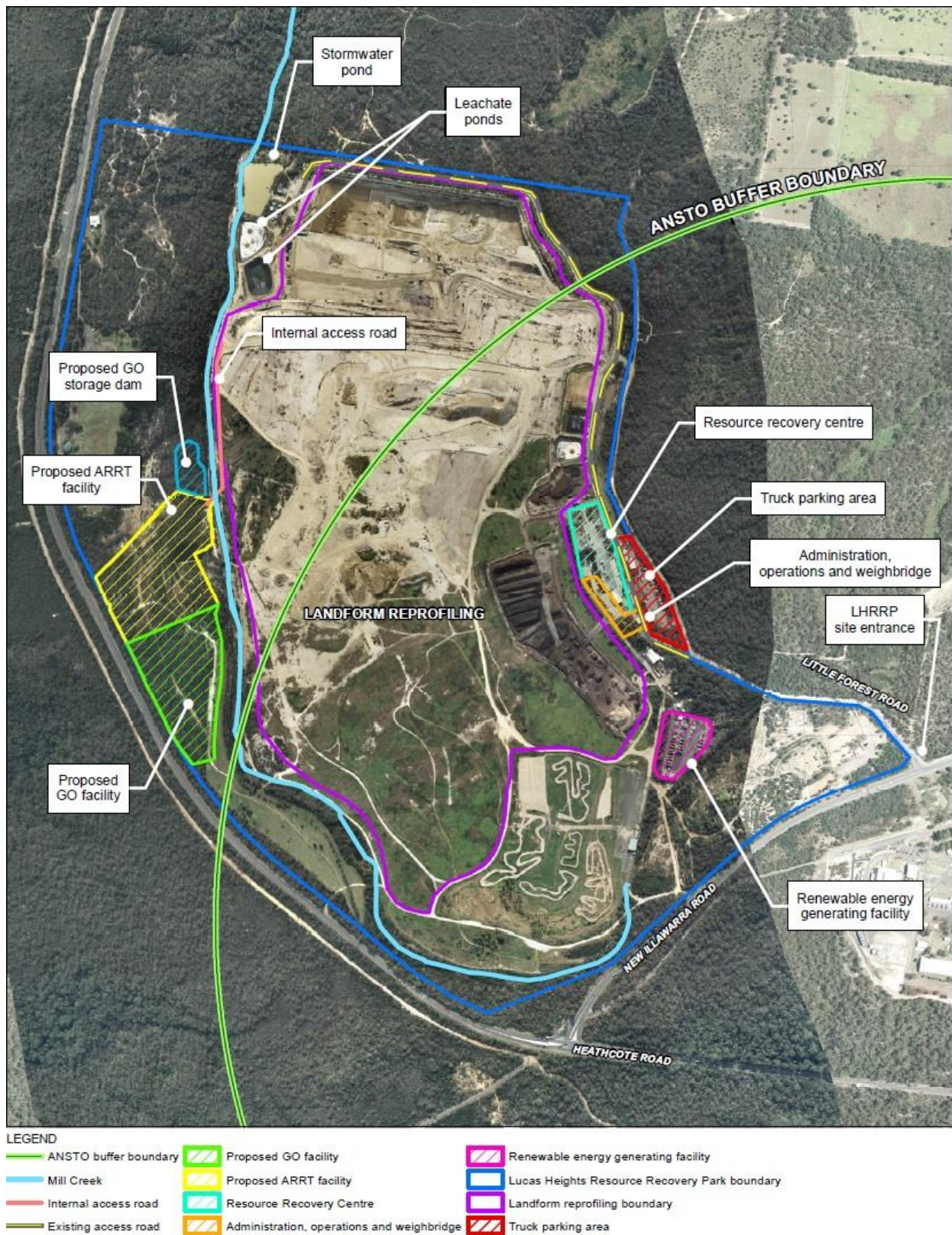


Figure 1: Key Infrastructure

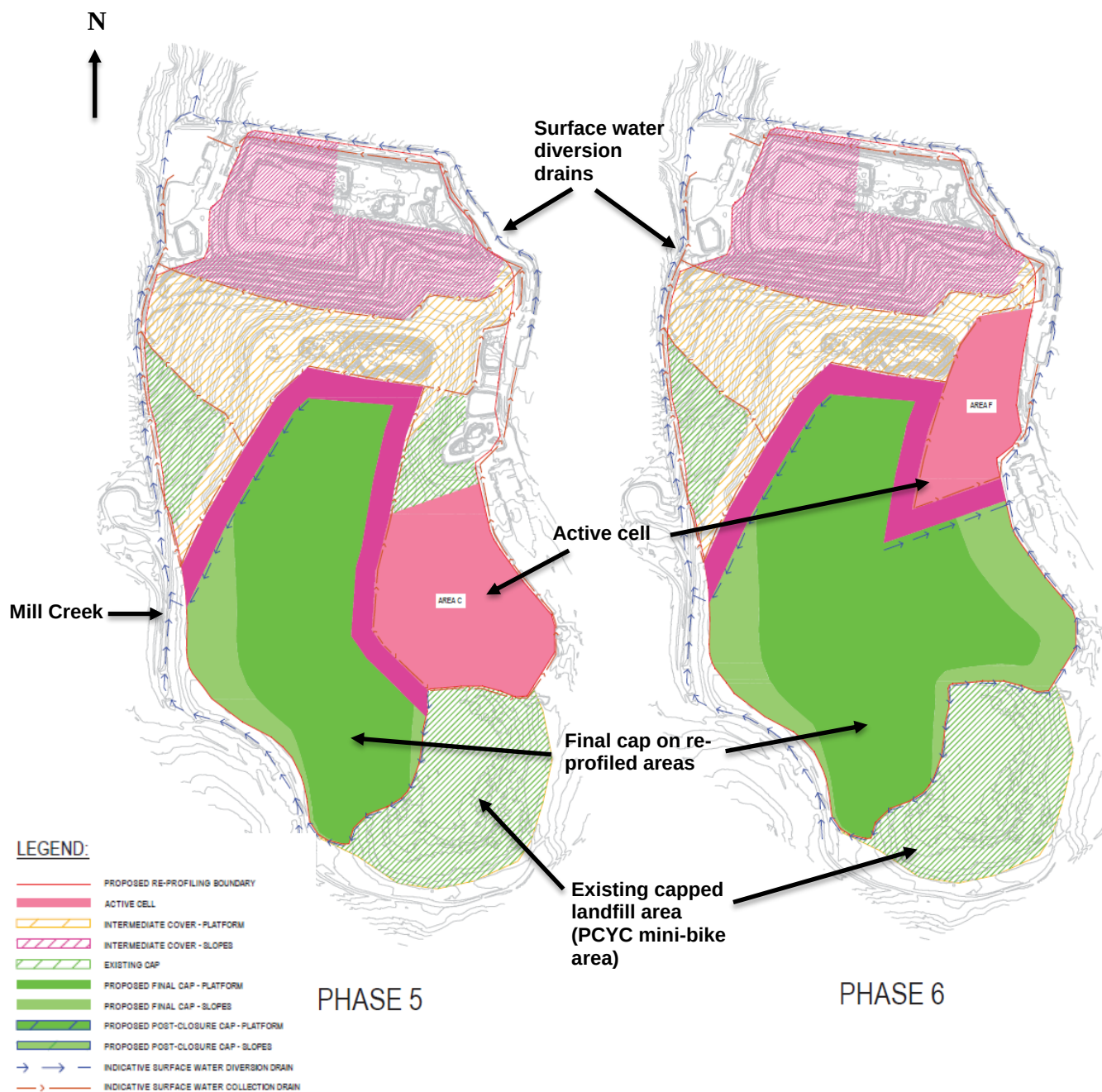


Figure 2: Re-Profiling of Existing Landfill (shows landfilling on top of already capped areas)

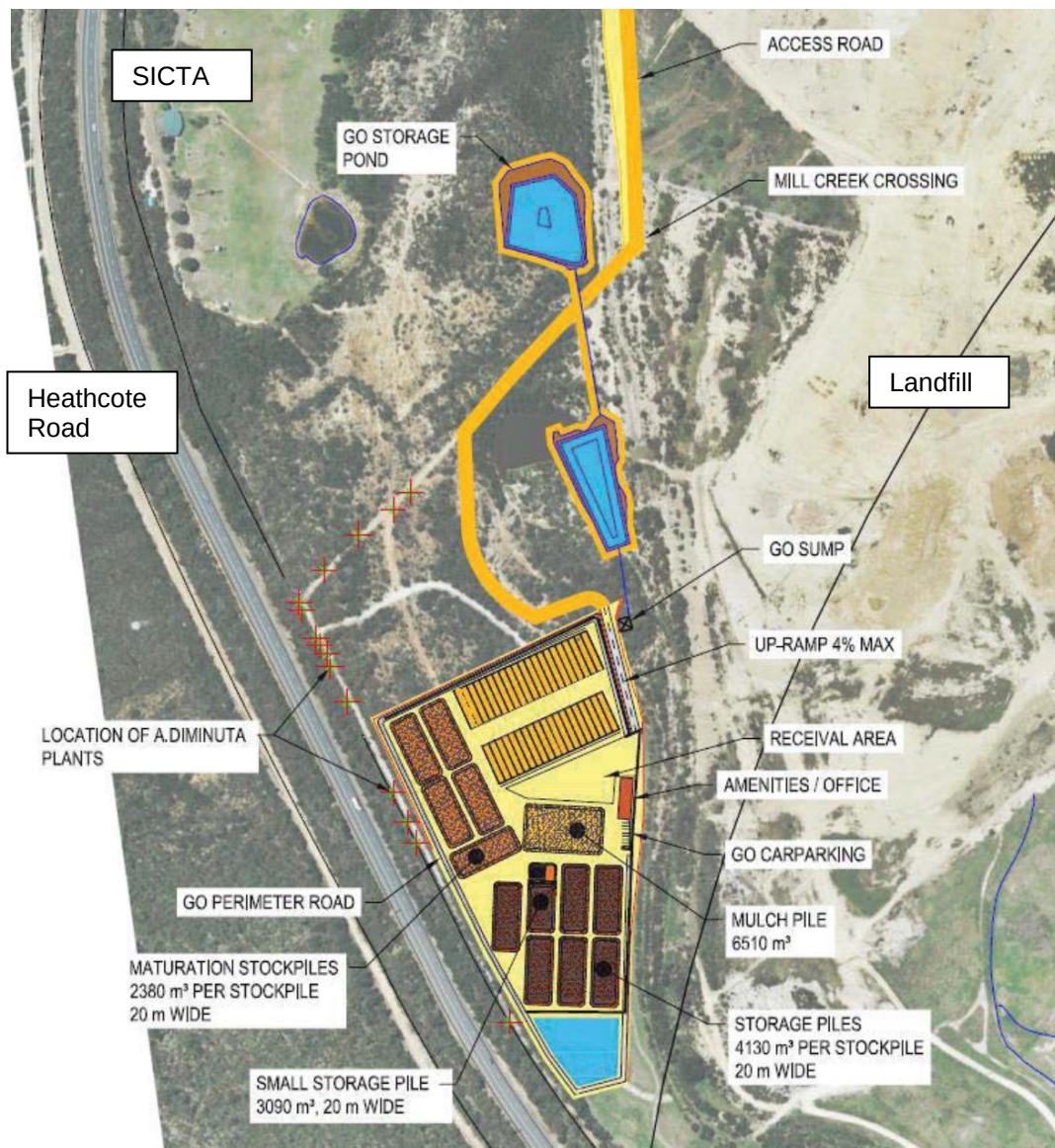


Figure 3: Garden Organics Facility

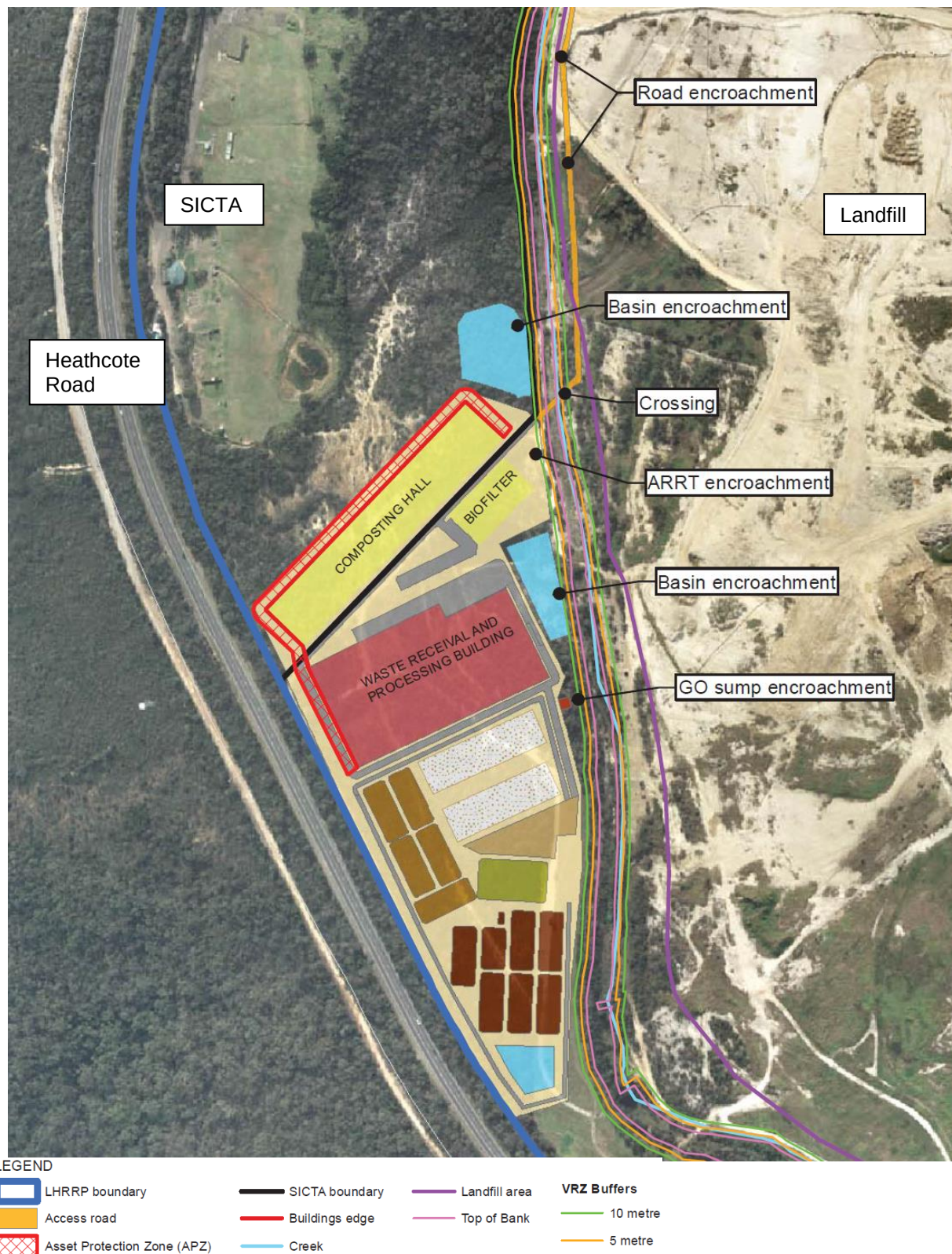


Figure 4: Advanced Resource Recovery Technology Facility

APPENDIX B APPLICANT'S MANAGEMENT AND MITIGATION MEASURES

Summary of mitigation and management measures

The following summarises the proposed mitigation and management measures.

Design

Final landform (reprofiling)

The NSW EPA (1996) Environmental Guidelines: Solid Waste Landfills, Benchmark Technique no. 28 states the following, 'The final settlement of the seal-bearing surface should leave a gradient of 5% to defined drainage points'.

The proposed final landform would provide a final surface that has a minimum grade of 5% towards defined drainage points. Details of the design basis for the final landform and settlement analysis are contained in Appendix C.

GO Facility

The relocated GO facility would be partially enclosed with breathable membranes used as part of the active composting phase and aerated concrete 'bunkers' used during the active composting phase to reduce the potential for odour

A perimeter bund would be constructed around the whole GO facility, with all stormwater that comes into contact with garden organics being captured and treated as leachate

A designated pond would be used for the containment of water from the GO facility that comes in contact with the garden organics. Leachate generated from the GO facility would be treated in a separate system to the leachate from the LHRRP and reused to the maximum extent possible

ARRT facility

The proposed ARRT facility would utilise existing best practice technologies in use by SITA both in Europe and locally in Australia, which would include:

Fully enclosed buildings under negative air pressure, with self closing roller doors to reduce the potential for odour

Use of suitably sized biofilters to capture and treat air from the ARRT facility prior to release

Construction

The OEMPs for the LHRRP, ARRT facility and GO facility contain detailed prevention, mitigation and rectification measures to address as potential impacts associated with existing operations at LHRRP and the proposal.

Table 1 summarises mitigation and management measures outlined in the technical studies undertaken for this EIS. These should be read in conjunction with the management strategies (prevention, mitigation and rectification) detailed in the OEMPs.

Table 1 Construction mitigation and management measures

Potential issue	Mitigation and management measures
Waste management	• Prepare a waste management sub-plan for the landfill, ARRT facility and GO facility as part of the CEMP
Traffic, transport and access	• Undertake a Community information and awareness program during construction • Prepare a Traffic Management Plan for the construction phase of the proposal including the following key measures: – Consultation with RMS and SSC to ensure that general signposting of construction access roads are appropriate and provide adequate warning of heavy vehicle and construction activity – Distribute construction activity warning notices to advise local road users of scheduled construction activities – Provide advance notice of road/lane closures and advice on alternative routes (if required) – Whenever practical, promote the use internal and haulage access roads rather than public roads by construction vehicles – Manage the transportation of construction materials to maximise vehicle loads and minimise vehicle movements in consultation with RMS and SSC and the NSW Police Service
Noise	• Select plant and equipment to minimise noise emissions where possible whilst maintaining efficiency of function. Fit residential grade silencers and maintain all noise control equipment in good order • Restrict noisy activities to daylight hours • Use reverse quackers with a low decibel output rather than beepers for excavators and wheel loaders
Visual	• Implement 'early works' rehabilitation and maintenance measures, including substantial woodland and understory planting to screen the LHRRP from ANSTO land and adjacent roads including along Heathcote Road and around the boundary of the existing PCYC area • Apply hydromulch on exposed batter areas
Dust	• Prepare a dust management plan sub-plan as part of the CEMP
Soils and surface water	• Develop erosion and sediment control plan or soil and water management plan for the GO and ARRT facilities • Continue surface water monitoring as prescribed in EPL 5065 • Develop a soil and water management plan for the GO / ARRT facility and incorporate into the construction contractor's environmental management plans • Continue use of existing measures in place to minimise demand for potable water including reuse of water captures in site basins for dust suppression • Construct the ARRT facility so that there is not a significant increase in demand for potable water during construction • Construct the GO facility so that there is no increase in potable water demand in addition to current demands
Groundwater	• Develop appropriate site management practices and emergency response procedures to be detailed in a construction and environmental management plan (CEMP) for the ARRT and GO facility to minimise water quality impacts associated with construction activities • Install and monitor six additional groundwater wells for the ARRT and GO facility, comprising four shallow wells and two deeper wells. These would characterise deeper flow directions and identify short term water quality impacts in the deeper aquifer system from the ARRT and GO facility. The two deeper wells would be located at the northwest corner of the proposal site on Heathcote Road and east of the GO sump

Potential issue	Mitigation and management measures
Contamination	• After development approval and prior to the GO facility and ARRT facility development, conduct targeted soil sampling and subsequent lead analysis on the ARRT area which is adjacent to, and proposed to extend onto SICTA • As recommended in the groundwater assessment, install new monitoring wells around the GO facility and ARRT facility prior to construction • Monitor these wells during construction of the GO facility and ARRT facility to provide early indication of any additional impacts from construction or operation on the proposal site • Undertake a general site inspection in conjunction with the soil sampling and well installation to identify any visual or olfactory signs of potential contamination on the proposal site, primarily in the form of stockpiled materials or previously unknown land use activities. • If unexpected material (including waste materials or evidence of filling) is encountered during construction, seek advice from an appropriately qualified Environmental Consultant in regard to the management of this material • Develop and detail in the CEMP appropriate site management practices and emergency response procedures prior to construction to minimise water quality impacts associated with GO facility and ARRT facility construction • If required by the planning authorities, prepare a Statutory Site Audit report to approve any remediation works required to make the land suitable for construction of the ARRT or GO facilities.
Hazards and risk	• Undertake a detailed safety study to confirm the safety exclusion zone from SICTA operations and identify any hazards associated with constructing and operating the ARRT facility in the proposed location • Propose suitable mitigation measures to be incorporated in building design and construction
Fire prevention and management	• Apply the relevant fire safety requirements of the Building Code of Australia to any buildings, including provision of smoke detectors, fire extinguishers, fire blankets, fire hose reels and sprinklers where applicable • Design the buildings on site to meet the requirements of the Planning for Bushfire Protection guidelines to protect staff and minimise the potential for building damage, including provision of a 10 m APZ. • Identify and incorporate appropriate construction standards for buildings and refuge areas during the detailed design phase. • Ensure that bushfire management procedures are included in the CEMP. This would include: – Requirements for emergency access and egress including nomination of an alternative access route. – Formal preparedness procedures for staff and contractors to maintain awareness of and respond to escalating forecast fire danger – Formal pre-rehearsed procedures for staff and contractors to respond to respond to a formal bushfire warning being issued by emergency services, including identification of escape routes and refuge areas
Biodiversity	General • Ensure that all workers are provided with an environmental induction prior to starting work on site. This would include information on the ecological values of the proposal site, protection measures to be implemented to protect biodiversity and penalties for breaches • Prepare a flora and fauna management sub-plan as part of the CEMP incorporating recommendations below, and expanding where necessary • Put in place measures to suppress dust during clearing and construction Flora species

Potential issue	Mitigation and management measures
	- Collect seeds of the <i>Acacia bynoeana</i> individual in the appropriate season (September to January) prior to vegetation clearing occurring. Plant seeds in the nursery and use any individuals grown for onsite plantings. Propagate <i>Acacia</i> species from scarified seed or using boiling water treatment (Wrigley and Fagg 2007) - Carefully remove the <i>Acacia bynoeana</i> individual and transfer it to the on-site nursery, along with soil adjacent to the individual which may include a long-term soil seed bank (Benson and Macdougall 1996). Replant it at the proposed offset site or another suitable location - Collect seeds and propagules of <i>Allocasuarina diminuta</i> subsp. <i>mimica</i> in March prior to vegetation clearing occurring. Plant seeds in the nursery and use any individuals grown for on site plantings. - Collect ramets of <i>Allocasuarina diminuta</i> subsp. <i>mimica</i> and associated soil prior to vegetation clearing and transfer them to the on-site nursery for propagation and replanting. Undertake replanting in areas that are not likely to be impacted by future development, including the proposed offset site. Plant ramets along the realigned Mill Creek where the ironstone soil is present. Do not plant <i>Allocasuarina littoralis</i> near these plants as this species can shade out <i>Allocasuarina diminuta</i> subsp. <i>mimica</i> and mycorrhizal associations may be different. Carry out any removal and replanting with input from the SSC bushcare staff. - Prepare a management plan for the collection of seed and translocation of plants as part of the CEMP for the proposal and include monitoring and assessment of the success of the program Vegetation clearing - Limit disturbance of vegetation to the minimum necessary to construct the proposal - Ensure that vehicles are appropriately washed prior to work on site to prevent the potential spread of Cinnamon Fungus (<i>Phytophthora cinnamomi</i>) and Myrtle Rust (<i>Pucciniales fungi</i>) in accordance with the national best practice guidelines for <i>Phytophthora</i> (DEH 2006) and the Myrtle Rust factsheet (DPI 2011c) for hygiene control - Where the proposal footprint adjoins native vegetation mark the limits of clearing and install fencing around the construction footprint area prior to the commencement of construction activities to avoid unnecessary vegetation and habitat removal - Place stockpiles of fill or vegetation within existing cleared areas (and not within areas of adjoining native vegetation) - Install sediment fences to prevent transfer of sediments into adjacent vegetation Weeds - Actively manage weeds during the construction phase of the proposal, including managing and disposing of weeds that were recorded within the proposal footprint. Manage any noxious weeds in accordance with the NW Act - Clean vehicles and other equipment to be used on site to minimise seeds and plant material entering the proposal site and prevent the introduction of further exotic plant species or disease - Incorporate control measures in the design of the proposal to limit the spread of weed propagules downstream of study area. Use sediment control devices, such as silt fences, to assist in reducing the potential for spreading weeds Fauna habitat - Implement protocols to prevent introduction or spread of chytrid fungus following Office of Environment and Heritage Hygiene protocol for the control of disease in frogs (DECCW 2008)

Potential issue	Mitigation and management measures
	• Ensure that a trained ecologist is present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable • When undertaking clearing surveys: – Stage the vegetation clearing, commencing in the south of the GO facility and progressing northwards to increase the opportunity for fauna to vacate the proposal site and move into areas of 'secure' habitat to evade injury – Mark any hollow-bearing trees to be felled prior to clearing of vegetation. Remove hollow bearing trees in accordance with a hollow-bearing tree management protocol which includes the presence of a qualified ecologist or wildlife expert experienced in the rescue of fauna – Ensure that habitat features (fallen logs and tree hollows) removed from site are salvaged and relocated within adjacent areas of vegetation – Undertake inspections of native vegetation for resident fauna and/or nests or other signs of fauna occupancy – Defer vegetation removal and associated construction activity in areas occupied by more mobile threatened fauna until the fauna has vacated the proposal footprint – Ensure that an ecologist is present during works along Mill Creek to rescue and relocate any frogs to other locations along Mill Creek. Undertake any handling of frogs with respect to the Office of Environment and Heritage Hygiene protocol for the control of disease in frogs (DECCW 2008) Water quality and aquatic habitats • Prepare erosion and sediment control plans in accordance with Volume 2b of Managing Urban Stormwater: Soils and Construction (DECC 2008). Establish erosion and sediment control plans prior to the commencement of construction and update and managed them throughout as relevant to the activities during the construction phase • Regularly inspect erosion and sediment control measures particularly after rainfall events, to ensure their ongoing functionality. • Reinstate stabilised surfaces as quickly as practicable after construction • Apply water to exposed surfaces that are causing dust generation, which may include unpaved roads, stockpiles, hardstand areas and other exposed surfaces (for example recently graded areas) • Ensure that vehicles follow appropriate speeds to limit dust generation • Store all stockpiled material in bunded areas and keep them away from waterways to avoid sediment entering the waterways • Make spill kits available to construction vehicles and put in place a management protocol for accidental spills • Eradicate Plague Minnow (if present) prior to decommissioning to ensure that it is not released into local waterways as a result of draining of dams. Use humane methods and obtain an appropriate licence from NSW Primary Industries (Animal Welfare branch and Fishing and Aquaculture branch) • Salvage large woody debris removed from the realigned creek and place it in the new alignment to maintain habitat values • Construct the new section of the creek to mimic a natural ecosystem and revegetate with locally endemic species. Consideration should be given to using propagated <i>Allocasuarina diminuta</i> subsp. <i>mimica</i>
Landuse	• Submit a planning proposal to enable proposed activities under the SLEP.

Potential issue	Mitigation and management measures
Heritage	- Develop and included in the CEMP an unexpected finds procedure. This would outline the procedures to follow if unexpected Aboriginal objects or non-Aboriginal relics were uncovered during construction - Submit Site Impact Recording Forms for the previously impacts sites, AHMS 52-2-1108, 52-2-1029, 52-2-1030 and 52-2-1031 to OEH
Riparian corridors	Provide a minimum of 875 m² of riparian offsets for the permitted activities
Socio-economic	- Implement measures to reduce the potential for amenity impacts during construction, as identified in the relevant chapters of the EIS - Maintain ongoing engagement with the community during construction. Develop a stakeholder engagement plan would be developed for the proposal construction phase. This would include how information would be disseminated, communication channels including for feedback on the proposal and protocols for responses to feedback or enquiries

Operation

Table 2 summarises mitigation and management measures outlined in the technical studies undertaken for this EIS. These should be read in conjunction with the management strategies (prevention, mitigation and rectification) detailed in the OEMPs.

Table 2 Operation mitigation and management measures

Potential issue	Mitigation and management measures
Waste management	- Include waste handling procedures, waste processing procedures, quality control procedures and protocols (including sampling and testing) and finished product storage and handling requirements in OEMPs - Carry out sampling and testing in accordance with the requirements of relevant resource recovery orders - Apply for specific resource recovery orders if required
Traffic, transport and access	- Perform a safety review in both 2020 and 2025 on the safety of the intersection of New Illawarra Road and Little Forest Road - Review signposted and non-signposted speed restrictions along the road network and where necessary, provide additional signposting of speed limitations - Consult with schools and school bus services to determine and mitigate if any school bus service use roads within the study area - Install appropriate traffic control and warning signs for areas identified to have existing potential safety risks - Consult with the NSW Police Service to mitigate impacts of heavy (multi-dimensional) vehicles on the roads - Project induction training for truck and vehicle operators - Manage queuing and prevent long queues at site entrance - Actively monitor area and have in place traffic control - Delay trucks when required - Manage dispatch timing for vehicles from SITA controlled facilities - Require SITA owned waste delivery vehicles to travel on arterial or sub-arterial roads rather than local roads (with the exception of Little Forest Road). - Discourage customer transfer trailers and B doubles from travelling on local roads
Noise	LHRRP - Limit waste receipt hours - Select plant and equipment to minimise noise emissions where possible whilst maintaining efficiency of function. Fit residential

Potential issue	Mitigation and management measures
	grade silencers and maintain all noise control equipment in good order • Maintain all machinery and equipment in proper working order in accordance with manufacturer's requirements • Do not operate heavy machinery outside site operating hours • Include noise component in site inductions GO facility • Select plant and equipment to minimise noise emissions where possible whilst maintaining efficiency of function. Fit residential grade silencers and maintain all noise control equipment in good order • Restrict operations to designated areas • Restrict noisy activities to daylight hours • Use reverse quackers with a low decibel output rather than beepers for excavators and wheel loaders • Utilise favourable routes for accessing and exiting the facility to ensure avoidance of residential areas where possible ARRT facility • Conduct all operations within buildings • Use reverse quackers rather than alarms with a low decibel output for excavators and wheel loaders • Utilise favourable routes for accessing and exiting the facility to ensure avoidance of residential areas where possible • Fit noise reduction measures within the buildings
Visual	• Grass the final capping layer as the reprofiling works occur to further minimise visual impacts • Ensure filling does not exceed proposed final landform heights • Maintain fences and other site infrastructure • Maintain Little Forest Road • Provide screen and screen maintenance • Progressively rehabilitation and revegetation.
Odour	Landfill reprofiling • Strip back the areas of the existing landfill (south of existing active landfill area) in segments with approximately 1 ha of cover stripped in advance of the active tipping area. Of this area ensure that approximately 2,500 m² would be less than one day old to minimise the emission of odours from the stripped surface. – Strip back the existing areas which are capped and revegetated and do not expose previously landfilled waste – Strip back the existing areas of intermediate cover (south of the existing active landfilling area) and do not expose previously landfilled waste • Each morning further strip back the equivalent to a day's waste disposal operations (to minimise the potential for the perching of leachate) and place waste directly over this area. Ensure that there is no exposed waste during the night when the potential for odour issues off site is higher LHRRP • Cover odorous wastes as soon as possible after delivery in accordance with the requirements of the site's environment protection licence • Minimise the size of the active landfill face, taking into account the practicalities, safety, access, traffic management, etc. • Inspect and monitor the capping layer regularly • Train staff (internal and contractors) on odour management strategy and all relevant procedures

Potential issue	Mitigation and management measures
	• Install and operate a landfill gas collection system progressively to minimise odour as a result of landfill gas seepage GO facility • Conduct random monitoring and inspections of incoming vehicles to determine waste composition • Order manures in accordance with production schedules and blend with compost only in favourable weather conditions at any given time • Train staff (internal and contractors) on odour management strategy and all relevant procedures • Only allow up to 40,000 tonnes of composting material to be stored on site (includes receipt, shredding, active composting and maturation stage) at any one time at the western GO • Measure oxygen and moisture content of compost (active phases) and control with aeration and moisture addition ARRT facility • Process waste daily • Carry out composting at set periods of time, to set temperatures, oxygen levels and moisture levels to provide certainty that composted material has fermented properly and has stabilized • Maintain the facility under negative pressure, ensuring odours do not escape the building • Regularly inspect biofilters and maintenance of biofilter media • Train staff (internal and contractors) on odour management strategy and all relevant procedures
Dust	LHRRP • Do not undertake dust generating activities during adverse weather conditions • Cease operations if unsafe (for example, during strong winds) • Monitor monthly dust deposition at six boundary locations on site • Limit vehicles to specified routes around the site and ensure speed limits are adhered to • Use dust suppression techniques such as watering to maintain moist conditions on exposed areas and unsealed roadways GO facility • Cover or enclose vehicles during transport around the site • Spray windrows, final compost storage areas and loading areas, particularly prior to transportation and turning • Cease operations if unsafe (for example, during strong winds) • Operate water cart(s) on trafficable areas as required ARRT facility • Conduct all operating activities within the enclosed areas of the ARRT facility • Cover or enclose vehicles during transport around the site • Spray windrows, final compost storage areas and loading areas, particularly prior to transportation and turning • Operate water cart(s) on trafficable areas as required

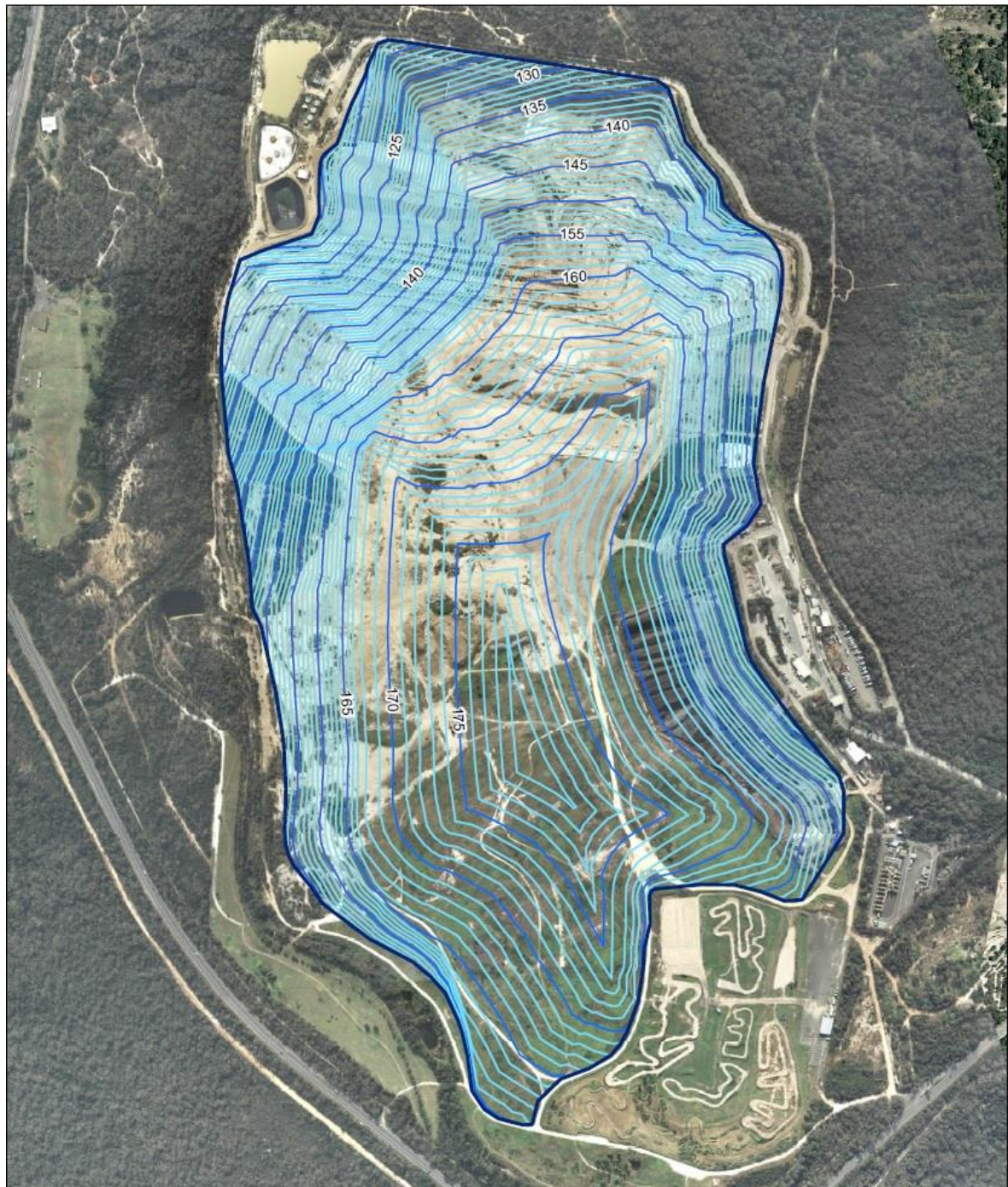
Potential issue	Mitigation and management measures
Soils and surface water	• Continue to use of existing measures in place to minimise demand for potable water including reuse of water captures in site basins for dust suppression • Where possible, minimise exposed areas over which sediment would be generated through maintenance of both natural and artificial ground cover such as grass or erosion control cover products • Discharge disturbed area drainage lines into a sediment basin designed in accordance with 'the Blue Book' Volume 1 (Landcom, 2005) and Volume 2b (DECC, 2008) • Divert clean upstream runoff around the actively worked areas of the proposal site to avoid mixing clean stormwater with runoff from disturbed areas • Manage vehicle movements to minimise generation and transport of sediment • Appropriately manage material stockpiles including locating them as far as possible from drainage lines • Continue general flood management practices including keeping drainage lines free of waste and debris and monitoring drainage lines during periods of heavy rainfall • Continue monitoring surface water quality in accordance with licences • Undertake further investigation of the habitat condition and macroinvertebrate populations to confirm the preliminary findings. It is recommended that this work be undertaken every three years commencing soon after reprofiling works commence in Area E. • Progressively revegetate completed reprofiling areas • Design and operate sediment dams and sediment traps to promote sedimentation • Maintain erosion and sediment control measures until the site is stabilised • Maintain drains to prevent weed build up
Groundwater	• Develop a monitoring system to assess the landfill collection system during re-profiling. This may include one or a combination of the following: – Ongoing assessment of the leachate generation volumes within the Stage 1 to 4 landfill areas during re-profiling – Ongoing assessment of the operation efficiency of the basal drainage system in Stage 1 to 4 of the landfill. This may represent some practical difficulties in given the drainage system is buried beneath waste – Characterisation and monitoring of leachate levels at the base of the landfill during re-profiling works to assess the potential for changes to leachate levels – Characterisation of changes in the hydraulic properties of the Stage 1 to 4 landfill areas during the re-profiling works – An improved collection system if water balance discrepancies are interpreted and/or overall changes in leachate levels and yields are observed and taking into account groundwater quality data. • Continue ongoing leachate management until such time as the leachate volume monitoring and or leachate and water quality monitoring suggest that risks are no longer significant • Confirm trigger levels for groundwater quality for monitoring wells around the LHRRP on which further investigations would be undertaken.

Potential issue	Mitigation and management measures
	• Include operational procedures and practices designed to minimise the production and spillage of impacted water and/or fluids used in operational activities in the OEMPs • Continue current groundwater monitoring activities and also monitor the six new wells in the ARRT and GO facility areas (refer Table 1 for details). If impacts occur during operation or post closure carry out further investigation and implement remedial measures which may include: – Additional investigations to isolate the source of impact and characterise the significance of the impact relative to key target criteria for the protection of surrounding sensitive systems. – Implementation of additional control measures to prevent ongoing impact. This may include: ○ Installation of additional monitoring wells to assess the emergence of significant impacts that may not be considered presently significant ○ Installation of additional wells to capture and treat impacted groundwater. This may include treating the water separately or incorporating the system into the existing leachate management system ○ It would be possible to use the Stage 5 groundwater drainage system located beneath the liner to intercept any impacted water
Leachate	• Continue ongoing monitoring of leachate volumes extracted from LHRRP landfill and other sources • Periodically review the leachate water balance model • Monitor groundwater and surface water impacts, as required by the proposal site EPL • Ongoing monitoring of surface water and leachate as required by EPL • Review of leachate levels daily • Inspect the site and review pumping/discharge records daily • Update standard operating procedures as site develops • Maintain relevant emergency procedures • Take action as leachate volumes and levels increase • Document corrective and preventative actions taken • Undertake regular inspections and repairs of infrastructure including removal of sludge from dams and maintenance of pumps and aerators • Compact and cover waste with daily and intermediate cover material to minimise infiltration of stormwater and further leachate generation • Remove leachate from a number of gas extraction wells using air lift pumps, flowing by gravity to the leachate collection dam • Maintain the leachate collection dam (holding capacity of 10 ML) to allow for the collection of leachate from the western ring main, central ring main, eastern ring main, Area 5-1 and Areas 5-2/5-3 • Maintain further emergency leachate containment dam (containment capacity of 9.2 ML) to contain leachate in extended wet weather events • Actively manage leachate levels in the containment dams so that they have sufficient capacity to cope with leachate arising from wet weather events
Hazards and risk	Dangerous Goods • Transport Dangerous Goods to site and store in accordance with the Australian Dangerous Goods Code

Potential issue	Mitigation and management measures
	- Implement appropriate safe work procedures for the safe handling of the Dangerous Goods, including spill prevention and clean up requirements - Store and use any smaller quantities of Dangerous Goods (aerosols, paints, cleaners etc.) that may be used on site in accordance with the Australian Dangerous Goods Code, including appropriate labelling, separation where necessary and disposal - Implement all safeguards identified in the hazard identification process through the development and implementation of a comprehensive safety management system for the operation of the proposal or via an update of the existing safety management procedures for the existing site, taking into account any new requirements specific to the proposal Emergency preparedness - Regularly review and update the ERP
Fire prevention and management	- Manage the areas adjoining Heathcote Road adjacent to buildings as a specific APZ. - Implement bushfire management procedures as outlined in the LHRRP OEMP, including: - Requirements for emergency access and egress including nomination of an alternative access route. - Establishing an alternative access and egress route to the north-east through the existing cleared and developed areas - Implementing formal preparedness procedures for staff and contractors to maintain awareness of and respond to escalating forecast fire danger - Regularly rehearse procedures for staff and contractors to respond to respond to a formal bushfire warning being issued by emergency services, including identification of escape routes and refuge areas - Inspect and maintained all fire protection systems in accordance with AS1851-2012 Routine Service of Fire Protection Systems and Equipment. - Maintain waste stockpiles (including any garden organics or paper based waste material) in a tidy manner prior to processing and make efforts to limit exposure to ignition sources - Undertake hot works in accordance with SITA's hot work procedure and permit system as per existing operations procedures to minimise the potential for flammable materials to be ignited - Regularly maintain all mechanical components associated with the raw material delivery, shredding and mixing processes would also be undertaken to prevent overheating - Manage fires in accordance with SITA's emergency response procedures. If the fire cannot be extinguished immediately, contact local emergency services to provide assistance
Biodiversity	Vegetation and weeds - Manage noxious weeds on an ongoing basis according to legislative requirements. - Continue suppression of dust within the landfill and ARRT and GO facilities. - Manage water quality Feral animals - Provide ongoing control of feral animals. - Minimise sources of food and habitat for pest species. Post closure – vegetation and weeds - Sow exposed soil with native seed immediately to prevent colonisation by weeds.

Potential issue	Mitigation and management measures
	• Use locally sourced native species. • Incorporate propagated individuals of <i>Allocasuarina diminuta</i> subsp. <i>mimica</i> from the site into the landscaping plan. • Manage noxious weeds according to legislative requirements. • Monitor and manage revegetation areas, including planted <i>Allocasuarina diminuta</i> subsp. <i>mimica</i>, as per the EMP.
Greenhouse gas	• Investigate opportunities to increase the methane capture rate on an ongoing basis, as the landfill gas system is progressively modified to accommodate the new final landfill profile during the entire operational life of the proposal. • Continue to work with the landfill gas management contractor to refine the gas extraction and oxidation system in identified major emissions contributing areas. • Consider implementation of greenhouse gas mitigation strategies such as implementation of energy efficient practices, installation of solar panels and use of biofuels • Install gas extraction wells in completed areas to control gas migration • Progressively install gas extraction wells in operational areas as the landfill develops • Prepare and regularly review the emergency plan and emergency procedures • Implement a program for scheduled monitoring of landfill gas (surface and subsurface)
Litter and illegal dumping	• Support Regional Illegal Dumping (RID) squads • Engage with stakeholders regarding illegal dumping • Undertake internal audits • Establish a Litter and Illegal Dumping fund

APPENDIX C
FINAL LANDFORM & REHABILITATION PLAN



LEGEND

- Post settlement 5m contours
- Post settlement 1m contours
- Proposed landfill footprint boundary

Figure 5: Final Landform Post Settlement



Figure 6: Masterplan - Rehabilitation
Lucas Heights Resource Recovery Park

APPENDIX D SCREEN PLANTING

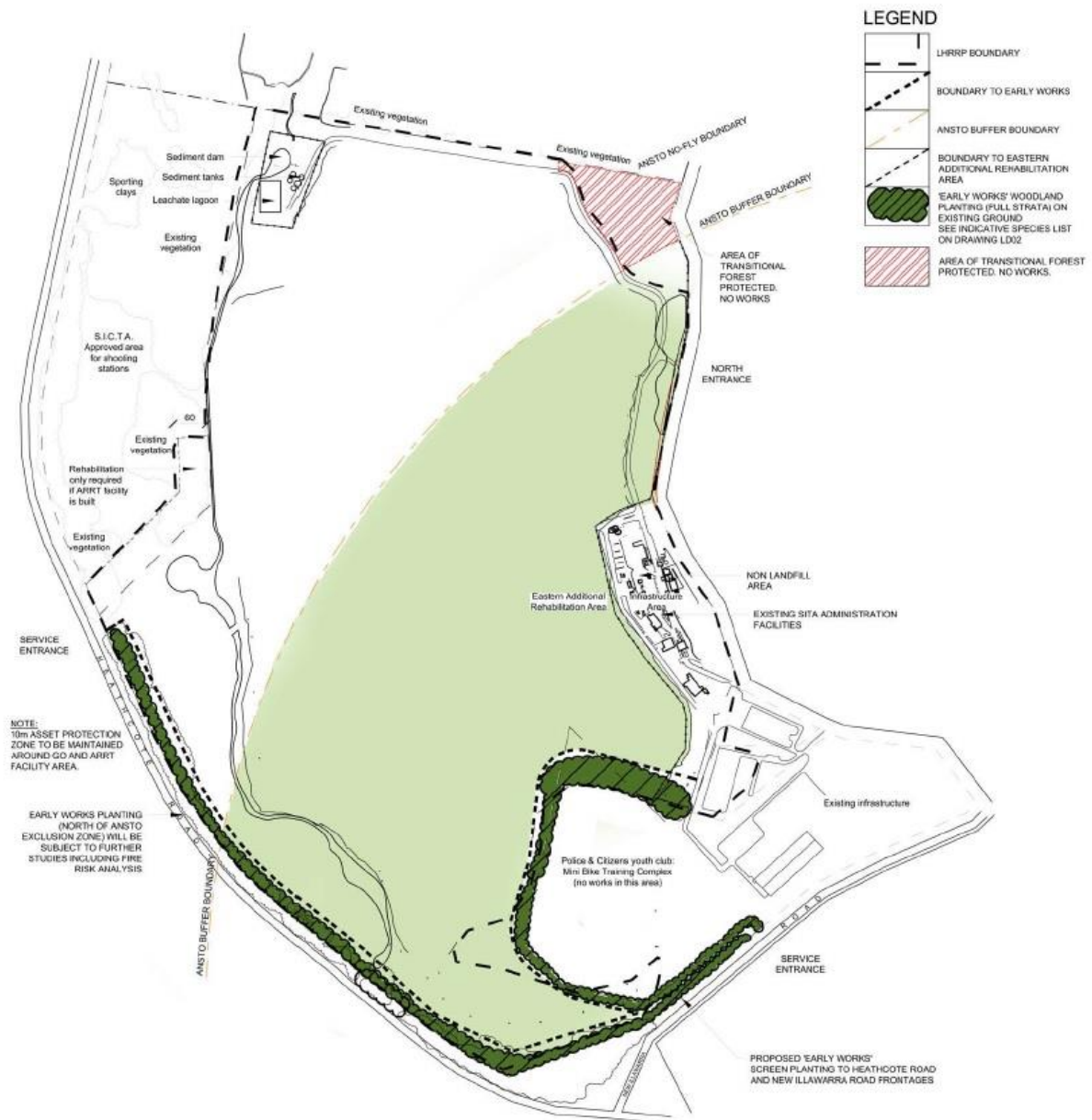


Figure 7: Screen Planting

APPENDIX E SENSITIVE RECEIVERS



Figure 8: Noise Receiver Locations (R1 – R8)