SIRIUS MINERALS PLC

Project Title / Facility Name:

North Yorkshire Polyhalite Project

Document Title:

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN - WOODMSITH MINE PHASE 5 (CEMP)

NYMNPA

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The CEMP should be reviewed internally by Careys every 3 months or more frequently depending on changes to site or environmental conditions.

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1 PURPOSE

The purpose of the Construction Environmental Management Plan (CEMP) is to be an accurate reference point to outline environmental controls on site and provide the following details:

- Describe the control measures, requirements and commitments required to discharge Condition 93 of Planning Permission NYM/2017/0505/MEIA.
- Describe the environmental issues that require control measures
- Describe any reporting, records or monitoring that is required on site to comply with consents, licences or contract conditions

2 ENVIRONMENTAL MANAGEMENT SYSTEM

This CEMP is a product of the Careys Civil Engineering Environmental Management System (EMS) which is certified to ISO 14001:2015. It describes how the environmental requirements and issues affecting this scope of works will be managed and the appropriate control measures that will be implemented by the site team.

3 DESCRIPTION OF PROJECT AND SCOPE OF WORKS

This CEMP is intended for the works involved with Phase 5 of the construction of a mine head for the extraction of polyhalite by underground methods at Woodsmith Mine, south of Whitby in North Yorkshire, as permitted under Planning Permission reference NYM/2017/0505/MEIA.

The scope of work for Phase 5 comprise:

- Construction of Service Shaft foreshaft chamber to a depth of 168.7m AOD (Above Ordnance Data)
- Construction of Service Shaft permanent winder foundations to a depth of 197.17m AOD
- Construction of Service Shaft permanent winder basement to a depth of 194.17m AOD
- Construction of Service Shaft permanent building foundations to 202.2m AOD
- Dewatering of Service Shaft foreshaft and platform to facilitate excavations;
- Excavation and construction of a working platform area on the western edge of the Production Shaft platform, with an AOD of 203.7m
- Stockpiling of extractive material for re-use.

The methodology and sequence of construction is described in the Phase 5 Construction Method Statement. (document reference 40-CAR-WS-1000-PA-MS-00001)

4 ROLES AND RESPONSIBILITIES:

The roles listed below are responsible for ensuring that the processes describe in this CEMP and any associated and referenced documents are implemented on site.

Role	Responsibilities
Operations Directors	Overall responsibility for the delivery of the project and meeting environmental management criteria and requirements. Ensure adequate resources are available for compliance with environmental management.
Contracts Managers	Responsible for management of the project. Establishes implements and maintains focus on the application of the Environmental Management System (EMS) on site. Communication of the requirements of this Construction Environmental Management Plan (CEMP).
Estimators	Responsible for ensuring that project environmental requirements are adequately described to subcontractors and suppliers in their tender documents, and project environmental risks have been identified within the cost plan and prelims.

Project Manager	Responsible for ensuring that the CEMP is implemented on site. Management & coordination of the on-site works and project administration relating to Environmental issues. Responsible for ensuring that EMS procedures are implemented and kept up to date including Key Performance Indicators (KPIs) and audit actions.
Project Engineer	Responsible for identifying site aspects and impacts relating to Environmental management.
Construction Manager	Responsible for implementation of this plan on site with respect to all construction activities and in raising and supporting environmental issues with relevant subcontractors and works staff.
Storeman	Responsible for the safe storage of COSHH (Control of Substances Hazardous to Heath) and Fuel materials. Carries out briefings on the use of all COSHH materials. Maintains supplies of spill response material.
Sustainability and Environmental Team	Overall responsibility for setting environmental and sustainability agenda and strategy for the Group. Maintaining EMS. Ensures projects are complying with environmental legislation and site-specific requirements. Ensuring and auditing projects against EMS.
Health Safety and Environment Advisors and Managers	Advising with staff on all aspects of health, safety and environment, being first point of reference to the sustainability manager. Carrying out site inspections and audits relating to environmental and sustainability issues.
All members of the project team	To be aware of environmental issues and constraints in their workplace, to actively work to reduce environmental impacts and help to promote sustainable construction.

5 PROJECT REQUIREMENTS

The tables below reference sections of this CEMP intended to discharge or partially discharge conditions relating to Planning Permission Reference NYM/2017/0505/MEIA.

Condition 93: Management of Construction	**Reference to appropriate section of CEMP or other documents**
Prior to the commencement of each Phase of Construction in accordance with the approved Phasing Plan at either Dove's Nest Farm or Lady Cross Plantation, an updated CEMP shall be based on the approved Construction Method Statement (CMS) and shall be submitted to and approved in writing by the MPA in consultation with the Environment Agency in respect of the area concerned. The CEMP shall include details of:	This version of the CEMP is for Phase 5 as defined in Section 3 above. Earlier versions of the CEMP have been produced for preceding works.
The size, location and design of any site compounds, including how any potentially polluting materials will be stored to minimise the risk of pollution.	Refer to section 6 and Appendix C
An incident response plan to deal with any pollution that may occur during the course of construction.	Refer to section 6.1
A protocol to deal with contaminated ground, should this be encountered, to ensure protection of water resources.	Refer to section 6.3
Details of how surface water run off shall be passed through a settlement facility or settlement facilities prior to being discharged into any watercourse or soakaway.	Refer to section 6.2.1
Plant and wheel washing including that it shall only be carried out in a designated area of hard standing at least 10 meters from any watercourse or surface water drain and that washings shall be collected in a sumo, with settled solids removed regularly and water recycled and reused where possible;	Refer to section 6.2.3
A scheme for the recycling / disposing of waste resulting from demolition and construction works;	Refer to section 6.3.1

Storage of wastes not covered by the Mine Waste Directive;	Refer to section 6.3.2
Measures to control the glare from on-site lighting;	Refer to section 6.4
Measures to manage deliveries by HGV including routing and timing for deliveries and details of the penalty system for breaches of the agreed controls;	Refer to section 6.5
Temporary traffic management;	Refer to section 6.5
The provision of a Dust Management Plan relating to Phase 1 of the construction period (earthworks and bund formation) and Polyhalite handing and stockpiling to include dust generation modelling so as to identify sensitive receptors;	Refer to section 6.6
Dust Management Plan: likely dust generation and its deposition during the construction phases and operation over time and under different weather conditions;	Refer to section 6.6.1
Dust Management Plan: the avoidance and mitigation measures required to ensure dust deposition levels at the sensitive receptors are maintained at the residual levels identified in the approved EIA and monitoring arrangements.	Refer to section 6.6.2
The Dust Management Plan must comply with the criteria set out in the “Dust and Air Emission Mitigation Measures” Best Practice guidance for control of dust on construction sites from the Institute of Air Quality Management 2012.	Refer to section 6.6.2
Dust Management Plan: The monitoring arrangements will include dust deposition or dust flux or real-time PM10 continuous monitoring locations;	Refer to section 6.6.3
Dust Management Plan: baseline dust monitoring at least 3 months before construction commences;	Refer to section 6.6.3
Dust Management Plan: daily on-site and off-site inspections at monitoring locations with results recorded in a log to be made available to the MPA on request, and more frequent monitoring during periods of high dust generation.	Refer to section 6.6.3
In the event that there is insufficient clay within the Lady Cross Plantation site to form the 1m deep basal layer beneath the spoil storage area, a contingency plan to address the importation of clay, including the source, quantity and quality of such materials, and how adverse effects on the water environment would be avoided;	Not applicable to this phase of the development
How the requirements of the approved CEMP will be disseminated to all relevant staff / contractors throughout the construction period;	Refer to section 8.2
The location of the site notice board;	Refer to sections 6.1.and 8.2
A Scheme for parking, loading, unloading during construction;	Refer to section 6.5 and the Construction Traffic Management Plan
A scheme for security and lighting during construction;	Refer to section 6.4
A protocol for the replenishment of tanks and containers including that all refuelling of vehicles, generators, plant and equipment shall be supervised and shall take place within a suitable bunded, impervious hardstanding;	Refer to section 6.8 and Appendix C

Contingency proposals for if fuel cannot be delivered for the generators, e.g. due to adverse weather;	Refer to section 6.8
How those artificial or historically straightened ephemeral surface water channels referenced in sections 15.7.22-15.7.24 of chapter 15 of part 2 of the ES are to be retained wherever possible, and enhanced to increase their capacity (e.g. through the introduction of meanders) and to increase their ability to capture sediment (e.g. through suitable planting);	Not applicable to this phase of the development
Proposals / contingency plans for waste not managed as part of the Mine Waste Permit comprising the storage and management of temporary mining waste stored on-site for less than three years (e.g. Pyritic Mudstone); non-inert and non-hazardous materials stored for less than six months, including measures to prevent the dispersal of dust, leachate and surface water runoff;	Not applicable to this phase of the development
A Precautionary Method of Working for Site Clearance (PMWSP) which shall be submitted to and agreed in writing by the MPA prior to commencement of each phase of construction and shall be adhered to thereafter. The PMSWP shall set out proposals for tree clearance and the demolition of structures and shall include that between March and September each year surveys of areas to be cleared should occur no less than 48 hours before clearance occurs so that occupied wild bird nests can be identified and prevented from being destroyed.	Not applicable to this phase of the development
Alarms fitted to mobile plant and vehicles for the purpose of warning pedestrians of the movements.	Refer to section 6.5 and the Construction Traffic Management Plan.

Additional conditions addressed in this CEMP are detailed below.

NYM/2017/0505/MEIA Planning Condition reference and description	**Associated documents to refer to:**
30 - Blasting and Vibration Management Plan 31 - Vibration Monitoring Equipment installed at RAF Fylingdales 32 - Ground vibration conditions 33 - Scheme for notification	No blasting will be undertaken in this phase of works therefore these condition clauses are not applicable.
49 - Dust Management Plans	Refer to section 6.6 of this CEMP which seeks to satisfy this condition for the purposes of the Phase 5 works.
52 - Protected Species Management Plans	All works will take place on a constructed working platform, with the exception of limited soil stripping in close proximity to the platforms, in areas of high existing levels of disturbance. The sitewide Protected Species Management Plans previously approved under Phases 2-4 would still apply to works generally and the Precautionary Method of Working would be followed. Refer to Protected Species Management Plans: 40-RHD-WS-70-EN-PL-0010 Ph3 PSMP for Reptiles 40-RHD-WS-70-EN-PL-0011 Ph3 PSMP for Badgers 40-RHD-WS-70-EN-PL-0012 Ph3 PSMP for Birds 40-RHD-WS-70-EN-PL-0013 Ph3 PSMP for Bats
57 - Landscape and Ecological Management Plan	No works of landscape or ecological management relating to the long term environment of the site will be undertaken as part of the Phase 5 scope. Works are restricted to the working platforms and their immediate environs.
70 – Arboricultural Method Statement	Limited soil stripping will be carried out in close proximity to the working platforms. No other vegetation or tree

	removal will take place as a part of the Phase 5 scope.
73 - Woodland Management	The Phase 5 Works do not involve any management of the Haxby and Belt plantations or Whinny Wood. Further discussion on woodland management will be held between Sirius Minerals and the National Park Authority, with management agreement to be delivered under separate cover, beyond the scope of Phase 5. See Section 6.11 of this CEMP.
76 - Soil Management Plan	Refer to section 6.11.1 of this CEMP
95 - Written Scheme of Archaeological Investigation	Refer to section 6.10 of this CEMP
97 - Shaft diameters and Spoil Management	The internal diameter of the foreshaft excavation at the Service shaft will be 35m. The diameters of the Service, Production and MTS shafts remain to be determined, pending detailed design by the shaft sinking contractor. Excavated material volumes will be approximately 46700m^3, of which around 5000m^3 will be used for construction fill material, with the remainder stockpiled for re-use as a non-waste material in the formation of landscape screening bunds.

For completeness this CEMP should also be read in conjunction with the following documents submitted to partially discharge the conditions listed below:

NYM/2017/0505/MEIA Planning Condition reference and description	**Associated documents to refer to:**
18 - Noise and Vibration Management Plan	40-RHD-WS-70-EN-PL-0027
34 - Construction Traffic Management Plan	40-RHD-WS-70-CI-PL-0008
46 - Hydrogeological Risk Assessment / Ground and Surface Water Monitoring Scheme / Remedial Action Plan	40-FWS-WS-70-WM-RA-0006
45 - Recharge Trench and Groundwater Drainage Provision 87 - Re-injection Borehole	40-FWS-WS-70-WM-RA-0006 40-ARI-WS-71-PA-RP-1060
47 - Ground Water Management Scheme	40-FWS-WS-70-WM-PL-0015
60 - Surface Water Drainage Design and 79 - Surface Water Drainage Scheme	40-ARI-WS-71-PA-RP-1055
81 - Wastewater Management Scheme	40-CAR-WS-1000-PA-MS-00001
91 - Emissions	40-RHD-WS-70-EN-RP-0004
92 - Construction Vehicle and Plant Management Plan	40-RHD-WS-70-CI-PL-0009
94 - Construction Method Statement	40-CAR-WS-1000-PA-MS-00001

6 SITE SPECIFIC ENVIRONMENTAL CONTROLS

Control measures will also reflect and take cognisance of the control measures mentioned in previous CEMPs issued to the Planning Authority for approval for other phases of work.

6.1 EMERGENCY PREPAREDNESS AND RESPONSE

Health, Safety and Environmental emergencies and incidents are to be addressed following the procedures that apply to the whole site, via the site HSE team and CFB Risk Management, of which all contractors will be a part of.

6.1.1 Environmental Preparedness

Potential environmental problems and emergencies are considered as part of the project planning, and the appropriate prevention and control measures put into place. These measures are communicated to all people working on the project including subcontractors through the Contract Environmental Induction, Tool Box Talks and Method Statement briefings.

The Emergency Contacts List, Drainage Plan/ Site Plan (including the location of spill kits) will be posted on notice boards.

Spill kits will be located within the stores in the site compound, at strategic points around the site and within all working vehicles. Vehicles will carry enough spill kit to clean up the amount of diesel/ oils they are carrying.

The minimum stock of spill kit held at a particular site location will depend on the activities, equipment and risks associated with the individual location. The Minimum Stock required on each works location will be assessed by the Environmental Advisor/ Manager. The type(s)/ quantities of pollution control equipment held as minimum stock is given in the table below. The minimum stock for spill kits will be included on the weekly inspection checklist.

Spill Kits and Other Pollution Prevention Material	Minimum Quantity	
	Site stores	Plant and Vehicles
Oil Spill Kit	2 No. 130 litre packs	1 No. 130 litre pack
Chemical Spill Kit	1 No. 25 litre packs	1 No. 25 litre pack
Oil absorbent granules	6 No. bags	2 No. bags
Oil absorbent pads	1 No. box (100 pads)	N/A
Chemical absorbent pads	1 No. box (100 pads)	N/A
Absorbent booms	1 No. 12’ boom and 4 No. 3’ booms	N/A
Dirt bag – for 2” pumps	1 per pump	1 per pump
Plant Nappy	Small (60cm x 50cm) – 1 per small pumps / generators, storing Gerry cans and refuelling	Small (60cm x 50cm) – 1 per small pumps / generators, storing Gerry cans and refuelling
	Medium (69cm x 100cm) – suitable for permanent refuelling areas	Medium (69cm x 100cm) – suitable for permanent refuelling areas
	Large - 137cm x 200cm – 1 per pump, compressor or large item of static plant	Large - 137cm x 200cm – 1 per pump, compressor or large item of static plant
Metal Jerry Cans	Labelled for any red diesel or diesel containers	Labelled for any red diesel or diesel containers
Funnel	Per filling device	1 per van

6.1.2 Spill Response Team

All employees will be instructed to bring any environmental incidents they identify to the immediate attention of the Foreman/ Site Management, after first taking what steps they can to contain / remediate the incident (without putting the health and safety of themselves or others at risk).

The Spill Response will be as follows:

- Stop the spill at the source e.g. put the drum upright, if this can be done safely.
- Contain using sand bags or booms or bunds – stop it going into drains/ditches/watercourses
- Use spill kit or sand to mop up
- If the spill is heading towards a watercourse: dig a trench downhill from the spill, line it if possible, and place absorbent material in the trench
- If the spill is in or near a watercourse: put a boom downstream of the spill and across the entire watercourse. Angle the boom to direct the spill towards one of the banks

- In watercourses, use skimmers or absorbent pads (not granules) to absorb the spill
- For large spills, call in a clean-up contractor to use a tanker to suck-up spill but ensure that the spill is bunded to stop any migration of spill towards watercourses/ditches/drains
- Put used spill kits/oily sand in heavy-duty labelled plastic sacks in Hazardous Waste skip/bin.

To ensure that pollution incidents are minimised and dealt with, site personnel will be trained in the use of spill kits and emergency preparedness. The personnel trained will then be identified in communications around the site and on the site notice board.

Spill response and emergency preparedness training will be carried out at the start of any new significant phase of work, when there is a personnel change to the Spill Response Team and when pollution prevention measures are altered, such as location of spill materials or COSHH Stores.

6.1.3 Reporting of Environmental Incidents

Any incident that has the ability to cause or has caused environmental harm must be recorded as an Environmental Incident through the site wide HSE Management system, PIMS.

An Environmental Incident is defined as an unauthorised or uncontrolled release of a substance or substances in any form (e.g. a gas, a liquid, a solid, a nuisance such as noise, vibration, odour or any combination of these) into the environmental media (air, land, water) requiring action to prevent or minimise environmental impact(s) which would be likely to result in any one or a combination of the following:

- Potential or actual environmental damage or harm e.g. to humans, flora, fauna, water, land contamination, property;
- The calling of any emergency service;
- The notification of the country's environmental enforcement body or Local Authority Environmental Health Officer;
- A breach of environmental legislation or of statutory authority conditions
- Complaints from local residents, stakeholders or client.

To help with trend analysis incidents will be classified according to the type of incident. Incidents can usually be classified under one of the ten types listed below. However, this is not a definitive list and a different classification can be used if the incident does not fit within one of these.

- Air
- Archaeology & Heritage
- Contaminated Land
- Ecology
- Groundwater
- Noise & Vibration
- Oils & Chemicals / COSHH
- Surface Water
- Traffic
- Waste

All incidents will be reported using the PIMS reporting system. Reporting timescales are as follows:

Timescale	Action
Immediately	Report the incident to a supervisor (project, site or line manager)
Within 2 hours	Project, site or line manager logs initial details on the incident reporting platform
Within 1 day	Project, site or line manager completes an initial incident report and logs it.
Within 2 weeks	Depending on the severity of the incident the Project Director and Environmental Manager complete a full investigation

If appropriate and or necessary the client and statutory authorities will be informed, and the site team will liaise with their personnel in investigations, assessments and the implementation of appropriate corrective and preventive actions.

6.2 Water

6.2.1 Surface Water

Description of site conditions	Surface water runoff and water that has collected in working areas will be directed to the surface water drainage system as outlined in the Surface Water Drainage Scheme Report that has been issued to NYMNPA in relation to conditions 60 and 79 (document references 40-ARI-WS-71-PA-RP-1055).
Control measures in place	The surface water drainage system is as per the proposals previously approved and described in Phase 4. Surface water that collects in the works area will be directed to a sump. It will then be pumped to a settlement tank where any suspended solids can settle out. The pH of the water will be checked regularly especially when surface water has collected on concrete areas. Visual checks will be made daily to the water to be pumped to ensure that suspended solids and any visual pollution is not present. All drainage engineering works necessary for Phase 5 were installed in previous Phases. Training on pollution prevention and environmental control measures will be given to all operatives and supervisors. Emergency preparedness drills will be carried out regularly to ensure that all operatives know what the procedure and processes are for reducing water pollution. Training will be supported by positive reinforcement on best practice carried out by the site teams.
Details of Records or monitoring required?	Visual checks will be made daily by the works supervisor and prior to any pumps being switched on. The daily site diary will note the estimated volume and quality of water collected in any working area and water quality and clarity. Regular pH monitoring results will be recorded in the site diary by a supervisor or operative who has received training in water quality and testing.
Responsibility of compliance and keeping records?	The Construction Supervisor for all areas of work will be responsible for visual checks for water ponding and for conditions of the pumps and ensure appropriate filtration is in place to minimise silt.

6.2.2 Ground Water

The procedure for managing groundwater and surface water collecting within the Phase 5 excavations is described in the Construction Method Statement (40-CAR-WS-10000-PA-MS-00001) and the description also supports partial discharge of planning condition 81. Groundwater and surface water are assessed within the Hydrogeological Risk Assessment (40-FWS-WS-70-WM-RA-0006) submitted in partial satisfaction of planning condition 46.

6.2.3 Vehicle Wheel Wash

The use of wheel wash facilities will be implemented as per the details approved within the Phase 3 CEMP, see Table 3.1 within the Phase 3 CEMP for further information.

6.3 Waste

6.3.1 Waste disposal

Description of site conditions	Several waste streams will be produced as a by-product of the works to be undertaken. These can be classed as: • Timber • Metal • General Construction Waste • Hazardous Waste from COSHH materials used • Office waste

	• Welfare Waste • Concrete washout • Waste water Excavated material will be stockpiled on site for beneficial re-use and therefore will not be removed from site as a waste. Waste streams generated by the Phase 5 Works will be managed via the site-wide facilities established in earlier phases and controlled by the Principle Contractor.
Consents, licences or permissions required	As for all waste management at the Woodsmith Mine Site, waste contractor's carriers licence and the Waste disposal site Environmental Permit or exemption will be provided to the project team prior to materials being removed off site. Waste transfer notes will be scanned and saved for a minimum of two years.
Control measures in place	Prior to works commencing a Site Waste Management Plan (SWMP) will be produced detailing the Duty of Care arrangements and estimated quantities and types of waste material to be produced. This will help to identify appropriate waste storage provision at different stages of the project works. Waste minimisation and waste prevention measures in place including zero-waste campaigns to change behaviour. Waste streams will be segregated into appropriate categories to encourage re-use and recycling on site and then off site. A waste compound will be set up for storage and collection of general construction waste. Proposals will be made for a composter located in the welfare and canteen area for food waste. Recycling bins for Dry Mixed recycling for office waste such as plastics and paper will be provided. Excavated material will be stockpiled on site and not removed off site. Material will be used in the construction of bunds around the perimeter of the site.
Details of Records or monitoring required?	Waste transfer notes or waste consignment notes for all waste removed off site. Movement record for stockpiled material on site Waste carrier and waste destination licences kept in project office and on project server
Responsibility of compliance and keeping records?	Waste contractor responsible for providing licences Contractor responsible for keeping Waste Transfer Notes and Duty of Care information

6.3.2 Waste Storage

6.3.2.1 Waste storage areas will be located in dedicated areas near to the works producing waste.

6.3.2.2 A central storage area for consolidation of construction wastes will be provided. This will allow for ensuring full loads and efficient material segregation.

6.3.3 Contaminated Land

The land associated with the Phase 5 works is not known to be contaminated.

Should contaminated land or ground that appears to be contaminated be discovered then works will stop in that area. The area will be demarcated, and any spoil removed will be kept separate on a layer of visqueen. Chemical testing will be carried out to determine the classification and waste status prior to the material being moved to an appropriate location.

6.4 Lighting

Description of site conditions	For works to be carried out safely and efficiently, temporary task lighting will be required especially within the shaft excavation and during hours of reduced daylight and night-time. Lighting will be designed, positioned and directed so as not to unnecessarily intrude on adjacent properties or wildlife and to reflect the Park's Dark Skies Policy.
Consents, licences or permissions required	Contractor Permit system to use task lighting outside of daylight hours.
Control measures in place	• All lights will be as per the specification already in use on the site as per approved planning conditions. Lights will be a 20W LED. • LED lights to be specified for lights on surface. All lights to be directional onto works and not into surrounding environment. • All lights will be positioned so as not to cause unnecessary light spill,particularly in an easterly direction towards the A171. • Lights will only be used to provide minimum illumination levels to the areas that are necessary to the safe operation of the construction site. • Mounting heights of lighting equipment will be kept to the minimum possible height so as not to be visible to external observers (i.e. below the level of temporary buildings and landscape bunds.) • Night-time works on surface need a permit system to ensure that only the appropriate lighting is used when necessary. • Lights in shaft will be directed downwards to the works and not pointing towards the surface to reduce glare. • All lighting equipment will use flat glass luminaires, set horizontally, to eliminate any direct upward light and maximise control of spill light. • Mounted luminaires should be built to utilise flat glass asymmetric floodlights. Upward light spill would be limited by the angle of the luminaire at no greater than 5^{o} above the horizontal plane.
Details of Records or monitoring required?	Register of mobile tower lights to be kept with their specification Register of permits for task lighting used on the surface during hours of darkness. Training records of staff and operatives who have attended environmental training and awareness raising sessions on lighting and dark skies. Register of comments and complaints detailing any external stakeholder concerns on lighting.
Responsibility of compliance and keeping records?	Construction manager to ensure that task lighting is maintained and directional to works. Environmental team to review lighting efficiencies and to monitor lighting levels. Procurement and buying teams to review all requisitions for task lighting to ensure orders stipulate lux levels and photocell timers.

6.5 Traffic, Plant and Deliveries

6.5.1 Traffic on and off site

Traffic movements on site will be as detailed in the Construction Traffic Management Plan (document reference 40-RHD-WS-70-CI-PL-0008) and the Construction Vehicle and Plant Management Plan (document reference 40-RHD-WS-70-CI-PL-0009).

6.6 Dust

6.6.1. Description of site conditions	As part of previous phases, works have been undertaken by other contractors to minimise the effect of traffic emissions and dust emissions on the local area through highway improvement works. Baseline dust deposition monitoring has been carried out prior to works commencing. It is expected that the main source of air quality and dust emissions will be from the following activities: • Combustion of fuel used in vehicles, plant and generators. • Site preparation and earth working activities; • Stockpiling of materials excavated from shafts and foundations • Handling and storage of construction materials;

	• Concrete batching; • Vehicle movements on site; • Vehicle movements off site.
6.6.2 Control measures in place	The measures to be employed for site preparation, ground works and movement of material will include, but may not be limited to, the following: • Carrying out earthworks during dry and/or windy conditions will be minimised or avoided if reasonably practicable, having regard to programme and contracting arrangements for the relevant works. Where this is unavoidable, and the nature of the activity indicates that dust may potentially affect off-site receptors, appropriate water suppression to control dust will be used; • Spoil materials extracted from the site will be recycled elsewhere on site, when and where appropriate; • Where the recycling of excavated materials is not possible, they will be removed away from site as soon as is practicable, minimising the need to stockpile potentially dusty material; and • Plant will be fitted with appropriate dust control measures, such as enclosed conveyors, rubble chutes and water suppression, where reasonably practicable, to reduce potential dust emissions. The activities and control measures applied to the handling and storage of materials will include the following: • Handling large quantities of potentially dusty material, where possible, will be done in an enclosed or shielded environment where practicable; • The storing of potentially dusty materials will be done away from site boundaries and/or potentially sensitive receptors where practicable; • Potentially dusty materials such as sand and other aggregates will be stored in designated areas and not allowed to dry out; • The number of handling operations of potentially dusty materials will be kept to a minimum, ensuring that any such material is not moved or handled unnecessarily; • Drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised, and such equipment will be fitted with fine water sprays wherever appropriate; and, • As stated in the Soil Management Plan, topsoil stockpiles will not exceed 3 m high and subsoil stockpiles will not exceed 7 m high. Side slopes will be no steeper than 1 in 2. The activities and control measures applied to vehicle movements on-site will include the following: • Hardstanding surface areas and haul routes will be installed for vehicles entering the site; • Any hardstanding areas will be regularly cleaned using wet sweeping methods; • Haul routes within the site and hardstanding will be visually inspected for integrity and condition and any maintenance undertaken as a result will be recorded within the site log book; • Unsurfaced areas of the site will be regularly dampened down during periods of dry and/or windy conditions if necessary; and, • Vehicles entering or leaving the site with loose or potentially dusty material will be adequately sheeted. Activities and control measures applied to vehicle movements off-site will include the following. More details can be found in the Construction Traffic Management Plan (document reference 40-RHD-WS-70-CI-PL-0008): • All construction vehicles will access and leave the site at the designated hard-surfaced access points following the initial construction of the site access; • Wheel washing facilities will be provided at the site's point of egress to minimise the potential for the carrying of dust and mud off the site. All construction vehicles will pass through the wheel-washing facilities where provided;

	• The wheel wash will incorporate a rumble grid to dislodge accumulated mud and dust and will be positioned so that there is an adequate area of hard surfaced road between it and the public highway; • Public roads and access routes adjacent to the site will be regularly cleaned using wet sweeping methods; and • Vehicles leaving site with loose or potentially dusty material will be adequately sheeted. In addition to the phase and activity-specific control measures described above, generic measures will also be implemented throughout the works programme, including: • The burning of waste materials will be prohibited at the site; • All dust suppression equipment will be maintained in a good condition and a record made of any maintenance carried out; • Site fencing, barriers and scaffolding will be cleaned as necessary using wet methods; • The dry sweeping of large areas will be prohibited; • Bins and skips will be sheeted or enclosed and only opened during the periods in which they are being filled; • Equipment will be readily available on site to clean up any spillages as soon as reasonably practicable using wet cleaning methods; and, • Hoardings will be used, if required, to protect potentially sensitive receptors. The height of hoardings will be managed to suit the dust risk and meteorological conditions at the time of works. The concrete batching plant will implement the following to minimise emissions of fugitive dust: • Exhaust air filtration will be employed when cement silos are filled; • Air displaced when filling the mixer will be drawn off via exhaust filters; • The stored aggregates that are added will have sufficient moisture content to ensure fugitive dust emissions are minimised; • Displaced air from the mixer interior will be fed back to the weighing hopper via an enclosed hose; and • In the event of dust escaping from the closed system, cement dust will be collected inside the plant lining, which will minimise the amount of dust emitted to air.
6.6.3 Details of Records or monitoring required?	Passive dust gauge monitoring will be carried out as per the approved process from Phase 3. It will be the responsibility of all site personnel to maintain vigilance for dust emissions during the construction works. Any significant dust emission occurring, with the potential to travel beyond the site boundary, will be reported to the General Foreman or another designated individual, who will be responsible for investigating the cause and taking immediate action to minimise further emissions. If necessary, site operations will be halted until an appropriate remedial action can be implemented. Daily visual dust inspections, both on-site and off-site, will be undertaken by the General Foreman or another designated individual. If elevated levels are found, the General Foreman or other designated individual will investigate the cause. Immediate remedial action will be taken where necessary. A daily record relating to the management of dust will maintained at the site. The information record will include: • Details of the source, date and time of any significant dust emission during site operations, along with an assessment of its likely impact; and • Details of remedial action taken, and changes made to operational procedures, in order to eliminate or minimise dust emissions. The daily record of dust management will be made available on request. During periods of high dust generation, more frequent visual monitoring will be undertaken. Fuel use will be monitored to ensure that fuel minimisation methods are being successful.

6.6.4 Responsibility of compliance and keeping records?	Contractor storeman and construction manager will keep record of all plant and machinery associated with the project and used on site including on and off hire dates and maintenance records.

6.7 Noise and Vibration

A wide range of measures have been developed to reduce the impacts of noise and vibration from construction. Measures, such as construction of bunds and the erection of an acoustic fence, have been incorporated into the design of the project. Other activity specific measures, such as acoustic screening of noisy works are also implemented and monitored.

A Noise and Vibration Management Plan has been developed for the Phase 5 Works (see document reference 40-RHD-WS-70-EN-PL-0027). This includes details of noise sensitive receptors, agreed noise limits, monitoring to be undertaken and mitigation measures to be implemented.

6.8 COSHH Materials including Fuel

Description of site conditions	A dedicated storage area will be set up on impermeable hard standing in a location that is accessible but not at risk from damage from moving plant and vehicles. Fuel will be stored and managed in a centralised area on hard standing and located at least 5m away from tributaries to the watercourses or the surface water drainage system. Fuel deliveries, ordering and stock control will be managed by a central resource for all contractors on site. This will minimise the need for multiple and satellite fuel storage and ensure that the main fuel stores are appropriately managed.
Consents, licences or permissions required	None required other than adherence to pollution prevention measures.
Control measures in place	COSHH register and details of the Material Safety Data Sheets (MSDS) will be kept up to date in the stores. COSHH risk assessments will be carried out and a COSHH briefing given to operatives before initial use. All fuel and COSHH materials will be managed by a dedicated storeman. Removal of COSHH waste will be arranged through a licenced waste contractor and a hazardous waste consignment note raised for every movement. Fuel bund will be sized to be 110% of largest container of fuel and situated on an impermeable bund. Mobile fuel bowser will be double skinned and situated on an impermeable hard standing with a drip tray underneath and locked when not in use. No additional items will be stored in the fuel bund, other items of COSHH will be stored in the dedicated COSHH store – a fully contained and bunded container store with capacity of 100% of contents. Diesel and fuel will be delivered in bulk and stored centrally to reduce deliveries and the risk of delivery and transportation. Volumes of fuel will be monitored to ensure that excess fuel is not being stored on site but that volumes are adequate to supply plant for night shifts and to cover contingency in the adventure of unexpected and or additional power demands, plant movements or lack of supply. All plant and equipment on ground level will go to the fuel store to refuel. Plant in the shaft will be refuelled by an appropriate mobile bowser (approximately 1000l capacity) being lifted into shaft. Spill control measures will be put in place in the shaft and managed by the construction manager for the excavation. Spill response procedures and a “Spill Response Team” will be appointed and regular drills carried out as well as stock checks on pollution prevention materials.
Details of Records or monitoring required?	Hazard waste consignment notes will be scanned to the project server and hard copies kept in the waste folder in the contractors’ office. Waste movements will be recorded in the site waste management plan (SWMP) Scanned copies will be stored for a minimum of 3 years. Copies of the Waste carrier licence of waste contractor removing waste and Environmental Permit for waste destination will be kept on site. All COSHH materials will have a risk assessment completed prior to their use on site. All fuel volumes delivered and used will be logged by the on-site environment team.

	Records of maintenance and integrity checks on the COSHH Store and Fuel storage area will be recorded by the storeman.
Responsibility of compliance and keeping records?	Storeman for keeping records of COSHH Environmental Manager and Project HSE Advisor for keeping training records of spill response team.
Link to other documents and drawings?	Appendix C Schematic of COSHH and fuel storage compound

6.9 Site Clearance and Ecology

6.9.1 Site Clearance

Works on the shafts and winder building foundations will commence on pre-prepared ground.

Limited soil stripping will be carried out in close proximity to the working platforms to facilitate the extension of the Production Shaft Platform. No other vegetation or tree removal will take place as a part of the Phase 5 scope.

The Phase 5 Works do not involve any management of the Haxby and Belt plantations or Whinny Wood. Further discussion on woodland management will be held between Sirius Minerals and the National Park Authority, with management agreement to be delivered under separate cover, beyond the scope of Phase 5.

6.10 Archaeology and Built Heritage

Where the stripping and temporary storage of limited volumes of topsoil and subsoil are necessary to facilitate the extension of the Production Shaft Platform or to add to existing stockpiles, the relevant methodologies, observations and reporting protocols adopted within the approved Phase 3 Archaeological Written Scheme of Investigation will be followed (see document reference: 40-COT-WS-70-EN-PL-0003).

As per previous phases of work, if archaeological remains, human remains, coins, gold or silver objects are found, works will be stopped, and the Sirius Environmental team will be notified immediately. Specialist archaeological advice will be consulted. This approach will be consistent throughout the duration of Phase 5 works and the Woodsmith development.

6.11 Extractive Material Management

Management of materials removed as part of the excavation process are described in the Construction Method Statement (CMS), document reference 40-CAR-WS-1000-PA-MS-0001.

6.11.1 Soil Management

In compliance with Condition 76 of NYM/2017/0505/MEIA, where the stripping and temporary storage of limited volumes of topsoil and subsoil are necessary to facilitate the extension of the Production Shaft Platform or to add to existing stockpiles, the relevant principles and practices adopted within the approved Phase 3 and Phase 4 Soil Management Plans will continue to be followed (see document references: 40-FWS-WS-70-CI-PL-0002 and 40-FWS-WS-70-CI-PL-0003). While it is unlikely that any such stripping would be necessary beyond the 1st of October 2018, should the need arise, written approval will be sought from the Minerals Planning Authority, as was the case for Phase 4. Temporary storage of soils would also follow the previously approved Soil Management Plan procedures. The Phase 4 Soil Management Plan (40-FWS-WS-70-CI-PL-0003) outlines the methodologies for this work and builds on the detail in the Phase 3 Soil Management Plan (SMP) (40-FWS-WS-70-PL-0002), Table 10-1. The soil (top soils and subsoils) handling procedures outlined in the Phase 3 SMP will be complied with during Phase 5.

7 COMMUNITY ENGAGEMENT

The project team will work closely with the Sirius Minerals Community Liaison team and the Community and Stakeholder Engagement Framework (CSEF) team to ensure that the project team and the works they carry out during Phase 5 are respectful of the local community. Initiatives will be adopted to contribute positively to the local area including potential for employment, fundraising, educational support to local schools.

Community Engagement Aspect	Details of involvement
Registration with the Considerate Constructors Scheme	The project will be registered with the Considerate Constructors Scheme.
Sending out Community Newsletters and updates on the project	This will be completed in conjunction with the Community Liaison officers from Sirius Minerals and discussed through the Community and Stakeholder Engagement Framework (CSEF).
Charitable events and fundraising	The project will "adopt" charities from the local area and arrange a programme of fundraising throughout the duration of the project.
Direct contact with the public such as traffic marshals, working in the public highway	Sirius Minerals has set up a 24-hour telephone community helpline for enquiries or concerns about the project. Phase 5 of the project will be concentrated in the middle of the site boundary and there will be no public interface to the works other than commuting to the work place and staff and operatives living and integrating with the local area.
Involvement with local schools and colleges	The project will actively look to engage with local schools and colleges to share updates on the overall project and to assist with promoting STEM and careers in construction.
Involvement with local businesses	The project will aim to employ local suppliers and subcontractors where possible and will be active in advertising positions and supporting training and apprenticeships should they be appropriate to the scope of works.

8 COMMUNICATION

8.1 Training to staff

All personnel involved with the project will receive a site induction which will include basic environmental information and information relevant to the site conditions.

All project staff will receive environmental training appropriate and suitable to their role. Operatives and subcontractors (if applicable) will receive environmental training and tool box talks as appropriate to their level of impact and activity risk on the environment. They will also be made aware of the project environmental documentation including Carey Group EMS.

Records of training and toolbox talks will be kept in the project office to ensure coverage and frequency.

Environmental Tool Box Talks on subjects specific to the current or future works will be given on a regular basis, no less than once a month. Environmental campaigns to raise awareness of wider environmental initiatives and public interest will be regularly distributed and communicated to staff and operatives. The means of communication will vary to ensure interest, understanding and information retention and will be varied depending on the target audience.

Any environmental communications intended for the community and external parties will be approved by the client and the Community Relations Officer prior to release.

8.2 Awareness of Requirements of CEMP

The CEMP will be made available to all personnel, permanent staff and contractors working on this scope of works. Confirmation of briefing will be recorded.

Particulars of the CEMP and pollution prevention measures will be displayed on the site notice board. An environmental section will be created on the site notice board. The site notice board will be located in the site office and at the briefing areas adjacent to the works.

8.3 Comments and Complaints

A register will be kept all of communications, comments and complaints received regarding the execution of the works or the conduct of project personnel or the suppliers and subcontractors working on our behalf. This register will be available to interested parties on request through the client.

The type of comment, the specific concern and then the action taken to appease and manage the root cause of the comment will be logged on the register. All comments will aim to be addressed within 24 hours of receipt.

Respect to the local community will be discussed in the site induction so that all personnel appreciate the concerns and requirements of the local community.

Complaints procedure as implemented by Sirius Minerals and outlined in the Phase 3 CEMP Appendix 6 will continue to apply to this phase of works.