

Silverton Wind Farm Works Environmental Management Strategy

Prepared for

GE-CATCON

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Ecology and Heritage Partners Pty Ltd

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1 INTRODUCTION

1.1 Background

This Silverton Wind Farm Works Environmental Management Strategy (WEMS) follows on from the Silverton Wind Farm Project – Overview Environmental Management Strategy (OEMS). The OEMS provides a project overview including details about the project approval, the delivery of works and the project partners. The OEMS also provides information about the Community Consultative Committee.

1.2 Scope

This WEMS provides the strategic framework for managing environmental aspects related to the engineering, procurement and construction for the Silverton Wind Farm Works. The works apply to 58 wind turbines and associated infrastructure which will be undertaken by a consortium consisting of GE and CATCON.



This WEMS applies only to the works phase of the wind farm which is expected to commence in May 2017 and be completed in July 2018. Initially, this WEMS did not cover Area 7 which includes the proposed wind turbines (T28 to T35), the underground and overhead electricity transmission lines and the internal roads in the Porcupine Grass Sparse Woodland. This portion of the works was put on hold with access to this locality (Area 7) restricted to ensure that the ground is not unnecessarily disturbed. Area 7 required a detailed site investigation prior to preparing the final design for the wind farm infrastructure to determine if the project approval requirement that that no more than 0.81 hectares of Porcupine Grass Sparse Woodland be cleared could be achieved, or if the Secretary of the Department of Planning and Environment (DPE) would need to agree otherwise.

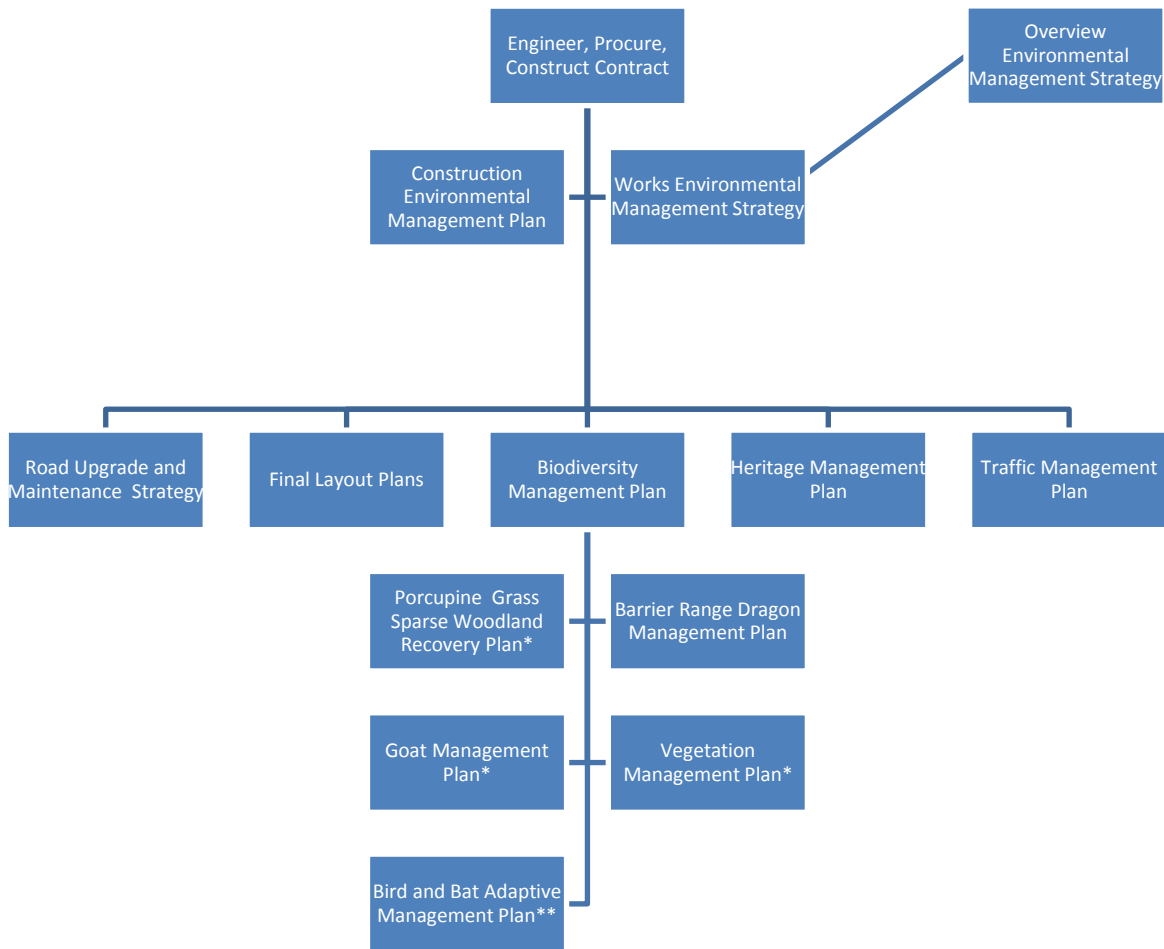
In November 2017, GE sought approval from the Secretary to commence construction in Area 7. In December 2017, a nominee for the Secretary confirmed that construction could commence in Area 7 and in doing so agreed that the total clearing area of Porcupine Grass Sparse Woodland was now to be increased to 6.81 hectares. The nominee for the Secretary noted that the works in Area 7 would be in accordance with the approved Biodiversity Management Plan and that there would be supervision by an ecologist from Biosis and full demarcation of the disturbance footprint.

1.3 Review

This WEMS will be updated to take account of any new strategic measures or actions adopted to improve the environmental performance of the Silverton Wind Farm Works that are a result of recommendations following on from an inspection, an audit, an incident investigation or a complaint.

2 STRATEGIC FRAMEWORK FOR THE WORKS

The process to engineer, procure and construct the Silverton Wind Farm will be guided by this WEMS and a Construction Environmental Management Plan and both will be implemented by GE-CATCON in conjunction with the CATCON Management System. This framework of documents is shown at Figure 1.



* These plans can be found in the Silverton Wind Farm Operations – Biodiversity Management Plan

** The Bird and Bat Adaptive Management Plan will be issued prior to the erection of any wind turbines

Figure 1: Framework of documents for the works

2.1 Porcupine Grass Sparse Woodland Recovery Plan

A recovery plan for the Porcupine Grass - Red Mallee - Gum Coolibah hummock grassland vegetation community was prepared in consultation with the Office of Environment and Heritage (OEH), the Department of Industry – Lands (DI Lands) and local leaseholders on site. A draft version of the recovery plan was submitted to the Secretary of the DPE in December 2017, prior to the construction of any wind turbines.

2.2 Goat Management Plan

A management plan for goats was prepared in consultation with OEH, DI Lands and local leaseholders on site. A draft version of the management plan was submitted to the Secretary of the DPE in December 2017, prior to the construction of any wind turbines.

2.3 Vegetation Management Plan

A management plan for vegetation will be prepared in consultation with OEH, DI Lands and local leaseholders on site. The management plan will be submitted to the Secretary of the DPE before the wind farm is operational.

2.4 Bird and Bat Adaptive Management Plan

An adaptive management plan for birds and bats was prepared in consultation with OEH and a final version was submitted to the Secretary of DPE in November 2017, prior to the construction of any wind turbines.

3 STATUTORY APPROVALS

3.1 Environmental Planning and Assessment Act 1979

On the 22 December 2016, the Planning Assessment Commission of NSW issued an approval under Section 75W of the *Environmental Planning and Assessment Act 1979* for Modification 3 (MOD 3) of the Silverton Wind Farm project, subject to conditions. Condition 1 of Schedule 4 requires that an Environmental Management Strategy be prepared prior to the commencement of construction. This WEMS is in response to this MOD 3 project approval condition.

3.2 Protection of the Environment Operations Act 1997

On the 11 January 2017, the NSW Environment Protection Authority (EPA) issued an Environmental Protection Licence (EPL) No. 20882 under Section 55 *Protection of the Environment Operations Act 1997* (POEO Act) for the Silverton Wind Farm located in the Barrier Ranges near the township of Silverton. All workers on the wind farm site are expected to comply with the EPL. The EPL authorises the carrying out of the construction of 58 wind turbines and associated infrastructure and imposes administrative, limit, operating, monitoring and recording, reporting and general conditions on the licensee.

4 RESPONSIBILITY AND ACCOUNTABILITY

All workers on the wind farm site have a responsibility to control pollution during the works and to report any incidents causing or threatening material environmental harm to the environment. This means that any site personnel can stop work to prevent and/or minimise any material harm to the environment. Responsibilities and accountabilities of key works personnel are outlined in Table 1.

Table 1: Responsibilities and accountabilities of key works personnel

Role	Responsibility	Authority	Accountability
Consortium Project Manager	Manages the engineering, procurement and construction works on the site.	Can stop all works to prevent and/or minimise any material harm to the environment.	Reports to the Consortium Executive
Site Construction Manager	Manages construction works on the site.	Can direct any works personnel to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment.	Reports to the Consortium Project Manager
QSE Manager	Provides environmental management assistance to the HSE Advisor (Construction).	Can advise any works personnel to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment.	Supports the Consortium Project Manager
HSE Advisor (Construction)	Monitors the environmental performance of construction works and provides on-site environmental advice to road, hardstand, foundation, building, transport and WTG erection project engineers and supervisors.	Can direct any CATCON personnel and sub-contractors to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment.	Reports to the Principal Contractor's Representative
HSE Manager (Electrical)	Monitors the environmental performance of electrical works and manages on-site environmental incidents and complaints associated with electrical works.	Can direct any CPP personnel and sub-contractors to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment.	Reports to the Electrical Site Manager
Environmental Consultant	Independently of the electrical, design, construction personnel and turbine supplier, monitors the environmental performance of the works and provides specialist on-site and off-site environmental management advice and support.	Can advise any works personnel to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment.	Reports to the Principal Contractor's Representative
Turbine Supplier EHS Manager	Monitors the environmental performance of the turbine supplier's installation and commissioning works and manages any turbine related environmental incidents and complaints.	Can direct any GE personnel and sub-contractors to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment.	Reports to the Turbine Supplier Site Manager
Ecologist (from Biosis)	Supervises the clearance of Porcupine Grass Sparse Woodland in Area 7	Can advise any works personnel to take reasonable and feasible measures to prevent and/or minimise the clearance of Porcupine Grass Sparse Woodland in Area 7	Reports to the Site Construction Manager

5 KEEPING THE LOCAL COMMUNITY INFORMED

GE-CATCON appreciates that the local community must be kept informed about the environmental performance of the project and that this will be achieved through several mechanisms, three of which are as follows:

- Community Consultative Committee (CCC)
- Project Website
- Public Register for the Environment Protection Licence (EPL)

GE-CATCON recognises that the community and stakeholder groups must be:

- Consulted on the management plans and proposed changes to the works; and
- Able to provide feedback on key issues that may arise during the works.

5.1 Community Consultative Committee

The Principal will operate a CCC to the satisfaction of the Secretary of the DPE, in accordance with the *Community Consultative Committee Guidelines for State Significant Projects (2016)* (or its latest version).

GE-CATCON will participate in the CCC meetings conducted by the Principal, during the period of the works and provide updates on the progress of the works. GE-CATCON understands that the committee will be provided with copies of:

- Management plans related to the works;
- Results of environmental monitoring during the works;
- Audit reports for the works; and
- Reports on any community concerns or complaints related to the works along with GE-CATCON's responses to such matters.

5.2 Project Website

GE-CATCON understands that this WEMS will be publicly available on the project website. GE-CATCON also understands that the project website will make other works related information publicly available such as the following:

- Final layout plans for the works;
- Statutory approvals for the works;
- Approved management plans for the works;
- Staging Plans for the works;

- A summary of the monitoring results of the works, which have been reported in accordance with the approved management plans;
- A register of works related complaints; and
- The annual Statement of Compliance with the EPL for the works.

5.3 Public Register for the Environment Protection Licence

GE-CATCON understands that the public register for EPLs, which is administered by the Environment Protection Authority (EPA), will contain a copy of the EPL for public inspection. This public register will include any mandatory audits required to be undertaken in relation to the EPL along with any pollution studies required by a condition of the EPL, any pollution reduction programs required by a condition of the EPL, and any penalty notices issued in relation to the works.

6 POLLUTION COMPLAINTS

Any works related pollution complaints will be directed to the following:

- 1300 677 423
- silvertonwf@catcon.com.au

Any pollution complaints will be handled by the Site Construction Manager and the following details will be recorded:

- Date and time of the complaint;
- Method by which the complaint was made
- Personal details of the complainant
- Nature of the complaint;
- Action taken in relation to the complaint, including any follow-up contact with the complainant

Any pollutions complaints will be kept by GE-CATCON for at least four years after the complaint is made and a complaints summary will be supplied to the EPA as part of an annual return for the EPL. In addition, pollution complaints will be recorded on a complaints register which will be published on the project website.

7 DISPUTES

GE-CATCON expects to be the first point of contact for community complaints. Contact details will be included on the project notice board and website. Community complaints will be lodged either in person or via the Silverton Wind Farm phone number (1300 677 423) or email (silvertonwf@catcon.com.au). GE-CATCON will notify the Principal of all complaints received and will assist the Principal to respond to any complaints or queries relating to the works. This may include taking reasonable and prompt measures to address complaints arising from the works, investigating such complaints and providing assistance to the Principal in preparing a formal response to the complainant.

If a dispute arises during the works whereby an agreement cannot be reached between the Principal and a complainant about a matter relating to the works, GE-CATCON understands that the Principal will refer the matter to DPE for resolution or advice.

8 NON-COMPLIANCE

8.1 Non-compliance with the project approval conditions

If there is non-compliance during the works which relates to an exceedance of criteria described in schedule 3 of the MOD 3 project approval, GE-CATCON will, at the earliest opportunity:

- Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- Consider all reasonable and feasible options for remediation (where relevant) and prepare a report for the DPE describing those options and any preferred remediation measures or other course of action; and
- Implement remediation measures, in consultation with relevant government agencies.

GE-CATCON recognises that exceedance of a criteria may constitute a breach of the project approval and may be subject to compliance action by the DPE.

8.2 Non-compliance with the Environment Protection Licence

If there is non-compliance during the works which relates to a condition of the EPL, CATCON will immediately notify the EPA and will also undertake immediate action to rectify the non-compliance. Any non-compliance with the EPL will be outlined in the Statement of Compliance which CATCON must complete and supply to the EPA as part of an Annual Return in respect of the reporting period for the works.

8.3 Non-compliance with a management plan

If there is non-compliance with a measure described in a management plan and that measure is not a project approval condition or a condition of the EPL, then GE-CATCON will initiate corrective action which will be recorded in an improvements register.

9 EMERGENCIES

GE-CATCON shall provide immediate notification to the Secretary of the DPE and other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment.

For details about response arrangements for environmental related emergencies during the works, refer to the following project documents:

- Silverton Wind Farm Works – Emergency Response Plan
- Silverton Wind Farm Works – Pollution Incident Response Management Plan

10 RELATED STRATEGIES AND PLANS

This WEMS should be read in conjunction with the following documents that are authorised under the conditions of the MOD 3 project approval and are applicable to the construction works:

- Final Layout Plans
- Biodiversity Management Plan
- Barrier Range Dragon Management Plan
- Heritage Management Plan
- Road Upgrade and Maintenance Strategy
- Traffic Management Plan

11 MONITORING AND REPORTING OBLIGATIONS

11.1 Monitoring and reporting summary

The extensive monitoring and reporting obligations under the MOD 3 project approval that will be carried out during the works are illustrated in Figure 2.

A summary of these obligations derived from schedules 2 and 3 of the MOD 3 project approval are provided in Table 2 and 3, respectively. Those personnel responsible for the reporting of these obligations to the DPE are listed in Table 1.

In relation to monitoring and reporting aspects associated with the EPL, a summary of obligations is provided in Table 4. CATCON (and its delegates) are responsible for reporting of these obligations to the Environmental Protection Agency (EPA) and the DPE.

For monitoring and reporting of obligations relevant to construction activities in Area 7, refer to Table 5.

11.2 Frequency of monitoring

Monitoring will be conducted at variable intervals as follows:

- There will be weekly inspections of the works conducted by the Health, Safety and Environment Advisor (CATCON);
- There will be monthly inspections of the works conducted by an environmental consultant; and
- There will be systematic audits of the works conducted by the Quality, Safety and Environment Manager (CATCON).

11.3 Frequency of reporting

Reporting will be both progressive and annual. GE-CATCON will submit weekly and monthly progress reports to the Principal. The weekly site progress reports will include a list of current environmental risks and issues. The monthly works progress reports will include a supplementary report describing actual or potential environmental incidents and actions from an incident investigation, audits and inspections. CATCON will also submit an Annual Return to the EPA in respect to the reporting period for the EPL. This Annual Return will comprise the following:

- A Statement of Compliance;
- A Monitoring and Complaints Summary;
- A Statement of Compliance - Licence Conditions;
- A Statement of Compliance - Load based Fee;
- A Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan;
- A Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
- A Statement of Compliance - Environmental Management Systems and Practices.



Figure 2: Illustrated plan showing monitoring during the works

Table 2: Summary of monitoring and reporting obligations - Schedule 2 of the MOD 3 project approval

Condition	Monitoring Requirements	Reporting Obligation
Condition 1	Monitor for any material harm to the environment	Report on any material harm to the environment
Condition 7	From the commencement of the erection of the wind turbines, monitor the height	Report if the wind turbine height measured from above ground level to the blade tip is greater than 180 metres
Condition 8 (a)	Monitor the positioning of the wind turbine	Report if wind turbine is moved more than 250 metres from the relevant GPS coordinates
Condition 8 (b)	Monitor the positioning of the wind turbine	Report if a wind turbine is moved closer to residence VL6 from the relevant GPS coordinates
Condition 8 (c)	Monitor wind turbines and ancillary infrastructure	Report if there are additional impacts to biodiversity values including high biodiversity value vegetation and threatened fauna
Condition 8 (d)	Monitor wind turbines and ancillary infrastructure	Report if there are additional impacts to heritage items
Condition 11 (a)	Monitor the construction of the wind turbines	Report if design does not accord with <i>IEC 61400-1 Wind turbines – Part 1: Design Requirements</i>
Condition 11 (b)	Monitor the construction of building and structures	Report if works do not accord with the <i>Building Code of Australia</i>
Condition 13	Monitor works near the Umberumberka Reservoir or Pipeline	Report if works damage the Umberumberka Reservoir or Pipeline
Condition 16	Monitor all plant and equipment used during the works	Report if plant and equipment is not maintained or operated properly

Table 3: Summary of monitoring and reporting obligations - Schedule 3 of the MOD 3 project approval

Condition	Monitoring Requirements	Reporting Obligation
Condition 3 (b)	Monitor the colour and finish of the wind turbines	Report if wind turbines are not painted off white/grey and have a low glare/reflection surface treatment
Condition 3 (c)	Monitor the visual appearance of ancillary infrastructure	Report if the ancillary infrastructure does not blends in with the surrounding landscape
Condition 3 (d)	Monitor the use of advertising signs and logos	Report if there are advertising signs or logos mounted on the wind turbines or ancillary infrastructure.
Condition 4 (b)	Monitor external lighting	Report if installed lighting does not comply with Australian Standards
Condition 6 (b)	Monitor construction noise	Report if construction noise is not managed
Condition 7	Monitor construction hours	Report if construction occurs outside of the approved hours and days
Condition 11	Monitor blasting times	Report if blasting occurs outside of the approved hours and days
Condition 12	Monitor blasting	Report if blasting exceeds approved criteria
Condition 14	Monitor available water supply	Report if insufficient water supply for works
Condition 15	Monitor waterways	Report if works pollute any waterways
Condition 16 (a)	Monitor soil erosion	Report soil erosion immediately
Condition 16 (b)	Monitor waterway crossing works	Report if waterways crossing works do not comply with relevant government guidelines
Condition 16 (c)	Monitor storage and handling of dangerous goods and hazardous materials	Report any non-bunded storage of dangerous goods and hazardous materials
Condition 16 (d)	Monitor for spills	Report spills
Condition 17 (a)	Monitor Porcupine Grass Sparse Woodland and Mulga/Red Mallee Shrubland and Chenopod – Red Mallee Woodland /Shrubland	Report if more than 6.81 hectares of Porcupine Grass Sparse Woodland is cleared ¹ and if more than 0.54 hectares of Mulga/Red Mallee Shrubland and Chenopod – Red Mallee Woodland /Shrubland is cleared
Condition 17 (b)	Monitor nests less than 200 metres from wind turbines	Report raptors observed nesting 200 metres from wind turbines
Condition 17 (c)	Monitor Barrier Range Dragon habitat hotspots	Report if works occur in Barrier Range Dragon habitat hotspots
Condition 18	Monitor the implementation of the Biodiversity Management Plan	Report on the implementation of Biodiversity Management Plan
Condition 19	Monitor the implementation of the Bird and Bat Adaptive Management Plan	Report on the implementation of the Bird and Bat Adaptive Management Plan
Condition 20	Monitor the protected heritage items	Report any direct or indirect impact on the heritage items
Condition 21	Monitor the implementation of the Heritage Management Plan	Report on the implementation of the Heritage Management Plan
Condition 22	Monitor heavy or over-dimensional vehicles movements	Report heavy or over-dimensional vehicles not using the designated route

¹ The total amount of Porcupine Grass Sparse Woodland that could be cleared under the MOD 3 project approval issued in December 2016 was 0.81 hectares. In December 2017, the Secretary of the Department of Planning and Environment agreed to increase this total amount to 6.81 hectares.

Condition	Monitoring Requirements	Reporting Obligation
Condition 24	Monitor the implementation of the Road Upgrade and Maintenance Strategy	Report on the implementation of the Road Upgrade and Maintenance Strategy
Condition 26 (a)	Monitor the public road network	Report any tracked mud or dirt on the public road network
Condition 26 (b)	Monitor loaded vehicles entering or leaving	Report loads uncovered or uncontained
Condition 26 (c)	Monitor parking	Report if there is insufficient parking
Condition 26 (d)	Monitor deliveries	Report heavy or over-dimensional vehicles passing through Broken Hill during peak hours
Condition 26 (e)	Monitor work activities during local tourist events	Report any disruptions to local tourist events caused by the works
Condition 27 (a)	Monitor local traffic	Report any disruption to local road users
Condition 27 (b)	Monitor travelling stock routes	Report any disruption to the use of travelling stock routes
Condition 27 (d)	Monitor drivers	Report drivers not adhering to the drivers code of conduct
Condition 34 (b)	Monitor the classification of waste	Report any improper waste classification
Condition 34 (c)	Monitor stored waste and waste handling	Report any improper waste storage and handling
Condition 34 (d)	Monitor waste on site	Report any receipt or disposal on site of waste
Condition 34 (e)	Monitor waste disposal	Report any waste not being disposed of at appropriately licenced waste facilities
Condition 36 (a)	Monitor rehabilitated areas	Report any areas that have not been rehabilitated
Condition 36 (b)	Monitor exposed areas	Report any areas exposed for long periods of time
Condition 36 (c)	Monitor dust generation, soil erosion and weed incursion on parts of the site that cannot yet be permanently rehabilitated	Report on dust generation, soil erosion and weed incursion on parts of the site that cannot yet be permanently rehabilitated

Table 4: Summary of monitoring and reporting obligations - Environment Protection Licence

Condition	Monitoring Requirements	Reporting Obligation
Condition L1.1	Monitor for any pollution of waters	Report any pollution of waters
Condition L2.1	Monitor waste disposal	Report any waste generated outside the premises that is received at the premises or any waste generated at the premises that is disposed of at the premises
Condition L.3.1	Monitor noise generated by the operation of wind turbines	Report any exceedance of the noise limits at the residential premises nominated
Condition L3.3	Monitor noise generated by the operation of ancillary infrastructure	Report any exceedance of the limit of 35dB(A) LAeq (15 minute) at any non-associated residential premises
Condition L4.1	Monitor overpressure level from blasting operations on the premises	Report any exceedance of 115dB (Lin Peak) for more than 5% of the total number of blasts over a period of 1 year
Condition L4.2	Monitor overpressure level from blasting operations on the premises	Report any exceedance of 120dB (Lin Peak) at any time
Condition L4.3	Monitor ground vibration peak particle velocity from the blasting operations at the premises	Report any exceedance of 5mm per second for more than 5% of the total number of blasts over a period of 1 year
Condition L4.4	Monitor ground vibration peak particle velocity from the blasting operations at the premises	Report any exceedance of 10mm per second at any time
Condition L5.1	Monitor the construction hours	Report any non-compliance with the standard construction hours
Condition L7.1	Monitor the commissioning of wind turbines	Report if any wind turbine generates electricity before a licence variation is issued by the EPA to operate the constructed wind turbines to generate electricity
Condition L7.2	Monitor turbine height	Report if any constructed turbine is greater than 180 metres in height - measured from ground level to the highest blade tip point
Condition O1.1(a)	Monitor the processing, handling, movement and storage of materials and substances used to carry out the construction activity	Report if construction activities are not carried out in a competent manner
Condition O1.1(b)	Monitor the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the construction activity	Report if construction activities are not carried out in a competent manner
Condition O2.1(a)	Monitor all plant and equipment installed at the premises or used in connection with the licensed activity	Report if plant and equipment is not maintained in a proper and efficient condition
Condition O2.1(b)	Monitor all plant and equipment installed at the premises or used in connection with the licensed activity	Report if plant and equipment is not operated in a proper and efficient manner
Condition O3.1	Monitor the generation, or emission from the premises, of wind-blown or traffic generated dust	Report if activities occurring in or on the premises are not carried out in a manner that will minimise dust
Condition O3.2	Monitor trucks entering and leaving the premises that are carrying loads	Report if trucks entering and leaving the premises that are carrying loads are covered

Condition	Monitoring Requirements	Reporting Obligation
Condition O.4.1	Monitor fire prevention measures and procedures to manage fires	Report if there are no adequate fire prevention measures in place and procedures to manage fires for the premises
Condition O5.1	Monitor the type and volume of waste generated at the premises	Report if waste generated at the premises is not transported to a premises that can lawfully receive the waste
Condition M1	Monitor the monitoring records	Report if monitoring records are not being kept
Condition M2	Monitor pollution complaints	Report if pollution records are not legible
Condition M3	Monitor telephone complaints line	Report if telephone complaints line is not operating
Condition R1	Monitor annual return documents	Report if Annual Return is not completed and supplied
Condition R2	Monitor for environmental harm	Report if notifications of environmental harm are not made
Condition R3	Monitor EPA requested reports	Report if an EPA requested report is not provided within the time specified in the request
Condition G1	Monitor EPL availability on site	Report if a copy of the EPL is not being kept on site

Table 5: Summary of monitoring and reporting obligations - Construction Activities in Area 7

Condition	Monitoring Requirements	Reporting Obligation
DPE letter dated 22/12/17	Monitor the clearance of Porcupine Grass Sparse Woodland in Area 7	Report if more than the designated amount of Porcupine Grass Sparse Woodland in Area 7 is cleared
DPE letter dated 22/12/17	Monitor the full demarcation of the disturbance footprint in Area 7	Report if the full demarcation of the disturbance footprint in Area 7 is not undertaken