

Environmental Approval

PURSUANT TO SECTION 69 OF THE ENVIRONMENT PROTECTION ACT 2019

Approval number	EP2023/031-001
Approval holder	EQUATORIAL LAUNCH AUSTRALIA PTY LTD
Australian business number (ABN)	11 605 364 234
Registered business address	Level 10 99 Queen Street Melbourne VIC 3000
Action	Phase 2 Expansion of the Arnhem Space Centre

Action overview

Expansion of launch pads and associated facilities at the multi-user commercial Arnhem Space Centre located on NT Portion 1646 in the East Arnhem local government area, within the area of interest granted to the Gumatj Corporation Ltd under section 19 of the *Aboriginal Land Rights (Northern Territory) Act 1976*, and sub-let to the approval holder. Operation of the expanded area includes up to 60 launches per year. The action includes:

- clearing approximately 120 ha of intact native vegetation and 26 ha of regrowth
- an additional 14 launch pads and supporting infrastructure:
 - mission support buildings
 - fuel storage and pumping facilities
- 100 megalitre capacity water dam
- helipad
- accommodation facility
- emergency egress roads.

No wastewater release or disposal is proposed.

No groundwater extraction is proposed.

The action includes conducting activities to recover any returning waste materials and space debris from launched rockets from within NT land and coastal waters to the maximum extent reasonably practicable.

The action is projected to operate for 40 years in line with the duration of the lease, and any extension, granted under section 19 of the *Aboriginal Land Rights (Northern Territory) Act 1976*. Decommissioning and rehabilitation is part of the action and will be undertaken prior to the expiration of the lease.

The action is described further in the **Supplementary Environmental Report (SER)** (comprising the Referral, main **SER** document and appendices and additional information dated 27 September 2024). The action includes implementation of the environmental management measures, commitments and safeguards documented in the SER. If there is an inconsistency between the SER and this environmental approval, the requirements of this environmental approval prevail.

Advisory notes

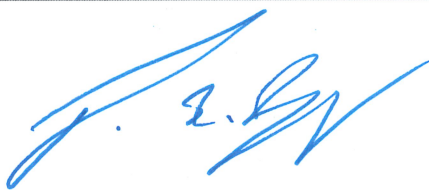
- i. All statutory authorisations as required by law must be obtained and maintained as required for the action. No condition of this environmental approval removes any obligation to obtain, renew or comply with such statutory authorisations.
- ii. Requirements to meet the conditions of this approval are to be conducted by appropriately trained, experienced and qualified personnel.
- iii. Notification of environmental incidents must be made to the **CEO** in writing and within 24 hours of becoming aware of the incident, in accordance with Part 9 Division 8 of the **EP Act 2019** and Part 10 of the Environment Protection Regulations 2020. Notification to pollution@nt.gov.au is considered notification to the **CEO**.
- iv. Submission of all notices, reports, documents or other correspondence required as a condition of this approval, including notification to the **CEO** or **Minister**, must be provided in electronic form by emailing environmentalregulation@nt.gov.au . All documents should be in electronic form suitable for on-line publication.

Primary address of action	Arnhem Space Centre launch site – NT Portion 1646, Dhupuma Plateau, intersection of Central Arnhem Road, Dhupuma Road and Bawaka Road.
---------------------------	---

NT EPA Assessment Report number	108
---------------------------------	-----

Person authorised to make decision	Hon Joshua Burgoyne MLA Minister for Lands, Planning and Environment
------------------------------------	---

Signature



Date of decision	1-12-2024.
------------------	------------

Recommended environmental approval conditions

1 Limitations and extent

- 1-1 All Arnhem Space Centre (ASC) facility activities and launches must be carried out within the approved extent (Figure 1).
- 1-2 Activities at the ASC must not exceed the limitations in Table 1.

Table 1 Limitations and extents

Action element	Map	Limitation or maximum extent
Arnhem Space Centre (ASC)	Figure 1	<ul style="list-style-type: none"> No more than 120 ha of intact native vegetation to be cleared No more than 26 ha of regrown native vegetation to be cleared No monsoon vine thicket vegetation to be cleared

Arnhem Space Centre activities

2 Air quality objectives

- 2-1 The approval holder must ensure the action achieves the following environmental objective:
- (1) Protect air quality and minimise emissions and their impacts on **sensitive and significant vegetation**, sacred sites, archaeological sites and nearby offsite human receptors so that these values are maintained.
- 2-2 To support achievement of the environmental objective stated in condition 2-1, the approval holder must:
- (1) Take all reasonably practicable measures during the construction, operation, remediation and closure of the action to avoid and mitigate impacts attributable to the action on air quality beyond the **approved extent**.

3 Meteorological and air quality monitoring

- 3-1 To support achievement of the environmental objective stated in condition 2-1, the approval holder must:
- (1) prior to commencing the first launch, obtain 12 months continuous ambient air quality monitoring data and results for carbon monoxide (CO), nitrogen dioxide (NO₂), hydrogen chloride (HCl), sulfur dioxide (SO₂), PM_{2.5}, and PM₁₀ from an appropriately located air quality monitoring station;
- (2) prior to commencing the first launch, obtain 12 months of meteorological condition information in proximity to the **approved extent**;
- (3) collect the meteorological condition information required by condition 3-1(2) over the same period as the ambient air quality monitoring required by condition 3-1(1);

- (4) submit an ambient air quality report to the **Minister** within 12 weeks of completing the monitoring required by condition **3-1(1)** and **3-1(2)**. The air quality report must at a minimum include:
 - (a) the information obtained as a requirement of condition **3-1(1)**;
 - (b) the information obtained as a requirement of condition **3-1(2)**; and
 - (c) evidence that monitoring was undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (as amended).
- (5) monitor pollutant concentrations at the **Gulkula Ceremonial Site** including carbon monoxide (CO), nitrogen dioxide (NO₂), hydrogen chloride (HCl), sulfur dioxide (SO₂), PM_{2.5}, and PM₁₀. The monitoring must:
 - (a) commence at least 24 hours before each rocket launch, continue for 24 hours the day of each rocket launch and end 24 hours after each rocket launch, for the **life of the action**; and
 - (b) be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (as amended).
- (6) pollutant concentrations from direct, indirect and cumulative impacts of the action must not exceed the air quality standards required by condition **5** at the **Gulkula Ceremonial Site**.

4 Air quality modelling

- 4-1 Five years after the commencement of the first launch or within 12 weeks of completing the tenth launch (whichever is first) the approval holder must update the pollutant dispersion model using the ambient meteorological and air quality data as required by condition **3-1(1)** and **3-1(2)**.
- 4-2 The updated pollutant dispersion model required by condition **4-1** must include modelling of carbon monoxide (CO), nitrogen dioxide (NO₂), hydrogen chloride (HCl), PM_{2.5}, and PM₁₀, sulfur dioxide (SO₂) concentrations, and be assessed against the air quality standard values stipulated in condition **5**.
- 4-3 The pollutant dispersion model required by condition **4-1** must be undertaken:
 - (1) in accordance with the Approved Method for the Modelling and Assessment of Air Pollutants in NSW (as amended); and
 - (2) in a manner that determines whether the standards in condition **5** are achievable.

5 Air quality standards

- 5-1 Air quality monitored concentrations at the **Gulkula Ceremonial Site** required by condition **3-1(5)** must not exceed:
 - (1) the standards for pollutants stated in schedule 2 of the National Environment Protection (Ambient Air Quality) Measure for:
 - (a) 24-hour and 1 year ground level concentrations for PM₁₀;
 - (b) 1-hour and 1 year ground level concentrations for NO₂;

- (c) 24-hour and 1 year ground level concentrations for PM_{2.5}; and
 - (d) 1-hour and 24-hour ground level concentration for SO₂.
- (2) the impact assessment criteria provided in the Approved Method for the Modelling and Assessment of Air Pollutants in NSW published by the NSW Environment Protection Authority (September 2022) for:
- (a) 1-hour ground level concentration for HCl; and
 - (b) 1-hour and 8-hour ground level concentration for CO.
- (3) the air pollution assessment criteria provided in the Guideline for Assessing and Minimising Air Pollution in Victoria published by the Victorian Environment Protection Authority (February 2022) or the latest version for:
- (a) 1 year ground level concentration for HCl (to be applied as the 24-hour averaging period).

6 Terrestrial ecosystems objective

6-1 The approval holder must ensure the action achieves the following environmental objectives:

- (1) Protect monsoon vine thicket to maintain environmental values including biodiversity, ecological integrity and ecological functioning.

7 Vegetation management and monitoring plan

7-1 To support achievement of the environmental objective required by condition 6-1, the approval holder must, prior to **substantial implementation**, develop a vegetation monitoring and management plan (VMMP) for the **ASC**. The **VMMP** must be informed by:

- (1) survey by a **qualified ecologist** to identify monsoon vine thicket in and within 250 m of the **approved extent**; and
- (2) survey by a **qualified ecologist** to provide a baseline condition assessment of monsoon vine thicket within 250 m of the **approved extent**.

7-2 The **VMMP** required by condition 7-1 must:

- (1) identify the areas surveyed and include the methodology and results (including field verified maps and shp files) of the vegetation surveys required by conditions 7-1(1) and 7-1(2);
- (2) identify the location and extent of monsoon vine thicket in and within 250 m of the **approved extent** based on the vegetation surveys required by conditions 7-1(1) and 7-1(2);
- (3) identify a buffer that forms the **no-go areas** for vegetation clearing;
- (4) detail measures and procedures to protect monsoon vine thicket including:
 - (a) marking of **no-go areas** on the ground for the duration of the action;
 - (b) erosion and sediment controls to avoid indirect impacts to monsoon vine thicket and buffers; and

- (c) any other measures, including remedial actions, to prevent impacts to monsoon vine thicket from edge effects.
 - (5) set out a detailed monsoon vine thicket monitoring program to:
 - (a) detect any negative change in the condition of the monsoon vine thicket relative to the baseline identified by the survey required by condition 7-1(2); and
 - (b) identify triggers for the remedial actions required by condition 7-2(4)(c).
 - (6) be revised in accordance with the requirements of condition 12.
- 7-3 The VMMP required by condition 7-1 must be submitted to the **Minister** no later than one month prior to commencement of **substantial implementation**.
- 8 Decommissioning and rehabilitation plan**
- 8-1 The approval holder must ensure the action achieves the following environmental objectives:
- (1) Protect the quality of land, soil and water such that the environmental values of the terrestrial environment are maintained.
- 8-2 To support achievement of the environmental objective required by condition 8-1, the approval holder must develop and implement a decommissioning and rehabilitation plan (**DRP**) for the **ASC**.
- 8-3 The **DRP** required by condition 8-2 must:
- (1) define closure objectives and criteria which have been developed in consultation with Traditional Owners, the leaseholder and relevant government agencies.
 - (2) include provisions for unplanned and planned decommissioning and **dormancy** of operation;
 - (3) describe the methodology (including any applicable standards, such as the National Environment Protection (Assessment of Site Contamination) Measure (2013) or latest version) and staging for dismantling and removal of infrastructure, rehabilitation and remediation of the **ASC**;
 - (4) include the approach for post-decommissioning monitoring and additional identified remediation actions;
 - (5) be reviewed by an **independent qualified person** to ensure it achieves the requirements of conditions 8-3(1) - 8-3(4); and
 - (6) be submitted to the **Minister** with the comments from the independent reviewer required by condition 8-3(5) and a statement from the approval holder addressing how the reviewer's findings have been addressed, within 12 months of **substantial implementation**.
- 8-4 The approval holder must notify the **Minister** in writing within two weeks of the proposed decommissioning or **dormancy** of activities, unplanned or otherwise.
- 8-5 Any revisions made to the information in the **DRP** that addresses the requirements of conditions 8-3(1), 8-3(2), 8-3(3) and 8-3(4) must:
- (1) be reviewed by an **independent qualified person** to ensure the revisions meet the requirements of conditions 8-3(1) - 8-3(4); and

- (2) be submitted to the **Minister** within two months after submitting a notice under condition **8-4**, with comments of the independent reviewer required by condition **8-5(1)** and a statement from the approval holder addressing how the reviewer's findings have been addressed.
- 8-6 The approval holder must decommission any part of the project infrastructure that will not, or will no longer, be required for use as soon as reasonably practicable after completion of its use.
- 9 Culture and heritage**
- 9-1 The approval holder must ensure the action achieves the following environmental objectives:
- (1) Protect Aboriginal sacred sites.
 - (2) Protect Aboriginal cultural values.
 - (3) Protect heritage values.
- 9-2 To support the achievement of the environmental objectives required by condition **9-1** the approval holder must complete an archaeological survey:
- (1) in accordance with a scope of works developed in consultation with and to the satisfaction of the **CEO**; and,
 - (2) prior to any ground disturbance within the archaeological survey area.
- 9-3 Two weeks prior to ground disturbance within the archaeological survey area, the approval holder must provide the **CEO** with an archaeological survey report. The archaeological survey report must include:
- (1) the results of the survey;
 - (2) the areas surveyed (including field verified maps and shp files);
 - (3) procedures to mitigate impacts to unexpected heritage objects, including an unexpected finds protocol.
- 9-4 Should the archaeological survey required by condition **9-2** identify the presence of **heritage values**, the approval holder must develop and implement a cultural heritage management plan (**CHMP**) at the **ASC** for the **life of the action**.
- 9-5 The **CHMP** required by condition **9-4** must:
- (1) be developed in consultation with, and to the satisfaction of the **CEO**;
 - (2) include a register of cultural and heritage values;
 - (3) identify the actions that will be implemented to avoid or minimise impacts to known **heritage values**;
 - (4) be submitted to the **Minister** no later than one month prior to commencement of **substantial implementation**.

Down range activities

10 Flight planning and down range landing and hardware recovery

- 10-1 The approval holder must to the extent reasonably practicable ensure that actions within the **down range landing and hardware recovery site** achieves the following environmental objectives:
- (1) Protect terrestrial habitats to maintain environmental values.
 - (2) Protect **listed threatened species** and their habitats.
 - (3) Protect vegetation quality.
 - (4) Protect the quality of land, soils and waters.
 - (5) Protect Aboriginal sacred sites.
 - (6) Protect Aboriginal cultural values.
 - (7) Protect heritage values.
- 10-2 To support achievement of the environmental objectives required by condition **10-1**, the approval holder must develop and implement a launch planning procedure to ensure that the **down range landing and hardware recovery site** for each launch avoids impacting, to the extent reasonably practicable:
- (1) sensitive environmental values (which includes cultural values); and
 - (2) any other areas identified, through consultation, in line with the **down range landing and hardware recovery site** requirements of the stakeholder engagement plan (**SEP**) required by condition **11-2** with relevant down range stakeholders, as holding local or regional significance.
- 10-3 The procedure identified in condition **10-2** must be prepared by a suitably qualified person and submitted to the **Minister** three months before the first launch.
- 10-4 The procedure must be implemented for each launch and include:
- (1) desktop methods to identify sensitive environmental values and areas holding local or regional significance; and
 - (2) methods for how impacts to sensitive environmental values and areas holding local or regional significance will be avoided, mitigated or managed in line with the environmental decision-making hierarchy.
- 10-5 On the 12 month anniversary of first launch, and each 12 months after, the approval holder must prepare and submit a report to the **Minister**. The report must:
- (1) specify the number of launches undertaken in the previous 12 months;
 - (2) specify how compliance with condition **10-2** has been achieved;
 - (3) evaluate the performance of the avoidance, mitigation and management actions required by condition **10-4(2)**; and
 - (4) identify any remediation actions undertaken.

General conditions

11 Stakeholder engagement plan

- 11-1 The approval holder must to the extent reasonably practicable ensure the action achieves the following environmental objective:
- (1) Protect the health and welfare of current and future generations of Territorians.
- 11-2 To support the achievement of the environmental objective required by condition **11-1**, the approval holder must develop a **SEP** for the management of the action at the **ASC** and the **down range landing and hardware recovery site**.
- 11-3 The **SEP** required by condition **11-2** must:
- (1) be developed in accordance with the International Association for Public Participation's Quality Assurance Standard for Community and Stakeholder Engagement¹ or the latest version; identify all affected stakeholders including but not limited to:
 - (a) Traditional Owners;
 - (b) Aboriginal corporations;
 - (c) land councils;
 - (d) users of the **Gulkula ceremonial site**;
 - (e) other people or organisations determined to be Aboriginal stakeholders;
 - (f) services such as medical and logistical services to the region; and
 - (g) other businesses that may be affected during peak visitor periods to the region.
 - (2) demonstrate that affected stakeholders have been consulted on:
 - (a) potential social and economic impacts from the action; and
 - (b) broader potential positive and negative impacts of the action, including details of the process used to identify these impacts.
 - (3) require that stakeholders identified within the **down range landing and hardware recovery site**, including but not limited to, Traditional Owners, leaseholders, land councils and the Aboriginal Areas Protection Authority are informed and consulted with during the launch planning process prior to each launch;
 - (4) be reviewed by an **independent qualified person** to ensure that the SEP meets the requirements of **11-3(1)**, **11-3(2)** and **11-3(3)**; and
 - (5) be submitted to the **Minister** with the comments from the independent reviewer required by condition **11-3(4)** and a statement from the approval holder addressing how the reviewer's findings have been addressed, at least one month prior to the first launch.

¹ International Association for Public Participation (IAP2) (2015). Quality Assurance Standard for Community and Stakeholder Engagement.

- 11-4 The environmental performance report (**EPR**) required by condition **13-1** must include a summary of significant issues raised by the community and stakeholders during the consultation process and how they were resolved.

12 Revision of plans

- 12-1 The approval holder may revise any management plan required by this approval and must provide the following to the **Minister** at least one month prior to any material amendment(s) being implemented:

- (1) the revised plan(s);
- (2) a tabulated summary of the amendment(s) with document references;
- (3) reasons for the amendment(s); and
- (4) an assessment of environmental risks and potential environmental impacts associated with the amendment(s).

- 12-2 The approval holder must implement the action to comply with the latest revision of management plans required by this approval.

13 Environmental performance reporting

- 13-1 The approval holder must prepare an **EPR** that reports on the environmental performance of the action and evaluates compliance with the conditions of this environmental approval.

- 13-2 The **EPR** required by condition **13-1** must:

- (1) be submitted to the **Minister** on the first anniversary of **substantial implementation** of any component of the action and every five years thereafter;
- (2) be endorsed by the approval holder or a person delegated to endorse on the approval holder's behalf;
- (3) be reviewed and endorsed by an **independent qualified person**;
- (4) include a statement as to the extent the approval holder has complied with each condition of this approval;
- (5) provide an interpretation of all monitoring data required by the conditions of this approval;
- (6) provide an analysis and interpretation of monitoring data to demonstrate whether compliance with the requirements of conditions has been achieved; and
- (7) identify all non-compliances and describe corrective and preventative actions taken to date and actions that will be taken.

- 13-3 The approval holder must maintain records demonstrating compliance with the conditions of this environmental approval for the **life of the action**.

14 Provision of environmental data

- 14-1 All environmental monitoring data required to be collected or obtained under this environmental approval must be retained by the approval holder for a period of not less than ten years commencing from the date that the data is collected or obtained.
- 14-2 The approval holder must, as and when directed by the **Minister**, provide any environmental data (including sampling design, sampling methodologies, empirical data and derived information products such as maps) or information relevant to the assessment of the action and implementation of this environmental approval, to the **Minister** in the form and manner and at the intervals specified in the direction.

15 Change of contact details

- 15-1 The approval holder must notify the **Minister** in writing of any change of its name, physical address or postal address for the serving of notices or other correspondence within ten business days of such change.

16 Commencement of action

- 16-1 This approval expires five years after the date on which it is granted, unless there is **substantial implementation** on or before that date.
- 16-2 The approval holder must provide notification in writing to the **Minister**, at least two months prior to **substantial implementation**.

17 Breach of condition

- 17-1 A breach of condition/s of this approval must be reported to the **Minister** within 24 hours of the approval holder becoming aware of the breach. The report to the **Minister** must be in electronic form by emailing environmentalregulation@nt.gov.au

Acronyms

Term	Definition
ASC	Arnhem Space Centre
CEO	Chief Executive Officer
CHMP	Cultural heritage management plan
DLPE	Department of Lands, Planning and Environment
DRP	Decommissioning and rehabilitation plan
EP Act	<i>Environment Protection Act 2019</i>
EPR	Environmental performance report
NT EPA	Northern Territory Environment Protection Authority
SEP	Stakeholder engagement plan
SER	Supplementary environment report
VMMP	Vegetation monitoring and management plan

Definitions

Some of the terms used in this approval have the same meaning as the terms defined in the *Environment Protection Act 2019* and *Environment Protection Regulations 2020*.

Term	Definition
approved extent	The extent includes the area of clearing required to accommodate the approved expansion to the Arnhem Space Centre (Figure 1) .
Arnhem Space Centre	The area defined in Figure 1 of this approval, and spatial data held by DLPE at record 33-D24-8109: ASC phase 2 approved extent .
Chief Executive Officer	Has the same meaning as in section 4 of the EP Act .
dormancy	in a state of long term rest or inactivity (greater than 5 years).
down range landing and hardware recovery site	has the same meaning as both a “drop zone” and “landing site” as per the Australian Space Agency Flight Safety Code , and the access to those sites. NB – both the “drop zone” and “landing site” are characterised as a three-standard deviation (three-sigma) area around the nominal impact point of debris or scheduled debris.
Gulkula ceremonial site	includes and collectively refers to the ceremonial site, the Garma Institute and Garma Cultural Knowledge Centre.
heritage values	Heritage places and heritage objects as defined under the <i>Heritage Act 2011</i> and includes Aboriginal or Macassan archaeological places and objects.
independent qualified person	A qualified person as defined under section 4 of the EP Act; and who also meets the following requirements: <ul style="list-style-type: none"> a) was not involved in the preparation of the approval holder’s referral, SER or additional information; and b) is independent of the personnel involved in the design and implementation of the action.
life of the action	The period of time from the substantial implementation of the action until the issue of a closure certificate under section 213 of the EP Act , or revocation of the environmental approval by the Minister at the request of the approval holder under section 114 of the EP Act .
listed threatened species	Species listed as critically endangered, endangered, or vulnerable under the <i>Territory Parks and Wildlife Conservation Act 1976</i> or the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
Minister	The Minister responsible for administering the EP Act .
no-go areas	Areas where vegetation clearing is prohibited in order to protect impacts to sensitive and significant vegetation .

Term	Definition
qualified ecologist	Person who has professional qualifications, training, skills and/or experience related to the potential impact using the relevant protocols, standards, and methods, and who has obtained written approval from the CEO , on the advice of the Executive Director of the NT DLPE Flora and Fauna Division to be the qualified ecologist.
sensitive and significant vegetation	Vegetation communities defined as sensitive and significant by the Northern Territory Planning Scheme Land Clearing Guidelines ² .
substantial implementation	The commencement of the action including ground disturbing activity, such as vegetation clearing or the construction of infrastructure to accommodate the approved expansion to the Arnhem Space Centre .

Location and extent of action

Spatial data is held by **DLPE** as follows:

- [record 33-D24-8109: ASC phase 2 approved extent](#)

² [Northern Territory planning scheme land clearing guidelines](#)

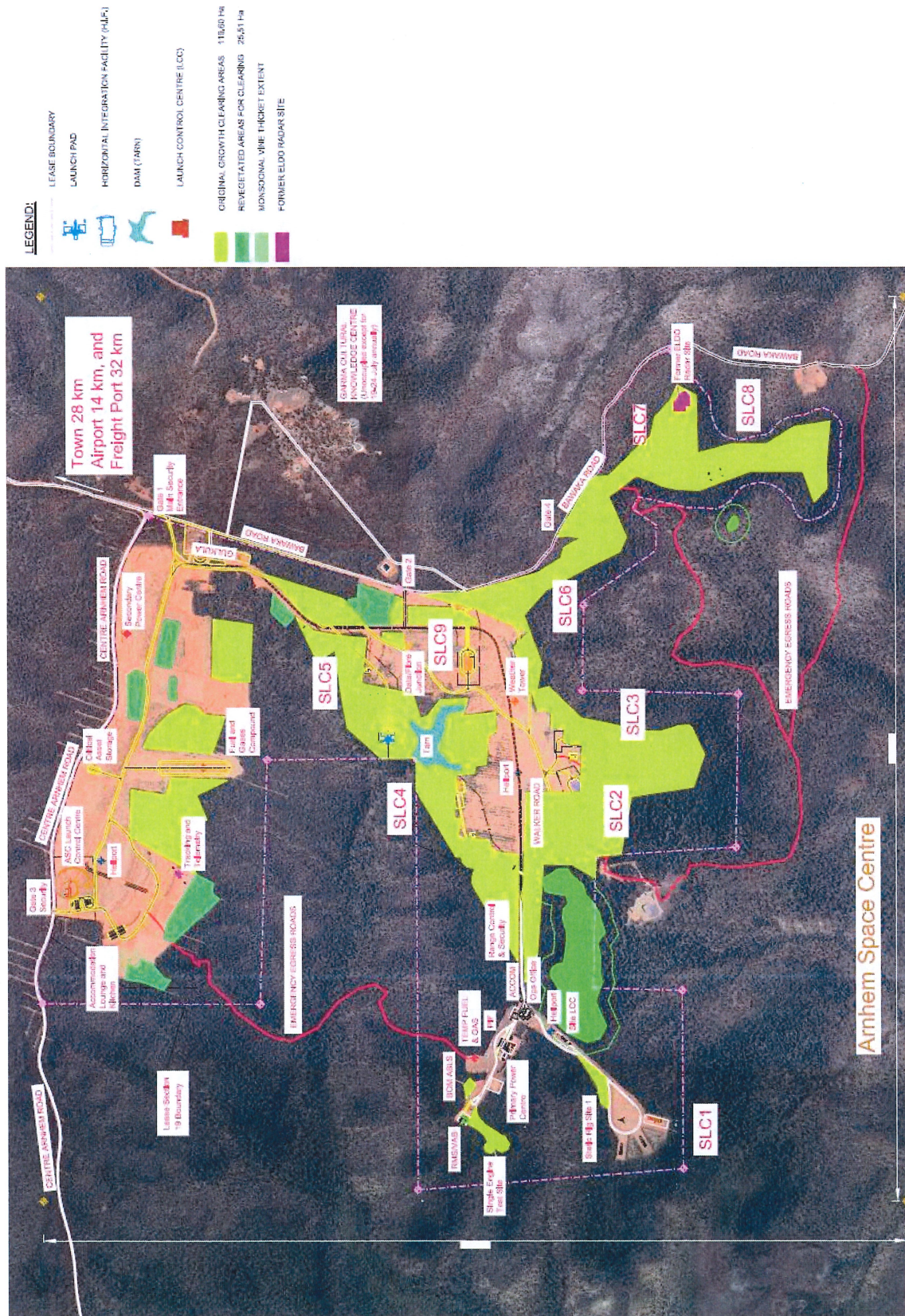


Figure 1: Arnhem Space Centre