EQUATORIAL LAUNCH AUSTRALIA

ASC Waste Management Plan

ELA-000039

VERSION **0.2**

VERSION APPROVAL

	Name	Role	Date	Signed
Prepared	Deb Houlahan	Customer Campaign Manager	20/07/2023	
Reviewed	Matt Fraser	Regulatory and Compliance Manager	26/07/2023	
Endorsed				
Approved	Ben Tett	General Manager, Operations and Launch	27/07/2023	

APPROVAL HISTORY

CR No.	Title	Date
CR-000057	LFL Baseline Addition	

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1 PURPOSE

The purpose of the Waste Management Plan (WMP) is to facilitate a waste management strategy and associated practices for construction, deconstruction, demolition projects, launch and general operations occurring at the Arnhem Space Centre.

2 SCOPE

The WMP outlines measures to manage and mitigate waste generation and resource consumption during construction and operation of the ASC.

The plan considers the following:

1 Types of waste generated during operations,
2 Waste disposal management,
3 Measures that will be implemented to minimise waste generation,
4 Waste management associated with a contamination event.

3 REFERENCES

3.1 EXTERNAL REFERENCES

Serial	Title	Author	Date
A	Greenhouse Gas Emissions Offsets Policy and Technical Guidelines, Dept Environment Parks and Water Security	NT Government	2022
B	Listed Waste Company Summary, viewed at https://ntepa.nt.gov.au/listed-waste-company-summary	NT EPA Authority	2022
C	Northern Territory Contaminated Land Guideline viewed at ntepa.nt.gov.au_guideline_contaminated_land.pdf	NT EPA Authority	2017
D	Waste Management and Pollution Control (Administration) Regulation 1998 (NT)	NT Government	2022

3.2 ELA DOCUMENTS

Serial	DIN	Title	Version
E	ELA-000035	ASC Environmental Plan	Latest Version
F	ELA-000038	ASC Ground Hazard Safety Plan	
G	ELA-000125	ASC Waste Register	
H	ELA-000021	ELA Operations Manual	
I	ELA-000004	ELA Procurement Policy	
J	ELA-000087	ELA SDS Library	
K	ELA-000031	ELA Terminology and Definitions	
L	ELA-000030	ELA Work Instruction Library	

3.3 DEFINITIONS AND ACRONYMS

Definitions and acronyms applicable to this document may be listed in ELA-000031, ELA Terminology and Definitions (reference K).

4 WASTE MANAGEMENT

ELA manages all wastes as specified in Schedule 2 of the NT Waste Management and Pollution Control (Administration) Regulations 1998 (reference D) as prescribed wastes and disposes of these in accordance with the requirements of reference D. To minimise the amount of waste being managed, ELA adopts the following principles to underpin waste management at the ASC:

1 Avoid waste,
2 Improve resource recovery,
3 Increase use of recycled materials,
4 Better manage material flows to benefit the environment and business costs,
5 Improve information to support innovation in waste management at the ASC.

Waste management is the process ELA undertakes when treating wastes through recycling, reuse or landfill. ELA's waste management processes are designed to dispose of products and substances in a safe and efficient manner. Figure 1 depicts the waste management life cycle, within which ELA deploys strategic activities to minimise and manage waste through to end of life.

Figure 1: ASC Waste Management Activities

5 WASTE CATEGORIES

Waste materials, requiring management at the ASC, fall into four main categories, with each category being treated to minimise environmental impact, stored appropriately and when required disposed of with a registered waste service provider.

All waste generated, imported, collected and managed at the ASC is to ensure minimal degradation to the environment and ground water sources in accordance with ASC Environmental Plan (reference E).

5.1 RE-USE

Surplus materials able to be reused in their present form have the following treatment:

1 Surplus materials are stored and recorded for future reuse.
2 ELA encourages reuse as a waste management strategy to minimise cost and environmental impact.

5.2 RECYCLE

Surplus materials unable to be reused in their present form **but** able to be used in a different form:

1 ELA recycles immediately in accordance with Nhulunbuy Local Authority Waste Management requirements, or
2 ELA stores appropriately for future collection and transportation via contracted Waste Management service.

5.3 RESIDUAL WASTE

Residual waste can comprise:

1 Waste, which due to its category, class or material type, cannot be disposed of through normal re-use or recycle activities. Consequently, ELA:
   a. Explores ways of reusing some residual waste types, and
   b. Store, handle, transport and dispose of the waste from the ASC in accordance ELA Operations Manual (reference K).
2 Unused machinery, spare parts or discarded parts
   a. ELA assess these items and gauge importance for potential reuse.
   b. Once item is deemed to have little or no future use, the item is disposed of via a contracted Waste Management service.

Residual waste that can potentially be reused will be added to the re-use record and stored in an appropriate manner to ensure no further degradation to the condition of the item or material.

5.3.1 RESIDUAL WASTE MANAGEMENT

To ensure residual waste does not become a potential fire hazard, a haven for native fauna (snakes, spiders) or cause environmental impact (leachates), ELA manages all residual waste offsite, in a timely manner, via a Waste Management service and in accordance with specific instructions contained within work instructions and safety data sheets (references L and J respectively).

5.4 LANDFILL

If options 5.1, 5.2 or 5.3 cannot be satisfied, ELA manages this waste by:

1 Sending surplus materials to landfill and
2 Ensuring such waste is not disposed of in recreation areas or waterways.

6 WASTE COLLECTION AND DISPOSAL

Waste materials requiring disposal at the ASC fall into five main categories, with each category being treated to minimise environmental impact, stored appropriately until waste collection and disposal which will be undertaken with a NT nominated waste service provider, drawn from the NT Waste Company List (reference B).

6.1 CHEMICALS

Storage of waste chemicals such as oils will be held to a minimum at the ASC.

1 Drums and tanks containing waste oils or other chemicals are stored within a designated hazardous materials management area.
2 Adequate absorption, or other spill management materials, are available to collect and recover any spillage.
3 Spill management will be undertaken in accordance with onsite Safety Data Sheets (reference J) and NT EPA Guidelines (reference C)
4 All chemical waste will be disposed of by an approved waste contractor, or delegate, as proscribed in reference B.

6.2 Sanitary, Grey and Black Water

1. All sanitary products are contained within receptacles supplied by a contractor who is also responsible for the disposal of these wastes.
2. Grey and Black water generated onsite is managed by onsite wastewater management system.
3. Deluge water systems, are contained and will be monitored or managed until
    a. Water quality is suitable for re-use, or
    b. Treated on site, or
    c. Disposal is managed in an appropriate, approved manner.

6.3 Contaminated Hazardous Wastes

ELA staff and onsite contractors are notified immediately, in accordance with Hazard Management procedures (reference H), if hazardous materials or conditions are found onsite that are in **unprotected** environments, including:

a. Asbestos or materials containing asbestos,
b. Flammable or explosive liquids or gases,
c. Toxic or contaminated materials,
d. Radiation or radioactive materials,
e. Noxious or explosive chemicals,
f. Contaminated substances.

If contaminated wastes are evident ELA staff appropriately qualified in Hazardous Materials Handling must be utilised to assess and manage the waste in accordance with ELA Operations Manual (reference H).

Hazardous materials are stored, handled and transported in accordance with ASC Ground Hazard Safety Plan (reference F) and ELA Operations Manual (reference H). All hazardous waste is subject to:

1. Assessment of duration of continued waste storage and the appropriate disposal method must be undertaken before waste disposal and
2. Hazardous materials disposal is managed via specialist waste management contractor(s) per reference B.

6.4 eWaste

1. ELA ensures that all electronic componentry waste is recycled, where possible, through the Nhulunbuy Waste Transfer station recycling area, or via an accredited waste management facility.
2. No batteries or similar type components are discarded into general waste.
3. All mobile technology is recycled via appropriate collection points.

Recovered components from e-waste will be recycled including:

- Plastic
- Batteries
- Metals, such as aluminium, steel and copper
- Glass

6.5 Flight Hardware

ELA works with all clients to ensure flight hardware waste management remains the responsibility of the client, unless ELA is contracted to assist in disposal

Where a client does not want recovered flight hardware, then all efforts will be made to recycle first before being disposed of via specialist waste management contractors.

7 WASTE MINIMISATION

ELA aims to implement all practical waste minimisation processes to reduce the amount of waste to be removed from the ASC. Management, staff, design teams, contractors and suppliers are all encouraged through induction to look at ways to minimise the amount of waste generated at the ASC.

ELA, where possible, follows industry best practice guidelines including:

1. Ensuring through design and procurement, waste materials are reduced, reused and recycled where possible.
2. Sewage is contained onsite within sewage treatment system and does not leach into the ground water system.
3. Residual waste unable to be reused or recycled is disposed of at an approved waste management facility.
4. Provision of appropriate receptacles for separating recyclable items from general waste and management of recycling into local community projects or through a registered recycling provider.
5. Gas tanks used in the provision of residential hot water supply is refilled for reuse and recycled at end of life.
6. General food and domestic (camp accommodation) waste is transported to the local waste management transfer station for recycling into green waste management initiatives where possible.
7. Construction waste (concrete products) is reused onsite during landscaping or retaining activities.
8. Construction waste (steel formwork / wood etc) is recycled as part of the construction activities and moved offsite by a waste management contractor.

8 TRAINING

Site induction, where applicable, includes advice on appropriate separation, handling, recycling or reuse required when conducting operations onsite, and then provides all site occupants with appropriate recycling stations provided throughout the site.

9 PROCUREMENT

Per the ELA Procurement Policy (reference I), sustainable procurement practices include:

1. Strategies to reduce demand and extend the life of the product,
2. Planning product end of life, through
    a. Re-use,
    b. Recycling or
    c. Disposal, to encourage potential suppliers to address this at the beginning of supply chain,
3. Considering costs over the life of the good or service and policies in the planning process (such as potential increases in energy prices),
4. Encouraging sustainable solutions and innovation in tenders.

10 MONITORING WASTE

ELA is committed to minimising the risks associated with the generation of waste in the operation of the ASC. Associated risks being monitored are in accordance with the ASC Environmental Plan (reference E) including:

a. Human health
b. Ground water management
c. Wildlife habitat management,
d. Noise management,

e. Air quality management, and
f. Hazardous materials management

Monitoring of the risks associated with storage and management of waste is undertaken through the following activities:

1 Quantity and types of wastes being generated by the ASC operations are recorded in the ASC Waste Register (reference G).
2 Frequent monitoring of waste storage containers to ensure that they are maintained in a condition appropriate for their use and containment of the specific waste.
3 Waste containers and receptacles (skips and/or bins) are monitored to prevent cross-contamination.
4 Reviews of the types of surplus materials are undertaken to identify possible changes to site design or use to minimise landfill.
5 Recycling and reuse are preferred before landfill is considered.