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NYM/2017/0505/MEIA

NYMNPA

02/03/2023

Date: 2 March 2023
Our ref: 50303/04/HS/26308382v1

Dear Rob

North York Moors: Ladycross Plantation - Application to Partially Discharge Conditions 4, 18, 34, 42, 52, 57, 59, 60, 65, 68, 70, 71, 76, 80, 88, 89, 90, 91, 92, 93, 94 and 95 of Planning Permission NYM/2017/0505/MEIA

On behalf of our client, Anglo American Woodsmith Limited, we are pleased to submit this application for limited and partial approval of Planning Conditions 4, 18, 34, 42, 52, 55, 57, 59, 60, 65, 68, 70, 71, 76, 80, 88, 89, 90, 91, 92, 93, 94 and 95 of Planning Permission NYM/2017/0505/MEIA.

The Project will be delivered in a series of Phases within each discrete part of the overall consented area. This application relates solely to Phase 6 works at Ladycross Plantation.

Background

On 19 October 2015, the NYMNPA granted planning permission for the “*Winning and working of polyhalite by underground methods including the construction of a minehead at Dove's Nest Farm involving access, maintenance and ventilation shafts, the landforming of associated spoil, the construction of buildings, access roads, car parking and helicopter landing site, attenuation ponds, landscaping, restoration and aftercare and associated works. In addition, the construction of an underground tunnel between Doves Nest Farm and land at Wilton that links to the mine below ground, comprising 1 no. shaft at Doves Nest Farm, 3 no. intermediate access shaft sites, each with associated landforming of associated spoil, the construction of buildings, access roads and car parking, landscaping, restoration and aftercare, and the construction of a tunnel portal at Wilton comprising buildings, landforming of spoil and associated works*” (Council Reference NYM/2014/0676/MEIA).

NYM/2014/0676/MEIA was approved subject to 95 planning conditions and a Section 106 Agreement.

On 6 February 2017, the NYMNPA granted planning permission for the “*Variation of Condition 5 of planning permission NYM/2014/0676/MEIA to allow minor material amendments relating to that part of the development at the Woodsmith Mine site (formerly known*

as Doves Nest Farm and Haxby Plantation), including; re-design of foreshafts and shaft construction methodology, changes to building layout and shaft access arrangements, revisions to construction and operational shaft platform levels, revisions to location and layout of surface water attenuation ponds, revisions to groundwater management arrangements and amendments to internal access arrangements” (Council Reference NYM/2017/0505/MEIA).

The amended scheme (NYM/2017/0505/MEIA) was approved subject to 98 planning conditions and a deed of variation to the originally approved Section 106 Agreement.

Phase 6 Works

Phase 6 comprises the following works:

- Installation of shaft infrastructure including tally hut, communications and ventilation fan;
- Installation and use of temporary cable laying sub-bases, winch and emergency rescue wine;
- Installation of Alimak and associated infrastructure;
- Backfill of the Lagoon;
- Installation and use of temporary shaft head house and associated services;
- Installation and use of grout plant and associated services;
- Installation of emergency back-up generators; and
- Construction of temporary overflow car park including tarmac hardstanding for an additional 10 car parking spaces.

Partial Discharge

Anglo American acknowledges that limited and partial approval of Planning Conditions 4, 18, 34, 42, 52, 57, 59, 60, 65, 68, 70, 71, 76, 80, 88, 89, 90, 91, 92, 93, 94 and 95 when given, does not constitute permission to undertake works other than those described, and that such works remain subject to the approval of other conditions.

This approach has been discussed and agreed with your Planning Team and is consistent with the approach taken at the Woodsmith Mine site.

Application Submission

The application was submitted via the planning portal on 2 March 2023 (reference PP-11961711) and comprises the following documentation:

- Completed application form;
- Application drawings – Please see Appendix 1;
- Supporting Documents – Please see Appendix 1.

The requisite planning application fee of £116 has been paid online by credit card.



Conclusion

We trust that this application provides you with the necessary information to be able to partially discharge the above conditions to cover Phase 6 site works at Ladycross Plantation. However, should you require any further information, please do not hesitate to contact me.

Yours sincerely

James Cox
Associate Director

Appendix 1 : Supporting Documents

Condition No	Description	Document Name / Number	Further Details
N/A	N/A	Listed Plans	40-STC-LC-2100-PA-22-20119 – Ladycross Plantation Phase 6 General Arrangement 40-STC-LC-2100-PA-22-20117 – Ladycross Plantation Phase 6 Phasing Plan
4	Phasing Plan	40-STC-LC-2100-PA-22-20117 – Ladycross Plantation Phase 6 Phasing Plan	N/A
18	Noise & Vibration	Phase 6 Ladycross Plantation Noise and Vibration Management Plan - 40-STC-LC-2100-EN-PL-00030	N/A
34	Construction Traffic Management Plan	Phase 6 Ladycross Plantation Construction Traffic Management Plan - 40-STC-LC-2100-LG-PL-00007	
42	Access	Refer to CEMP (Condition 93)	Access arrangements will remain as per earlier phases. Further details regarding the proposed parking, manoeuvring and turning areas that will be utilised in this phase are also set out in the Construction Method Statement and Listed Plans.
52	Protected Species Management Plan	Ladycross Plantation Phase 3 Protected Species Management Plan – Bats – 40-STC-LC-2100-EN-PL-	Please also refer to the Phase 6 CEMP (Condition 93).

		<p>00001</p> <p>Ladycross Plantation Phase 3 Protected Species Management Plan – Breeding Birds – 40-STC-LC-2100- EN-PL-00002</p> <p>Ladycross Plantation Phase 3 Protected Species Management Plan – Reptiles – 40- STC-LC-2100-EN- PL-00003</p> <p>Ladycross Plantation Phase 3 Protected Species Management Plan – Badgers – 40- STC-LC-2100-EN- PL-00004</p> <p>Ladycross Plantation Phase 3 Protected Species Management Plan – Water Voles – 40-STC-LC-2100- EN-PL-00005</p>	
57	Landscape & Ecological Management Plan	Ladycross Plantation – Phase 3 Works – NYMNP 57 Landscape & Ecological Management Plan– 40-STC-LC-2100- EN-PL-00014	The Phase 3 LEMP will remain applicable for the Phase 6 works.
59	External Lighting	Refer to CEMP (Condition 93)	N/A
60	Surface Water	Ladycross	The Phase 3 Surface Water Drainage

LICHFIELDS

	Drainage	Plantation – Phase 3 Works – NYMNPA 60 and 80 Surface Water Drainage Scheme – 40-STS-LC-2100-PA-PL-20102	Scheme will remain applicable for the Phase 6 works.
65	Temporary Fencing	Refer to Construction Method Statement (Condition 94)	Please also refer to CEMP (Condition 93).
68	Temporary Structures	Refer to Construction Method Statement (Condition 94)	Please also refer to CEMP (Condition 93).
70	Arboricultural Method Statement	Ladycross Plantation Phase 3 Arboricultural Method Statement – 40-STS-LC-2100-CN-MS-00003	Please also refer to CEMP (Condition 93).
71	Hard & Soft Landscaping	40-STS-LC-2100-PA-22-20118 – Ladycross Plantation Phase 6 Hard and Soft Landscaping Plan	N/A
76	Soil Management Plan	Ladycross Plantation – Phase 3 Works – NYMNPA 76 Soil Management Plan – 40-STS-LC-2100-EN-PL-00007	The Phase 3 Soil Management Plan will remain applicable for the Phase 6 works.
80	Surface Water Drainage	Ladycross Plantation – Phase 3 Works – NYMNPA 60 and 80 Surface Water Drainage Scheme – 40-STS-LC-2100-PA-PL-20102	See Condition 60 above
88	Hydrogeological Risk	Ladycross Plantation – Phase	The Phase 5 HRA will remain applicable to the Phase 6 works.

	Assessment	5 Works – NYMNP Condition 88 & 90 Hydrogeological Risk Assessment – 40-STS-LC-2100- EN-RA-00004	Please also refer to CEMP (Condition 93).
88	Ground Water & Surface Water Monitoring Scheme	Ladycross Plantation – Phase 6 Works – NYMNP Condition 88 Construction & Operation Groundwater & Surface Water Monitoring Scheme – 40-STS-LC-2100-EN-PL-00029	
89	Remedial Action Plan	Ladycross Plantation – Phase 4 Works – NYMNP 89 Remedial Action Plan – 40-STS-LC-2100-EN-PL-00017	The Phase 4 Remedial Action Plan will remain applicable to the Phase 6 works.
90	Groundwater Management Scheme	Ladycross Plantation – Phase 5 Works – NYMNP Condition 88 & 90 Hydrogeological Risk Assessment – 40-STS-LC-2100- EN-RA-00004	The Phase 5 HRA will remain applicable to the Phase 6 works. Please also refer to CEMP (Condition 93).
91	Emissions	Phase 6 Ladycross Plantation Emissions to Atmosphere - 40-STS-LC-2100-EN-PL-00031	N/A
92	CVPMP	Phase 6 Ladycross Plantation Construction	N/A

		Vehicle & Plant Management Plan - 40-ST5-LC-2100-LG-PL-00006	
93	CEMP	Phase 6 Ladycross Plantation Construction Environmental Management Plan – 40-ST5-LC-2100-EN-PL-00028	N/A
94	Construction Method Statement	Phase 6 Ladycross Plantation Construction Method Statement – 40-ST5-LC-2100-CN-MS-00007	Listed plans.
95	Written Scheme of Investigation	Refer to CEMP (Condition 93)	40-COT-LC-8324-EN-PL-00002 – Ladycross Plantation - Written Scheme of Investigation for an Archaeological Watching Brief – Phase 2

NYMNPA
02/03/2023



Project Title / Facility Name:
Woodsmith Project

Document Title:
CONSTRUCTION METHOD STATEMENT - PHASE 6 - LADYCROSS

Document Review Status

- 1. Reviewed – Accepted – Work May Proceed By: Angela Samuels
- 2. Reviewed – Accepted As Noted, Work May Proceed, Revise & Resubmit On: 22 Feb 2023 13:31
- 3. Reviewed – Work May Not Proceed, Revise & Resubmit
- 4. For information only
- 5. On Hold – Pending Project Restart & Ramp Up

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B	30-Jan-2023	Planning	PLA			
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This document has been electronically verified and accepted in accordance with Project Information Management System (Pims) prior to issue. An audit trail of verification and acceptance is available within Pims. As such signatures are not required. Only the latest accepted revision of the digital version is considered valid for use. Any print out shall be regarded as a non-controlled copy.



**WOODSMITH PROJECT
(788.5030)**

**CONSTRUCTION METHOD
STATEMENT – PHASE 6 –
LADYCROSS PLANTATION /
40-ST5-LC-2100-CN-MS-00007**

Revision	Date of issue	Prepared by	Checked by	Approved by	Changes
A (PLA)	30/11/2022	W Hodgson	C Thomas	C Fryer	First issue
B (PLA)	30/01/2023	W Hodgson	C Thomas	C Fryer	Revision in accordance with Rev A comments
C (PLA)	15/02/2023	W Hodgson	C Thomas	C Fryer	Revision in accordance with Rev B comments

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1. INTRODUCTION

1.1. OVERVIEW

This document has been prepared on behalf of Anglo American and details the Construction Method Statement for the Phase 6 construction activity at Ladycross Intermediate Shaft Site (Ladycross).

Anglo American is constructing a Mineral Transport System (MTS) tunnel, as part of the wider Woodsmith Project. The tunnel will be used to transport polyhalite from the Woodsmith Mine site to the Material Handling Facility (MHF) at Wilton, Teesside. Safe and efficient construction and operation of the tunnel requires the construction of an intermediate shaft at Ladycross to provide access to the tunnel.

This document builds on the previous Construction Method Statements (CMS) for the previous phases of works.

This report only details the construction works required for the Phase 6 works at Ladycross.

The CMS provides an overview of resource requirements, the plant and materials that are anticipated to be used during the Phase 6 construction works at Ladycross. It includes the measures to be taken to ensure that the works are carried out in accordance with the requirements of both the planning permission and of Anglo American and, above all, are carried out safely and in compliance with all statutory obligations.

In addition, while not submitted to the Planning Authority, all site works are controlled by a Risk Assessment and Method Statement (RAMS) process, which identify the resources, plant, materials and specific controls required for all scopes of work.

The Phase 6 scope of works, comprises:

- Installation of shaft infrastructure including tally hut, communications and ventilation fan;
- Installation and use of temporary cable laying sub-bases, winch and emergency rescue winch;
- Installation of Alimak and associated infrastructure;
- Backfill of the Lagoon;
- Installation and use of temporary shaft head house and associated services;
- Installation and use of grout plant and associated services;
- Installation of emergency back-up generators; and
- Construction of temporary overflow car park including tarmac hardstanding for an additional 10 car parking spaces.

A site plan is provided separately.

Table 1 - 1 Condition NYMNPA-94: Construction Method Statement

NYMNPA 94 Compliance	Compliance
<p>Prior to the commencement of each phase of the development at Dove's Nest Farm or Lady Cross Plantation in accordance with the approved Phasing Plan, a Construction Method Statement shall be submitted for that phase, and approved in writing by the MPA, in consultation with the appropriate Highway Authority. Each approved Statement shall be adhered to throughout the construction period. The Statements shall provide for:</p>	<p>This Phase 6 Construction Method Statement</p>
<p>(i) The parking of vehicles of site operatives and visitors clear of the highway;</p>	<p>Section 2.3 Phase 6 Construction Traffic Management Plan</p>
<p>(ii) Loading and unloading of plant and materials;</p>	<p>Section 2.6 Phase 6 Construction Traffic Management Plan</p>
<p>(iii) Storage of plant and materials used in constructing the development;</p>	<p>Section 2.6</p>
<p>(iv) Erection and maintenance of security fencing;</p>	<p>Section 2.2</p>
<p>(v) Wheel washing facilities;</p>	<p>Section 2.9</p>
<p>(vi) An outline construction method for sub-surface works including adherence to the 'rack and pillar' method of mining described in the SEI (14th February 2015) and the SRK Subsidence Memorandum (15th May 2013);</p>	<p>This type of work is not required in Phase 6</p>
<p>(vii) Buildings and structures associated with the mine and tunnel shafts;</p>	<p>Section 3</p>
<p>(viii) Welfare/office building and security gatehouse;</p>	<p>Section 2.2</p>

NYMNP 94 Compliance	Compliance
(ix) Screening bunds;	Phase 6 Noise Vibration Management Plan
(x) Hardstandings;	Section 3
(xi) Shuttle Bus terminal;	Phase 6 Construction Traffic Management Plan
(xii) Park-and-Ride layby;	This type of work is not required in Phase 6
(xiii) Emergency helipad;	This type of work is not required in Phase 6
(xiv) Lighting columns;	Section 2.8 Phase 6 Construction Environment Management Plan
(xv) Internal access and haul roads;	Section 2.7
(xvi) Domestic wastewater (foul sewage) treatment plant;	Section 2.10
(xvii) Non-domestic wastewater treatment plant and settlement tanks;	Section 2.10
(xviii) Surface water attenuation ponds, settlement ponds, swales and wetland areas;	Phase 3 Surface Water Management Plan and Phase 3 Surface Water Drainage Scheme
(xix) Temporary spoil and Polyhalite storage areas;	This type of work is not required in Phase 6
(xx) Removal of any temporary structures; and	No removal of temporary structures required in Phase 6
(xxi) Formation of spoil mounds and the establishment of vegetation on them.	Phase 3 Soil Management Plan

NYMNP 94 Compliance	Compliance
The CMS shall contain a construction timetable and order of works noting any construction dependencies, refer to any inherent mitigation measures required to address adverse impacts identified in the EIA and cross refer to the CEMP in relation to any additional avoidance or mitigation measures	Phase 6 Construction Environment Management Plan

The CMS is a live document and updates to this CMS plan will be prepared for subsequent construction phases and following any design or method change. The NYMNP has confirmed that it supports this approach.

2. DESCRIPTION OF WORKS

2.1. PHASE 6 WORKS

Phase 6 works will cover surface works associated with the shaft infrastructure and fit-out in preparation for the MTS tunnel operations. The shaft will provide access to tunnel personnel as well as essential services including ventilation, water, compressed air, grout and power for the MTS construction phase.

The proposed works will provide:

- Installation of shaft infrastructure including:
 - 40 ft tall and communications cabin to provide a controlled point of access / egress into the shaft.
 - 1m diameter ventilation fan with ducting to provide clean air to personnel operating within the shaft.
 - Lighting install to the internal of the shaft for safe operation.
- Installation and use of temporary cable laying infrastructure and shaft winches:
 - Construction of reinforced concrete slab for install of shaft cable laying winch and Hydraulic Power Units (HPUs) to facilitate install of shaft electrical cables (temporary use);
 - Re-use of concrete slab following completion of cable laying works as a Shaft storage area; and
 - Construction of reinforced concrete slab for install of emergency Alimak winch and HPU to facilitate emergency rescue operations in the event the Alimak was to fail. Installation of canopy over winch to weatherproof rescue equipment.
- Installation of Alimak and associated infrastructure:
 - Set-up and installation of air winch and man riding basket to install 9m Alimak mast sections including brackets and trays;
 - Installation of lower landing platform at the base of the shaft and secondary enclosure at the level of the proposed adit; and
 - Installation of the lift car to the top of the previously installed mast, along with surface support frame used to brace Alimak to the concrete slab.
- Backfill and restoration of the cuttings lagoon following completion of dewatering as part of Phase 5:

- Removal of remaining silt / solids from base of the lagoon via tankers or solidification process;
 - Removal of Geosynthetic Liner (GCL), lagoon LDPE liner and surplus engineered clay;
 - Backfill of excavated lagoon with previously excavated subsoils, superficial deposits; and
 - Hardstanding cover for use as a laydown area.
- Construction of a 15m high headhouse structure that is situated above the shaft on ground level, providing access to the Alimak (lift car) and housing the emergency winch system that can be used to retrieve the lift car in an emergency situation.
 - Construction of a tarmacked overflow car park to include an additional 10 car parking spaces to bring the site total excluding disabled and visitor parking up to 40 spaces. To allow for increased footfall between shift changeovers.

2.2. OFFICES AND COMPOUNDS

No changes will be made to the existing office and welfare block during Phase 6.

2.2.1. LAYDOWN AREAS

The laydown area and workshops constructed during Phase 3 works will be utilised for general laydown of materials and day to day small mechanical tasks. The immediate area surrounding the Phase 6 working areas will be demarcated using pedestrian barriers and classified as a 'restricted access area' where only authorised personnel involved in the operation can gain unescorted access.

2.3. CAR PARKING

All site personnel will continue to use the car parking facilities established during the Phase 3 works. Parking will only be permitted within designated car parking areas. No access to the site by foot is permitted. A peak of up to 45 employees are expected on site during the Phase 6 works. As stated in Section 2.5.5, mass transport such as car sharing, and mini-bus services will be utilised to ensure parking is limited to the 43 spaces set out in the Phase 6 Construction Traffic Management Plan (CTMP).

A temporary overflow tarmacked car park will be constructed on the east side of the existing welfare unit. The additional area will provide an additional 10 parking spaces not including site visitors and disabled parking.

Image 1 – Overflow car park with 10 spaces



2.4. MOBILISATION

All equipment, plant and materials will be delivered to site using the approved traffic routes as per the Phase 6 CTMP.

All HGV's and abnormal loads will drive directly to site and will not stop / wait on the public highway.

Approximately 10 Abnormal loads (AILs) are expected during the Phase 6 works to facilitate delivery of the lower landing levels, Alimak, headhouse and lagoon restoration works. Deliveries will be staggered throughout the duration of the Phase 6 works to reduce the number of AIL operating on the A171 and Egton Road between Lockwood Beck Site and Ladycross.

2.5. TRAFFIC AND PEOPLE

2.5.1. TRAFFIC MANAGEMENT

Condition 34 requires that a Construction Traffic Management Plan (CTMP) is to be prepared and submitted to NYMNPA prior to each phase of construction, for detailed traffic information please see the Phase 6 CTMP. Additional information for Traffic Management is also detailed in the Phase 6 Construction Environment Management Plan (CEMP).

2.5.2. PUBLIC PEDESTRIAN MANAGEMENT

Pedestrian management is to be controlled via both site security fencing and site access gate security; this is to be situated at the entrance to the main site haul road. Perimeter fencing along the site boundary was installed as part of Phase 2 works with improved site security facilities installed as part of Phase 5 works.

2.5.3. ACCESS

All construction traffic will use the existing main internal road to access the site. The access road is appropriately sized to allow for three HGVs to queue. In addition to the physical measures proposed, to prevent traffic having to wait on the highway or the potential for multiple to meet at the site access, the contractor will be required to provide a banksman and schedule deliveries and shift times.

Security will be stationed at the site access gates and all drivers will be required to have completed the appropriate driver induction before entering site. Access will only be authorised for deliveries / vehicles booked in for the day and with the appropriate access documentation. All deliveries will follow the onsite one-way traffic controls. Where required a banksman will be provided by the contractor if reversing or manoeuvring of vehicles is required.

In addition to assisting the contractor to manage the total numbers of daily HGV movements, the requirement for planning and scheduling deliveries will also assist the contractor in ensuring that deliveries can be spread throughout the working day.

The contractor will also be required to schedule shift times to try and avoid employees arriving and departing at the same time and to schedule deliveries outside of these hours.

2.5.4. LOADING AND UNLOADING

Loading and unloading of deliveries and materials on site will take place in designated areas dependent on works.

2.5.5. TRANSPORT HUB AND MASS TRANSPORT

Lockwood Beck site if practical will be utilised as a transport hub for shift workers travelling to Ladycross, other potential locations will be explored to reduce parking at the Ladycross Site.

Car sharing and minibuses will be promoted by subcontractors to limit the numbers of people driving / parking at Ladycross to remain within the committed numbers stated in the Phase 6 CTMP.

2.6. STORAGE OF PLANT AND MATERIALS

Materials will be stored in demarcated zones dependant on material use. The laydown area established during Phase 3 will be utilised for storage of bulk materials and material deliveries will be managed to reduce overall site storage requirements. Materials will also be stored in designated area as close to the works as possible.

All storage areas will be located on hardstanding appropriate to the plant and materials away from sensitive receptors. All COSHH and fuel will be stored in line with requirements and practices outlined in the Phase 6 CEMP.

As part of lagoon remediation works, the area will be capped with hardstanding and will be utilised for materials storage for future phases.

2.7. INTERNAL ACCESS ROUTES

Haul roads and internal access routes within the Phase 6 works scope will be demarcated and separated from pedestrian areas as per previous phases. All HGV and delivery vehicles will follow the internal one-way system route. Speed limits will be enforced as per the site limits.

2.8. LIGHTING COLUMNS

As part of the Phase 6 works additional lighting columns / fixed lighting will be installed on new structures for emergency use and safe access / egress in the area. Where additional temporary lighting is required to provide a safe working area and access and egress, it will be installed in line with the procedures detailed in the Phase 6 CEMP, where possible aiming to limit upward light spill, and utilising warm spectrum LED's.

2.8.1. TEMPORARY SHAFT HEAD HOUSE LOUVRES

As part of the Phase 6 works to install a temporary head house over the shaft, louvres will be fitted to the top tier and ground floor of the temporary structure. The temporary headhouse will be enclosed with cladding on all sides of the structure.

Reduced natural lighting will enter the head house due to the cladded exterior of the temporary structure, access routes (ground, 1st and 2nd levels) of the Alimak will need to be illuminated for safe access / egress. The top level of the head house will contain the emergency sheave and winch for the Alimak required in the event of a safe rescue system failure. The level will only be lit if maintenance works are required. It is anticipated the only external light emitted from the head house will be from the louvres and external access lighting for safe access / egress.

2.8.2. TALLY HUT

There will be lighting installed to the exterior of the tally hut at each entrance point. Lighting will be positioned to avoid light spill.

2.8.3. GROUT PLANT

The lighting towers installed in the working pad area as part of previous phases will be utilised to provide illumination where practicable. Fixed lighting will be required on the grout plant silos for safe working activities. Additional lighting will be kept to a minimum height where practicable.

2.9. WHEEL WASH

Vehicles entering site will stay on hardstanding already installed during Phase 3 works. No plant will travel off site other than specialised plant moving transport. All HGV's and plant exiting site will use the approved wheel washing facilities described in the approved Phase 3 CMS.

2.10. WATER MANAGEMENT

2.10.1. SURFACE WATER MANAGEMENT

The Water Treatment Plant (WTP) along with finalised attenuation pond and drainage network set up as part of the Phase 3 works will be utilised to manage site surface water. Some modifications may be carried out to the surrounding drainage around the lagoon footprint to facilitate the remediation works where appropriate. Modifications to the drainage will be carried out in accordance with a finalised design.

2.10.2. PROCESS WATER MANAGEMENT

All controls and mitigation for process water will be carried out in accordance with the controls outlined in the Phase 6 CEMP.

2.10.3. FOUL WATER MANAGEMENT

The foul sewerage from the welfare, offices and security cabin will be stored in appropriate cesspit installed during the Phase 3 works and removed by a licensed contractor to a permitted waste facility.

2.11. HOURS OF OPERATION

The lagoon remediation, concrete works (pours) and headhouse structure install for the Phase 6 works will be limited to dayshift operations. All other works associated with Phase 6 will be carried out utilising 24/7 operations, this will be limited wherever practical.

3. CONSTRUCTION METHOD STATEMENTS

3.1. WORKING PLATFORM

The working platform constructed during Phase 3 works was designed to withstand the loadings of all plant and equipment associated with the Phase 6 works. This may require some remediation following the various construction activities around the shaft.

3.2. POWER REQUIREMENTS

All electrical installations to required areas will be installed by STRABAG electrical team in accordance with the Phase 6 CEMP.

Additional emergency back-up generators will need to be installed onsite to facilitate emergency operations in the event mains supply would cut-off. The emergency generators would supply power to key site operations such as shaft lighting, emergency winches, ventilation systems and the site tally hut and communications cabin. The additional generators to be installed will be:

- 400 kVA generator to supply power to key shaft infrastructure
- 300 kVA generator required for the Alimak lift car system
- 250 kVA generator required for the temporary cable laying winch

The above generators will be in addition to the back-up generators installed as part of previous phases. The above generators will be situated on pre-constructed concrete bases as part of previous phase where practicable. Additional concrete pads may be required.

3.3. INSTALLATION OF SHAFT INFRASTRUCTURE

3.3.1. TALLY HUT

To facilitate safe access / egress and monitoring of the shaft operations a 40-foot tally hut cabin will be installed close the shaft location. A 200mm thick reinforced concrete slab will be constructed and sized to the footprint of the tally hut. Excavation of the current hardstanding to level the ground will be conducted with 22t excavator (or similar). Shutters, visqueen and mesh will be put in place prior to the ready-mix concrete pour directly from the concrete wagon. Once cured, tally hut to be lifted into place via Hiab delivery wagon or on site crawler crane. A 600mm deep trench will be excavated to connect the existing electrical supply to the new location for the 40ft tally hut.

Image 2 – Tally hut dimensions and layout



3.3.2. VENTILATION FAN SET-UP AND USE FOR SHAFT FIT OUT WORKS

The ventilation fan is critical to ventilate the shaft during normal operation and in an emergency during the shaft fit out works, temporary forced air will be required throughout the duration of the works. The temporary ventilation fan used for the shaft fit-out activities will be a twin GAL 7 contra rotating fan or similar unit. The fan will force fresh air from surface through a connecting piece funnel, into a fixed pipe that transfers the air to the edge of the shaft. Lay flat bagging will be fixed to the shaft wall and will transport the clean air to the base of the shaft.

The surface fan will be approximately 4.3m in length, 1m high and 1m wide. It will have a max rotational speed of approx. 3000rpm, with a required power of 400V.

Image 3 – Shaft ventilation fan as installed at the Lockwood Beck Site.



The surface fan will be pre-assembled on site and lifted onto its framework using a 135-tonne crane. The temporary fan will be positioned on the existing shaft concrete slab, with the location optimised to allow for the winch and surface fan to be in a linear position, to allow for no kinks or bends within the layflat bagging. The ventilation fan will be positioned to minimise noise impact on the neighbouring local receptors, orientation will be confirmed in final design based upon assessment.

3.4. INSTALLATION AND USE OF TEMPORARY CABLE LAYING SUB-BASES, WINCH AND EMERGENCY RESCUE WINCH

3.4.1. TEMPORARY CABLE LAYING SUB-BASES AND WINCH

Downshaft electrical services are required to provide electrical supply to the tunnel, shaft and Tunnel Boring Machine (TBM).

A 12 tonne Rotrex W12 or similar will be used for the cable laying works, the winch will be mounted onto a concrete slab.

The unit is an electro-hydraulic unit and is operated using a hydraulic power pack. The winch is to be in operation for the cable install works, estimated programme is 3 – 4 weeks. Power will be supplied by a 250kVA generator.

Once mounted, the cable will be reeled off the drum and down the shaft. Once in the correct position within the shaft, the cable will be clipped to preinstalled unistrut on the shaft wall. The cable will be routed below ground, within a 600mm deep trench from the headhouse into the substation (approx. 40m) or generator, dependent on site supply at the time. The trench will be excavated using a 22-tonne excavator (or similar). Once the cable is installed the subsequent cable drum will be placed on the winder. Upon completion of cable set-up, the winch will be removed from site. The remaining slab will be utilised for material storage in future for the TBM operations.

Image 4 – Potential electro-hydraulic winch to be used for cable laying works



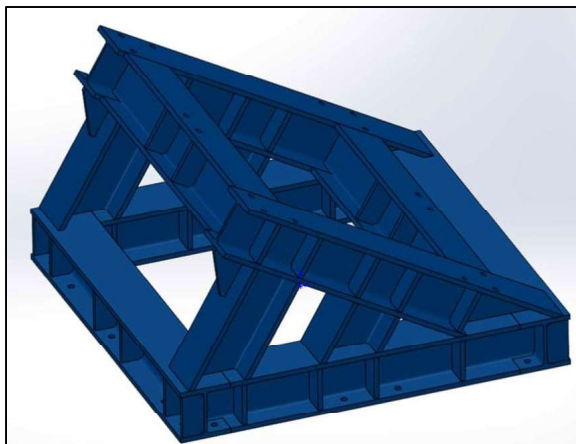
3.4.2. *INSTALLATION AND USE OF EMERGENCY RESCUE WINCH*

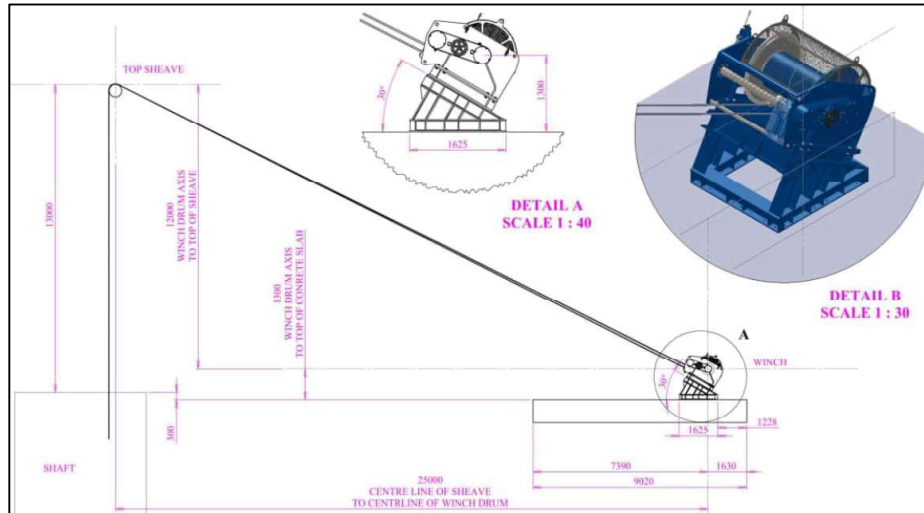
An integral part of the functioning headhouse is an operational emergency rescue winch for the Alimak. The emergency winch will be required for the shaft fit-out works and for the duration of the MTS tunnelling works. The emergency winch will provide safe egress from the shaft in the event of an emergency failure. The rescue winch will be a CWS-150 winch with Hydraulic power unit or similar.

The rescue winch will be powered by a 250 kVA generator. Where practicable, all services will be positioned on the existing concrete pad installed in Phase 5, however some concrete pad extensions may be required. The winch will be inclined at approx. 25 degrees to horizontal and will be mounted on a steel frame, with a wire rope connecting to the top floor of the headhouse.

The winch rope will be fed into the headhouse over a pulley system within the structure and locked off at shaft top for use in emergencies. The winch will only be used for emergency rescue and planned maintenance tasks. The winched and associated equipment will be housed within a small enclosure or similar that will be installed around the pad. The shelter will be approximately 2.5m high with an opening to allow for the winch cables.

Image 5 – Winch enclosure, CWS-150 winch, steel frame and set-up for the emergency rescue winch



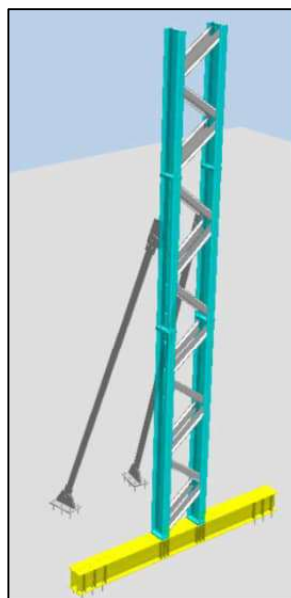


3.5. INSTALLATION AND USE OF ALIMAK AND ASSOCIATED INFRASTRUCTURE

3.5.1. INSTALLATION OF THE ALIMAK SUPPORT FRAME

The Alimak surface support frame will be connected to the duty crane (250tonne) and lifted upright into the pre-marked location. Once in position the framework will be fastened into position with 24 anchor bolts. The support frame will be approximately 12m in height and will be positioned within the cladded headhouse structure.

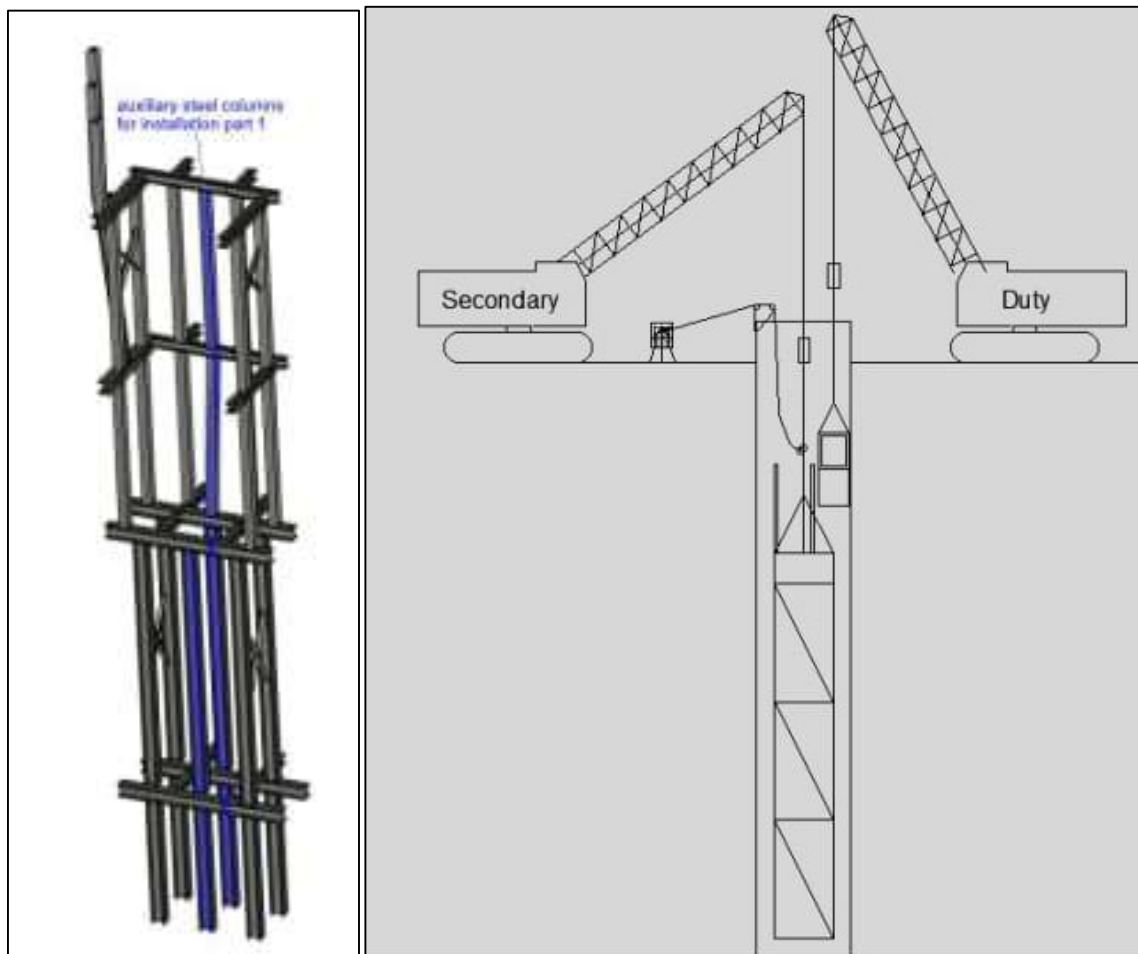
Image 6 – Alimak support frame



3.5.2. INSTALLATION OF LOWER-LEVEL LANDING PLATFORM

The lower landing level will comprise of two sections approximately 14m in height. The two sections will be lowered down the shaft individually. The sections will be connected to the secondary crane (130tonne) and winch and lowered into the shaft. The duty crane (250tonne) will be used to lower the man riding basket to follow the Alimak landing level section. Once at the base the section will be adjusted to position the load back to the shaft wall. The process will repeat to lower the section to the base of the shaft. Following positioning of the sections the mechanical team will be lowered to the base of the shaft to tighten bolts and ensure the section fastened to the shaft wall.

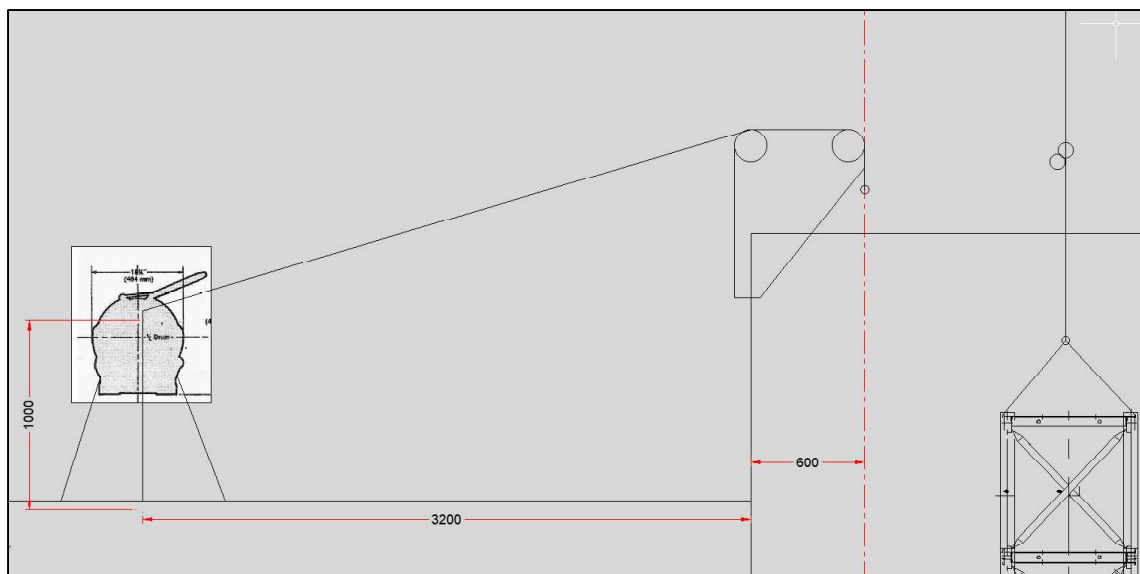
Image 7 – Alimak lower landing sections and install set-up



3.5.3. INSTALLATION OF ALIMAK MAST SECTIONS

To allow for the lowering of the 9m Alimak mast sections into the shaft, an air winch (or electrical alternative) must be installed at surface level. The winch will be bolted to the concrete slab and two (2) pulley wheels with a running line will be installed at a 600mm offset from the shaft intrados to allow the line to run free from the edges. The line will run directly from the winch up and over the pulley wheels and into the shaft.

Image 8 – Alimak mast sections winch and set-up



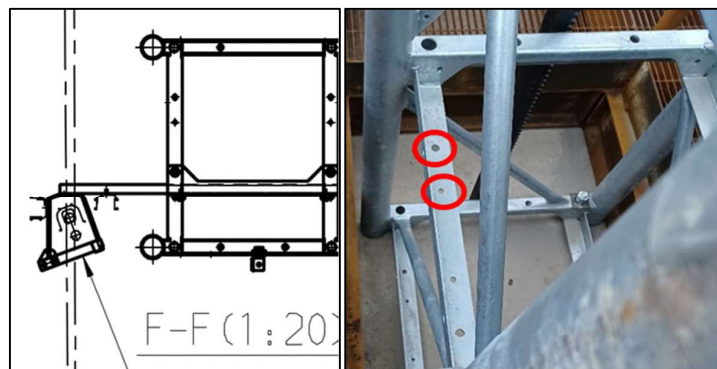
The first stage of the operation will be to take a steel template within the man basket and mark out the 8no stud locations within the shaft. The bracket is to be positioned 10mm offset from the pre-installed string line and 9m above the previously installed bracket. Template to be tethered to man basket (weight approx. 2kg). Once the 8no locations are marked, the Hilti studs are drilled.

The mast sections will be picked up and lifted into the shaft using the duty crane (250tonne). During this operation, there won't be anyone in the shaft. The mast is to be stopped 1ft above the previous mast section, The sections will be landed onto the appropriate pre-installed brackets and mast bolts tightened to secure the section to the shaft lining. The mast sections will be lowered into the shaft in 4.5m sections with a lower and upper section making up one 9m mast section. The process will repeat until all mast sections are installed for the shaft.

3.5.4. INSTALLATION OF ALIMAK CABLE GUIDE BRACKETS, TRAYS AND BASKET

The cable guide brackets will be installed approximately every 6m using M8 x 35mm bolts tightened with M8 nuts.

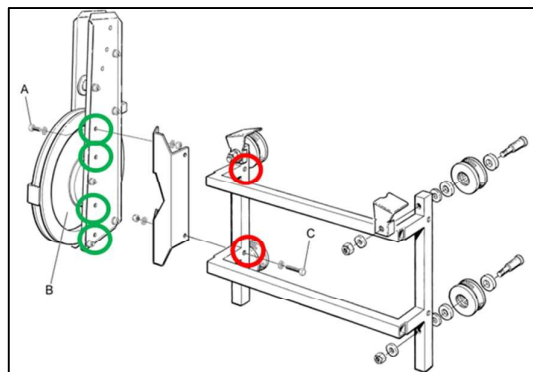
Image 9 – Alimak cable guide brackets and frame



The brackets for the cable trays will be installed onto every second cable guide bracket, using an M8 x 35mm bolt and M8 nut.

The cable wheel will be attached to the pre-installed brackets via four M8 25mm bolts. The part assembly will be attached to the trolley frame using M8 60mm bolts.

Image 10 – Cable wheel install set-up to pre-installed brackets

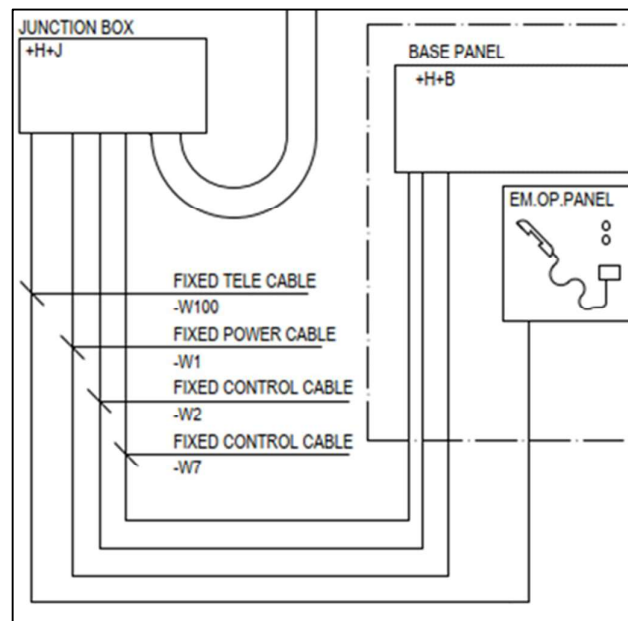


The trolley will be butted up to the front side of the mast so that the guide wheels are parallel to the mast and a play of 1.4mm is obtained between the roller and mast, when the other side is in close contact to the mast. Adjustment is made by turning the eccentric shafts of the rollers until the correct amount of play is obtained.

3.5.5. INSTALLATION OF ALIMAK FIXED CABLES

The lengths of cable needed for Alimak operations will be lowered from surface by the cable laying service winch from a cable frame winder. The first cable to be lowered down the shaft will be the fixed power cable. This will run from the midpoint junction box to surface. The winch line will be lowered into the shaft and fixings of cable to winch at max 10m centres. This process will be repeated until all the fixed power cable is completely tied to the winch line. The same process will be repeated for the lowering of two fixed control cables and a fixed telephone cable linked to the Emergency OP Panel on surface.

Image 11 – Fixed cable install layout to junction box



3.5.6. INSTALLATION OF ALIMAK LIFT CAR

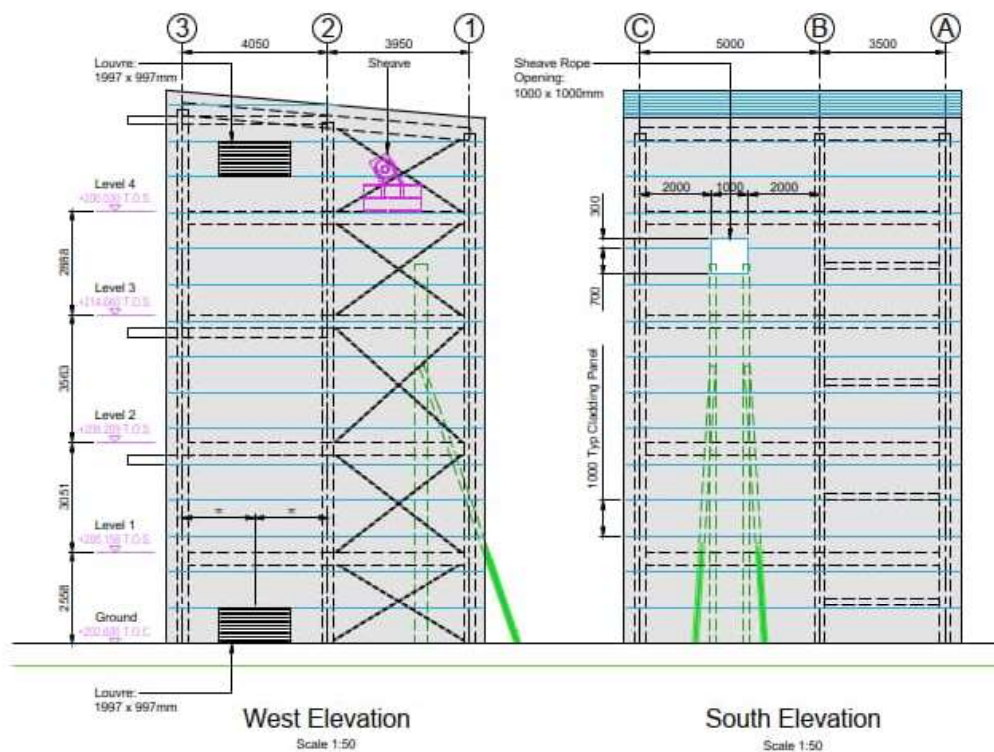
Once the headhouse is midway through install, see 3.6.1 for more detail, the two lift cars will be installed onto the mast. The Alimak cars will be lifted by the 130T crane and locked off in position within the headhouse. The headhouse structure must then be completed prior to the Alimak lift being commissioned.

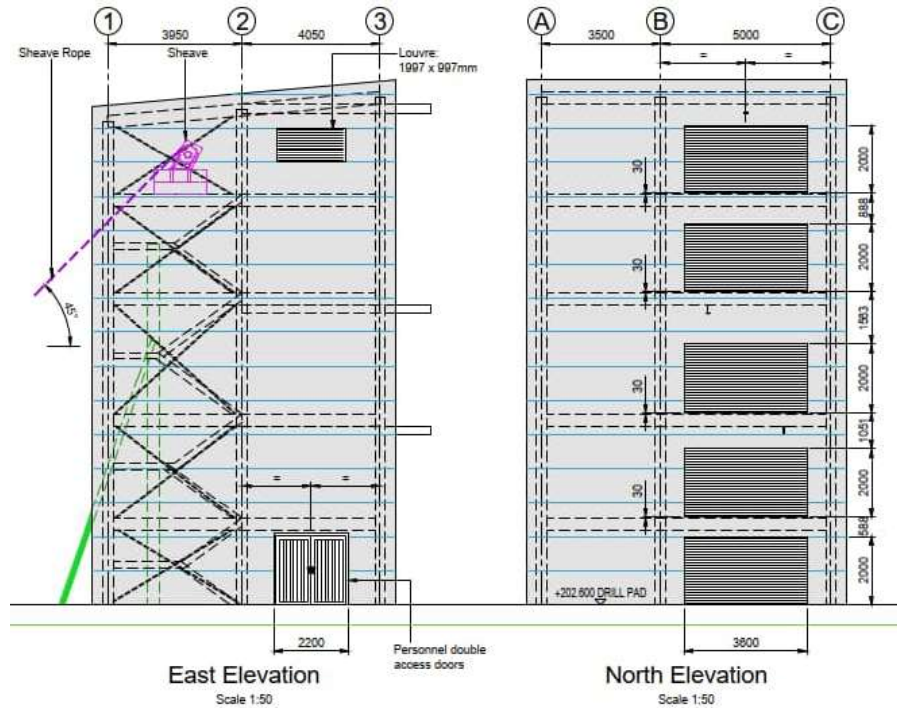
3.6. INSTALLATION OF HEADHOUSE AND ASSOCIATED INFRASTRUCTURE

3.6.1. HEADHOUSE INSTALL

The top of the shaft will be equipped with a cladded headhouse. The dimensions of the headhouse will be approximately 9m in width and length and 17m in height. The headhouse will have a roller shutter door for access / egress of plant and equipment needed to service the structure and Alimak, roller shutter doors will be positioned on each level. Access doors will be installed for access / ingress of the workforce. The Alimak structure will be installed within the Headhouse. The steel headhouse structure will be clad with panels to create a visual / noise barrier to the interior, the panels will be Brown Green RAL 6008.

Image 12 – Headhouse base design, steel structure and Alimak frame





3.6.2. INSTALLATION OF HEADHOUSE LOUVRES

Louvres will be installed within the cladding external structure of the Head House. The louvres are essential to allow airflow into the shaft. Up to 5 louvres will be fitted to the top level of the head house structure and additional louvres to the lower levels based on detailed design. The louvres will remain as part of the structure until the temporary headhouse is no longer in use.

Image 13 – Headhouse louvres



3.7. LAGOON RESTORATION WORKS

Following completion of dewatering of the site cuttings lagoon as part of Phase 6, restoration works to remove remaining solids and backfill the cuttings lagoon to topographic levels will be carried out. The cuttings lagoon and pit were designed to improve retention of solids during the shaft sinking operations. It is expected upon completion of dewatering operations, fines and bulk solids will remain settled within the cuttings pit and lagoon footprint.

The state of the solids will be assessed at the time with an appropriate process being used to remove the solids. Dependent on the consistency of the solids, chemical treatment may be used to solidify the material and disposal off site to a licensed waste facility. If the consistency of the solids is too wet for solidification, tankers may be utilised or alternative methods.

The lagoon liner and Geosynthetic Clay Liner (GCL) will be removed from the footprint of the lagoon to facilitate restoration / backfill works. The footprint of the lagoon will be backfilled in the formation in which the material was excavated, superficial deposits and subsoil in line with the Earthworks specification. The area will be capped with hardstanding and utilised for material laydown for Phase 6 and future works.

As part of the restoration works, material from the existing stockpiles will be lost. Material will be removed in a manner to ensure as far as practicable the remaining stockpiles still create an appropriate noise / visual barrier. Assessments were carried out as part of the Phase 6 Noise and Vibration Model (NVMP), which identified no additional noise mitigation is required for the Phase 6 works, see the report for further details.

Screening will be installed along the north of site to create visual mitigation between the site and caravan park to the east. The appropriate install will be decided closer to the commencement of the Phase 6 works with options including, shipping containers, re-engineering of remaining stockpiles, mature tree line and timber fence line this will be agreed with the LPA prior to installation.

3.8. GROUT PLANT INSTALL AND USE

3.8.1. INSTALLATION OF UNITS

In preparation for future phases of work for MTS tunnelling operations the grout batching plant from LWB will be transferred to LDX. The pre-existing slab used for the smaller grout plant or the muck bin utilised in shaft operations will be used to facilitate the tunnel batching plant. The slabs will need to be modified and extended to ensure they are fit for purpose.

The set-up will comprise of four silos approximately 12m in height needed for storage of the bentonite and cement.

The mixer unit will have a footprint of approximately 2.5m by 7.5m and the grout pump will have similar dimensions of 2.5m by 7.5m. The height of these units will be approximately 2.5m.

All the units will be painted Brown Green (RAL 6008) or Juniper Green (RAL 160 20 10). Two heated containerised units will be installed close to the batching plant to appropriately store the MAPEI System 1 IBC's (grout mix retarder). The containers will be 6 m long x 2.5m wide x 2.6m high and painted Brown Green (RAL 6008) or Juniper Green (RAL 160 20 10).

The batching plant silos, mixing tank, pump and heated container units will be lifted into position using the secondary crane (130tonne). The units will be orientated on the pad to minimise noise emissions and reduce visual impacts. The NVMP noise assessment concluded that the noise attenuation wall installed in Phase 5 will provide adequate mitigation for the grout plant operations, see the report for further details. Further mitigation will be assessed following install if required.

Image 14 – Grout batching plant silos



3.8.2. WASTE GROUT MANAGEMENT

Waste grout produced during batching plant operations will be initially discharged to the on-site weir pit and/ or agitated tank. The solids from the waste grout will be removed and placed into a designated storage cell for solidification or dewatering by a dedicated unit (filter press, screw press etc.) or similar. The dirty water separated from the solids stream will be discharged down the shaft and into the tunnel wastewater line. All materials will be removed from site by a licensed waste carrier and disposed of under an appropriate permit at a licensed disposal site.

4. PLANT & EQUIPMENT

All proposed plant and equipment to be used during the Phase 6 works are detailed in **Table 4-1** and **Table 4-2**. Details of each main scope activity plant has been provided with proposed plant models where the information is available. The Models of plant may change closer to the time of the works based upon supply and final design requirements.

Table 4-1 Plant use for the Phase 6 works

Description	Model	Loading per activity
Activity 1 - Installation of shaft infrastructure including tally hut, communications and ventilation fan		
Install Plant & Equipment		
130T mobile crane	Liebherr LR1130	100.00%
250T mobile crane	Liebherr LR1250	100.00%
Operations Plant & Equipment		
Ventilation fan	Korfmann GAL7	100.00%
Tally Hut (general ops use)	Procomm 40ft container	100.00%
Activity 2 - Installation of cable sub-bases, winch and emergency winch		
Install Plant & Equipment		
Tracked Excavator 20T	Hitachi ZX225USRLC	80.00%
Roller Vibrator	HAMMM BW120	80.00%
Dumper Truck 20T	Bell B20E	80.00%
Telehandler 5T	Manitou MT1840	50.00%
Concrete Pump	M36 - Mobile concrete pump	25.00%
Operations Plant & Equipment		
250 kVA emergency generator	JCB BCRV 250-50/60 E3A	100.00%
Cable laying Winch	12 Tonne Rotrex W12	100.00%
Activity 3 - Installation of Alimak and associated infrastructure		
Install Plant & Equipment		
130T mobile crane	Liebherr LR1130	80.00%
250T mobile crane	Liebherr LR1250	80.00%
Operations Plant & Equipment		
Alimak	Alimak SE 1000 FC	50.00%
Activity 4 - Lagoon Backfill and Restoration		
Operations Plant & Equipment		
Tracked Excavator 20T	Hitachi ZX225USRLC	80.00%
Tracked Excavator 30T	Hitachi_ZX350LC-6	80.00%

Description	Model	Loading per activity
Dozer	CAT D6	25.00%
Dumper Truck 20T	Bell B20E	50.00%
Dumper Truck 20T	Bell B20E	50.00%
20T 8-Wheeler Tipper	Volvo FM420	80.00%
Activity 5 - Installation and use of temporary shaft head house and associated services		
Install Plant & Equipment		
Crane 135T	Liebherr LR1130	80.00%
Crane 250T	Liebherr LR1250	80.00%
MEWP	Artic Boom SJ63AJ	80.00%
Operations Plant & Equipment		
Alimak	Alimak SE 1000 FC	80.00%
Activity 6 - Installation and use of grout plant and associated services		
Install Plant & Equipment		
Tracked Excavator 20T	Hitachi ZX225USRLC	80.00%
Roller Vibrator	HAMMM BW120	50.00%
Dumper Truck 20T	Bell B20E	50.00%
MEWP	Artic Boom SJ63AJ	50.00%
Mobile Welding Unit		80.00%
130T mobile crane	Liebherr LR1130	50.00%
Operations Plant & Equipment		
Mixer Unit		50.00%
Agitator		80.00%
Screw Compressor	SCR40EPM within 20ft container	80.00%
Grout pump		80.00%
Activity 7 - Installation of emergency back-up generators		
Install Plant & Equipment		
130T mobile crane	Liebherr LR1130	50.00%
Telehandler 5T	Manitou MT1840	50.00%
Operations Plant & Equipment		
300 kVA emergency generator (emergency winch)	JCB BCRV 300-50/60 E3A	50.00%
400kVA generator (Shaft fit-out)		50.00%
250kVa generator (cable laying winch)		50.00%

Description	Model	Loading per activity
Activity 8 - Construction of temporary overflow car park		
Install Plant & Equipment		
Dozer	CAT D6	50.00%
Roller	HAMMM BW120	50.00%
Tarmac Paver		50.00%
Tracked Excavator 20T	Hitachi ZX225USRLC	50.00%
General Site use		
250kVa generator (Welfare) (Mains)	YorPower	50.00%
60kVa generator (Workshop)	SDMO	50.00%
60kVa generator (Siltbuster) (Rain Dependant)	SDMO	50.00%
60kVa generator (Wheelwash)	SDMO	50.00%
ProComm Cabins (welfare ops)		50.00%
4" Supersilent Pump x 6 (Rain Dependant)	Tsurumi Pump HS Series and Selwoods S100	80.00%
Vibrating poker		50.00%
Static Fuel Bowser	Cross Plant Hire	50.00%
Lighting Tower x 12		50.00%
Towable Jet Wash	Sunbelt BBW20KPE	80.00%
Towable Water Bowser 7000l	Cross Plant Hire	50.00%
Wheelwash	Ecowash_Extra	80.00%
Siltbuster (Rain Dependant)	HB50M (120m ³ /hr)	50.00%
Tracked Excavator 20T	Hitachi ZX225USRLC	80.00%
MEWP	Artic Boom SJ63AJ	50.00%

4.1. CRANE OPERATIONS

The install activities included within the Phase 6 scope of works will require the use of either a 135 tonne or 250 tonne crawler crane dependant on loading requirements. The two cranes will be in use for a high proportion of the Phase 6 install activities and will remain on site for the duration of the works. The max boom height for the cranes will be approximately 35m, where practicable the masts will be lowered when not in use.

An additional smaller 60 tonne crane or HIAB may be utilised for smaller lifting activities. These will be hired in as and when required.

5. HAZARDOUS MATERIALS AND SUBSTANCES

The following hazardous materials are foreseen to be used during construction of site works activities listed within this document. This list may not be exhaustive, individual Risk Assessment and Method Statements will identify the hazardous materials and a specific COSHH Assessment will be included within the Safe System of Work (SSOW) documentation.

- Concrete / Cement
- Grout
- Hilti Hit
- Diesel
- Petrol
- Oils and Greases (Plant Maintenance)
- Spray Paint (Setting out)
- Mould oil / release agents
- Bentonite (rout mix)
- MAPEI CBS System 1 (Retarder for grout mix)

6. RELATED DOCUMENTS AND REFERENCES

GENERAL ARRANGEMENT - PHASE 6 – LADYCROSS - 40-STC-LC-2100-PA-22-20117

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN - PHASE 6 - CONDITION 93 –
LADYCROSS - 40-STC-LC-2100-EN-PL-00028

NOISE & VIBRATION MANAGEMENT PLAN - PHASE 6 - NYMNPACONDITION 18 (ROYAL
HASKONINGDHV) – LADYCROSS - 40-STC-LC-2100-EN-PL-00029

CONSTRUCTION TRAFFIC MANAGEMENT PLAN - PHASE 6 - NYMNPACONDITION 34
(ROYAL HASKONINGDHV) – LADYCROSS - 40-STC-LC-2100-LG-PL-00006

7. DEFINITIONS AND ABBREVIATIONS

CMS – Construction Method Statement

RAMS – Risk Assessment and Method Statement

MPA – Mineral Planning Authority

EIA – Environment Impact Assessment

NYMNPAA – North York Moors National Park Authority

AIL – Abnormal Indivisible Load

CTMP – Construction Traffic Management Plan

HGV – Heavy Goods Vehicle

COSHH – Control of Substances Hazardous to Health

WTP – Water Treatment Plant

CEMP – Construction Environment Management Plan

NYMNPA
02/03/2023



Project Title / Facility Name:
Woodsmith Project

Document Title:
**CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN - PHASE 6 -
CONDITION 93 - LADYCROSS**

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- 2. Reviewed – Accepted As Noted, Work May Proceed, Revise & Resubmit On: 24 Feb 2023 11:38
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**WOODSMITH PROJECT
(788.5030)**

**CONSTRUCTION
ENVIRONMENTAL
MANAGEMENT PLAN – PHASE 6
– CONDITION 93 – LADYCROSS
PLANTATION /
40-STS-LC-2100-EN-PL-00028**

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D (PLA)	23/02/2023	W Hodgson	C Thomas	C Eddington	Final Issue

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1. INTRODUCTION

1.1. PURPOSE OF THE DOCUMENT

In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to the North York Moors National Park Authority (NYMNP) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning permission was subsequently granted in 2015 subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA.

Anglo American is constructing a Mineral Transport System (MTS) tunnel, as part of the wider Woodsmith Project. The tunnel will be used to transport polyhalite from the Woodsmith Mine site to the Material Handling Facility (MHF) at Wilton, Teesside. Safe and efficient construction and operation of the tunnel requires the construction of a shaft at Ladycross Intermediate Shaft Site (Ladycross) to provide access to the tunnel.

This Construction Environmental Management Plan (CEMP) has been prepared on behalf of Anglo American for the Phase 6 Works at Ladycross (as described in **Section 1.2** below).

This CEMP has been prepared to discharge condition 93. Subsequent CEMPs will be prepared for future phases of works. This CEMP covers work carried out in Phase 6.

Table 1 - 1 Condition NYMNP-93: Construction Environment Management Plan

NYMNP-93 Description	Compliance with Condition NYMNP 93
<p>Prior to the commencement of each Phase of Construction in accordance with the approved Phasing plan at either Doves Nest Farm or Lady Cross Plantation, an updated CEMP shall be based on the approved Construction Method Statement (CMS) and should be submitted and approved in writing by the MPA in consultation with the Environment Agency in respect of the area concerned.</p>	<p>This version of the CEMP is for Phase 6 as defined in Section 1.2 below.</p> <p>Earlier versions of the CEMP were produced for preceding works.</p>
<p>The size, location and design of any site compounds, including how any potentially polluting materials will be stored to minimise the risk of pollution</p>	<p>Section 3 and Section 11</p> <p>Phase 6 Construction Method Statement</p>
<p>An incident Response Plan to deal with any pollution that may occur during the course of construction;</p>	<p>Section 12</p>

NYMNP-93 Description	Compliance with Condition NYMNP-93
A protocol to deal with contaminated ground, should this be encountered, to ensure protection of water resources;	Section 10
Details of how surface water run-off shall be passed through a settlement facility of settlement facilities prior to being discharged into any watercourse or soakaway;	Section 9.1
Plant and wheel washing including that it shall only be carried out in a designated area of hard standing at least 10 metres from any watercourse or surface water drain and that washings shall be collected in a sump, with settled solids removed regularly and water recycled and reused where possible;	Section 3.10
A scheme for the recycling/disposing of waste resulting from demolition and construction works;	Section 11
Storage of waste not covered by the Mine Waste Directive;	Section 11
Measures to control glare from in-site lighting;	Section 3.6
Measures to manage deliveries by HGV including routing and timing for deliveries and details of the penalty system for breaches of the agreed control;	Section 4
Temporary Traffic Management	Section 4
The provision of a Dust Management Plan relating to Phase 1 of the construction period (earthworks and bund formation) and Polyhalite handling and stockpiling to include dust generation modelling so as to identify	Section 6 Phase 6 Emissions to Atmosphere Construction Phase Dust Management Plan

NYMNP-93 Description	Compliance with Condition NYMNP 93
<p>sensitive receptors; likely dust generation and its disposition during the construction Phases and operation over time and under different weather conditions; 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. 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. The monitoring arrangements will include dust deposition or dust flux or real-time PM₁₀ continuous monitoring locations; baseline dust monitoring at least three months before construction commences; 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;</p>	
<p>In the event that there is insufficient clay with the Lady Cross Plantation site to form 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 material, and how adverse effects on the water environmental would be avoided;</p>	<p>Phase 6 Construction Environment Management Plan</p>
<p>How the requirements of the approved CEMP will be disseminated to all relevant</p>	<p>Section 2.2</p>

NYMNP-93 Description	Compliance with Condition NYMNP-93
staff/contractors throughout the construction period;	
The location of the site notice board;	Section 2
A scheme for parking, loading, unloading during construction;	Section 4 Phase 6 Construction Traffic Management Plan
A scheme for security and lighting during construction;	Section 3.1 and 3.6
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;	Section 3.8
Contingency proposals for if fuel cannot be delivered for the generators, e.g. due to adverse weather;	Section 3.8
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 one year, and unexpected hazardous waste stored for less than six months, including measures to prevent the dispersal of dust, leachate and surface water run-off;	Section 11
Precautionary Method of Working for Site Clearance (PMWSP) which shall be submitted to and agreed in writing by the MPA prior to commencement of Preparatory Works and	Section 7 Attachment C – Precautionary Method of Working

NYMNP-93 Description	Compliance with Condition NYMNP 93
shall be adhered to thereafter. The PMWSP 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;	
Alarms fitted to mobile plant and vehicles for the purposes of warning pedestrians of their movements;	Section 5

Additional conditions addressed in this CEMP are detailed in **Table 1 - 2**.

Table 1 – 2 Additional relevant conditions

Condition	Topic	Compliance with Condition
NYMNP-18	Noise and Vibration Management	Section 5 Phase 6 Noise and Vibration Management Plan
NYMNP-34	Construction Traffic Management	Section 4 Phase 6 Construction Traffic Management Plan
NYMNP-42	Access Arrangements	Section 3 Previous Phase 2 Construction Environment Management Plan and Phase 6 Construction Method Statement
NYMNP-52	Protected Species	Section 7.1 Phase 3 Protected Species Management Plans
NYMNP-57	Landscape and Ecological Management	Section 7.3 Phase 3 Landscape and Ecological Management Plan

Condition	Topic	Compliance with Condition
NYMNPA-59	External Lighting	Section 3.6
NYMNPA-65	Temporary boundary treatments	Section 3
NYMNPA-68	Temporary Structures	Section 3 Phase 6 Construction Method Statement
NYMNPA-70	Vegetation retained & clearance	Section 7.2 Construction Phase Arboricultural Method Statement
NYMNPA-76	Soil Management Plan	Section 10 Phase 3 Soil Management Plan
NYMNPA-88	Hydrogeological Risk Assessment	Section 9 Phase 5 Hydrogeological Risk Assessment
NYMNPA-90	Groundwater Management	Section 9
NYMNPA-92	Plant and Vehicle Management	Section 4 Phase 6 Construction Vehicle and Plant Management Plan
NYMNPA-95	Written scheme of Archaeological Investigation	Section 8 Phase 2 Written Scheme of Investigation for an Archaeological Watching Brief

This document details only the additional activities required for Phase 6 at Ladycross associated with the Anglo American Woodsmith Project. Updates to this plan will be prepared for subsequent phases and following any design or method changes. The NYMNPA, as well as the Environment Agency and Natural England agreed that they support this approach in meetings held in April 2016.

1.2. SCOPE OF WORKS

The Phase 6 scope of works, comprises:

- Installation of shaft infrastructure including tally hut, communications and ventilation fan;
- Installation and use of temporary cable laying sub-bases, winch and emergency rescue winch;
- Installation of Alimak and associated infrastructure;
- Backfill of the Lagoon;
- Installation and use of temporary shaft head house and associated services;
- Installation and use of grout plant and associated services;
- Installation of emergency back-up generators; and
- Construction of temporary overflow car park including tarmac hardstanding for an additional 10 car parking spaces.

A site plan is provided separately.

1.3. SCOPE OF THIS DOCUMENT

This CEMP details how the Phase 6 works will be planned, monitored and managed in an environmentally responsible manner. The document outlines the management framework for the environmental requirements, commitments, and performance targets associated with the planning and implementation of Phase 6 of the project.

The CEMP refers to several management plans, which have been prepared to discharge a number of planning conditions. Collectively these plans incorporate all mitigation measures relevant to Phase 6.

The Phase 6 CEMP should also be read together with the documentation listed below.

Information in these documents is summarised in this CEMP where appropriate:

- Phase 6 Construction Traffic Management Plan (40-STC-LC-2100-LG-PL-00007)
- Phase 6 Noise & Vibration Management Plan (40-STC-LC-2100-EN-PL-00030)
- Phase 3 Landscape and Ecological Management Plan (40-STC-LC-2100-EN-PL-00014)
- Phase 6 Emissions to Atmosphere (40-STC-LC-2100-EN-PL-00031)
- Phase 3 Surface Water Management Plan (40-STC-LC-2100-PA-PL-20102)
- Phase 6 Construction Method Statement (40-STC-LC-2100-CN-MS-00007)

-
- Phase 2 Archaeological Watching Brief Written Scheme of Investigation (40-COT-LC-8324-EN-PL-00002)
 - Phase 3 Soil Management Plan (40-STS-LC-2100-EN-PL-00007)
 - Phase 5 Hydrogeological Risk Assessment (40-STS-LC-2100-EN-RA-00004)
 - Phase 3 Surface Water Drainage Scheme (40-STS-LC-2100-PA-22-20107)
 - Construction Phase Dust Management Plan (40-STS-LC-2100-EN-PL-00015)
 - Construction Phase Arboricultural Method Statement (40-STS-LC-21-CN-MS-00003)
 - Phase 6 Construction Vehicle & Plant Management Plan (40-STS-LC-2100-LG-PL-00006)

This CEMP will remain a live document, being reviewed and updated in consultation with the appointed contractor(s) or sub-contractor(s) as required. Each of these updated CEMPs will be submitted to NYMNPA for approval prior to the start of each phase of works.

2. ENVIRONMENTAL MANAGEMENT FRAMEWORK

2.1. STRUCTURE OF RESPONSIBILITIES

This CEMP addresses those environmental matters within the responsibility of Anglo American and the Contractors engaged on its behalf to deliver the Phase 6 construction works. While overall responsibility for compliance with environmental requirements will remain with Anglo American, the Contractors working on site are accountable for undertaking the works in line with the requirements of this CEMP as well as all legal and other requirements imposed via permits and licenses.

2.2. TRAINING, AWARENESS AND COMPETENCE

2.2.1. INTERNAL COMMUNICATION

All staff and sub-contractors working on site will be required to attend a site induction prior to commencing work. This will cover the key environmental aspects relating to the project and the roles and responsibilities of individuals.

Toolbox talks will be undertaken by the Environmental Manager or other nominated personnel throughout the project. The aim will be to communicate information to all staff and serve to educate, prompt and remind them of their responsibility to protect the environment during works.

Monthly progress meetings will be used to disseminate the results of monitoring and audit reports. At these meetings, a review of the environmental performance throughout the site to date will be undertaken, and any improvements required during the Phase 6 works will be identified. Details of where sustainable approaches to works activities have been implemented or developed as the work proceeds will also be discussed and recorded. Their suitability for implementation at other areas of the site will be considered and applied where appropriate. Decisions about amendments required to the processes and procedures will also be agreed.

2.2.2. EXTERNAL COMMUNICATIONS

Anglo American will lead communication with members of the public, including adjacent landowners, local residents and businesses in line with the Community Stakeholder and Engagement Framework (CSEF) see **Attachment A**.

The CSEF includes provision for a quarterly Liaison Group Forum meeting, which are open to members of the public to attend.

2.3. MONITORING OF COMPLIANCE

All Phase 6 construction works will be supervised by the Contractor's managerial staff with the support of members of their teams on a daily basis. The Contractor's managerial staff will receive a briefing from the Contractor's Environmental Manager to ensure that they are aware of the environmental requirements. The briefing will also ensure that they are able to assess whether the environmental requirements are being implemented properly.

Procedures relating to environmental management and monitoring of environmental performance identified within the CEMP will be subject to inspections by the Contractor at least once every week, with oversight and audit by the Anglo American Environmental Team. Records of inspections, audits and overall environmental performance will be submitted to Anglo American.

2.4. COMPLAINTS PROCEDURE

The implementation of the systems and procedures to protect the environment will effectively reduce or remove the risk of an environmental incident and/or exceedance of established thresholds. However, complaints may still be received and in this event the Complaints Procedure will be implemented, as detailed in **Attachment B**.

3. DESCRIPTION OF SITE

The following section seeks to address the requirements of planning conditions 65 and 68, providing details for the sites temporary boundary treatments, temporary compounds and structures that will be used as part of Phase 6 works. Most of the site set-up will have been completed as part of the previous phases of works. Only small changes will be made to the existing site set-up as detailed in the below sections.

3.1. FENCING AND SECURITY OF THE SITE

Perimeter fencing will be installed around the shaft works area as a demarcation zone. The Automatic Number Plate Recognition (ANPR) system installed as part of the site access gate during the previous phase will be used to record and track employee access to site.

Site access and controls established in previous phases will be utilised for site access and security during the Phase 6 works. Further controls for site access are detailed in the Phase 6 CMS.

3.2. SITE LAYOUT AND COMPOUNDS

The site layout and compounds are detailed in the Phase 6 Ladycross Plantation General Arrangement Plan and the Phase 6 Construction Method Statement (CMS).

The working platform constructed during Phase 3 works was designed and constructed to withstand the loadings of all plant and equipment associated with the Phase 6 works.

3.3. AREAS OF HARDSTANDING

3.3.1. CONCRETE/SLABS

To facilitate the install of temporary units for the Phase 6 works, additional reinforced concrete slabs will be required dependent on load capacities. Existing concrete pads / slabs will be utilised where practicable, the below provides details of maximum concrete slabs required during the Phase 6 works:

- Tally hut – total surface area 52m², length 4m and width 13m
- Cable laying winch and back-up generator - total surface area 50m², length 5m and width 10m
- Emergency rescue winch and back-up generator- total surface area 50m², length 10m and width 5m

- Muck away pad extension (repurposed for tunnel grout batching plant) – total surface area approximately 300m², length 30m and width 10m
- Emergency Generator Pad – total surface area 150m², length 15m and width 10m

The above dimensions are indicative sizes and are subject to change based upon final design requirements.

3.3.2. *STONE / AGGREGATE HARDSTANDING*

No changes will be made to the existing stone / aggregate hardstanding detailed as part of previous submissions.

Additional stone hardstanding will be placed on the backfilled lagoon area to protect the underlying subsoils.

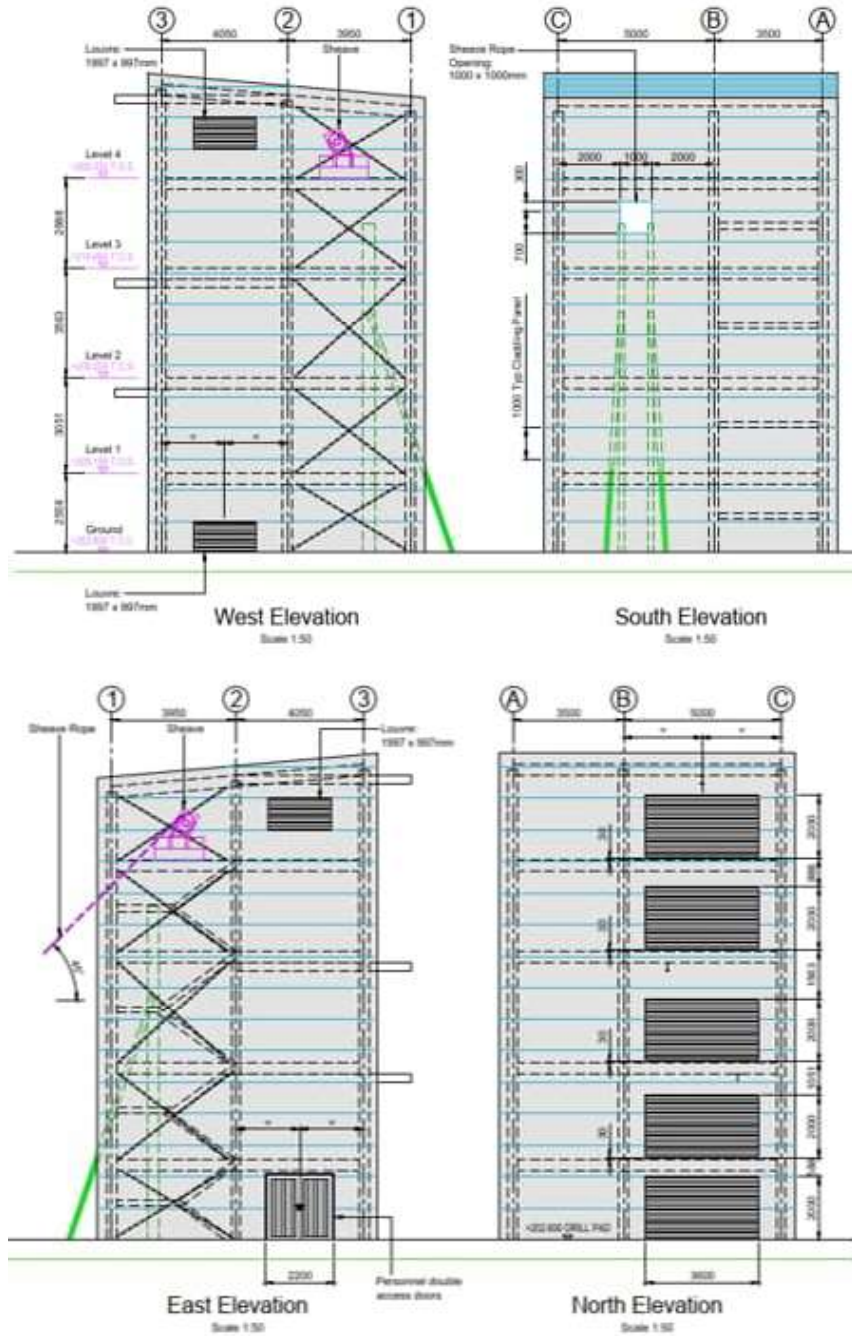
3.4. EXTERNAL TEMPORARY STRUCTURES

As part of the Phase 6 scope of works several external structures will be installed in preparation for tunnelling operations as part of future phases. Below details of colour, footprint and heights are provided. For further details of each structure refer to the Phase 6 Construction Method Statement (CMS) and Phase 6 General Arrangement Drawing. Overall sizes and dimensions will be as detailed below, minor changes to structure may be implemented as part of final design.

3.4.1. *HEADHOUSE*

To accommodate installation of the Alimak lift car, ventilation and winding services for the shaft a 15m tall headhouse structure will be erected. The headhouse structure surface area dimensions will be 9m x 9m and will be installed on top of the working pad installed during Phase 5. The structure will be cladded with 150mm thick panels or similar, to provide both noise and visual mitigation. The cladding will be painted Brown Green (RAL 6008) or Juniper Green (RAL 160 20 10). Three louvres will be installed on the West and East side of the structure for ventilation purposes with shutter roller doors fitted to the north side for easy access when lifting equipment into the headhouse.

Image 1 – Headhouse general arrangement



3.4.2. *GROUT PLANT & DEWATERING UNIT*

To facilitate tunnel operations a grout batching plant will be installed as part of the Phase 6 works. The existing muck away concrete pad will be extended to accommodate installation of the grout plant as shown in the Phase 6 General Arrangement Plan.

The set-up will comprise of four silos approximately 12m in height needed for storage of the bentonite and cement. The mixer unit will have a footprint of approximately 2.5m by 7.5m and the grout pump will have similar dimensions of 2.5m by 7.5m. The height of these units will be approximately 2.5m. All the units will be painted Brown Green (RAL 6008) or Juniper Green (RAL 160 20 10). Two heated containerised units will be installed close to the batching plant to appropriately store the MAPEI System 1 IBC's (grout mix retarder). The containers will be 6 m long x 2.5m wide x 2.6m high and painted Brown / Green (RAL 6008) or Juniper Green (RAL 160 20 10). An additional holding tank, baker tank or similar will be used as emergency water storage.

A dewatering unit will be set-up in close proximity to the grout plant set-up to minimise waste produced by the batching plant. The unit will consist of a 20ft containerised filter press 6 m long x 2.5m wide x 2.6m high or similar unit elevated approximately 6m high on a lego block structure or similar, a 6m long x 2.5m wide x 2.6m high mixing tank with chemical dosing and a chemical dosing container 3m long x 2.5m wide x 2.6m. Alternatively the existing cuttings pit may be re-engineered to provide adequate buffer capacity and chemical dosing area. All units will be painted Brown / Green (RAL 6008). Final orientation, set-up and requirements for further storage cells will be confirmed as part of final design.

3.4.3. *WINCHES*

Three winch systems will be utilised for the installation of the Phase 6 structures and shaft operations.

A temporary cable laying winch will be utilised for a period of approximately 4 weeks. The winch will be installed on a concrete pad as detailed in **Section 3.3**, with a standalone 250 kVA generator to supply power. The winch will be demarcated by a 6ft high palisade fence or similar.

A small air winch will be used to support the alimak mast section install. The winch will be placed on the existing drill pad and will be for short term use.

An integral part of the functioning headhouse is an operational emergency rescue winch for the Alimak. The emergency winch will be required for the shaft fit-out works and for the duration of the MTS tunnelling works. The winch will be installed with a standalone emergency back-up 300kVA generator. The winch will be inclined at approx. 25 degrees to horizontal and will be mounted on a steel frame, with a wire rope connecting to the top floor of the headhouse.

The emergency winch and generator will be installed on a concrete pad as detailed in **Section 3.3**. The units will be enclosed within a 2.5m high steel shelter. The shelter will be Brown / Green (RAL 6008).

Image 2 – Emergency winch and generator shelter



3.4.4. *TALLY HUT*

To facilitate safe access / egress and monitoring of the shaft operations a 40-foot tally hut cabin will be installed close the shaft location. The unit dimensions will be 12m long x 3m wide x 2.6m high. The unit will be painted Brown / Green (RAL 6008).

Image 3 – Tally hut general arrangement



3.5. UTILITIES

3.5.1. WATER SUPPLY

Raw water to facilitate site operations will be serviced by a 4" Yorkshire Water potable water supply. The potable water will provide services to both welfare facilities and for site process use.

Bottled water dispensers will be provided for site staff. Where required, dust suppression bowsers will also periodically be topped up via the water supply. Temporary tanks may be utilised for storage of water for site specific operations.

3.5.2. ELECTRICAL SUPPLY

A three-phased 415V electrical supply was installed during Phase 4 to power site operations. Where practical the main supply will power the Phase 6 activities.

Additional generators will be installed in Phase 6 to provide power where it is not practical to use the existing mains supply. Details of the additional generators are described in the Phase 6 CMS and Phase 6 Emissions to Atmosphere.

Where standalone generators are required, these will be super silent and installed in a manner to reduce noise impacts on local receptors. Further details for generators are supplied in the Phase 6 Emissions to Atmosphere. Practices to reduce noise impacts will include but not be limited to:

- Procurement of super silent generators with reduced noise impact,
- Positioning of generators during installation, and
- Noise attenuation fencing/panels installed around generators, where required.

3.6. WELFARE FACILITIES

The welfare facilities will remain the same as previous phases.

3.7. LIGHTING

The Phase 6 works will be illuminated, when necessary, through temporary, task-specific directional lighting. The additional cabins, workshops and grout plant area will be fitted with motion sensor controlled, discreet perimeter lighting for safe access and egress. Louvres will be installed on the headhouse for ventilation purposes, louvres will be kept to a minimum and positioned to reduce light spill as far as is practicable. Shutters on welfare buildings will be shut after nightfall to reduce light spill. Phase 6 works will be 24/7 works. Roller shutter doors at height in the headhouse will only be accessed during daylight hours to prevent light spill.

On-site exterior lighting will apply the following principles which will ensure that impacts on wildlife are minimised in accordance with 'Artificial Lighting and Wildlife' guidance¹:

- Task lighting will be used where appropriate,
- Lighting will be directed downwards (0 to 20 degrees where possible), with all beam angles below 70°,
- Lighting will be kept as low as is safe and practicable for the works taking place and kept at a maximum height of 4m,
- Lights will be switched off when not in use or will be motion sensor controlled,
- Where safe and practicable, British Standards and guidance from the Institute of Lighting Professionals in the document 'Bats and Artificial Lighting in the UK' (September 2018) (<https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>) will be followed where relevant, and
- All lighting will be directed to avoid light spill on to the perimeter woodland.

Where additional temporary lighting is required to provide a safe working area and access and egress, it will be installed in line with the above procedures, where possible aiming to limit upward light spill, and utilising warm spectrum LED's.

3.8. MATERIAL STORAGE

The type of material stored on site will determine the storage methodology adopted. Fuel and chemical storage areas will be located as far from all open drains and watercourses as practicable, with at least 10m from these locations. In addition, the storage areas will not be located near any open excavation of natural ground. Additional storage requirements will be implemented based upon the associated manufacturers Material Safety Data Sheet (MSDS).

The areas in which hazardous substances are stored will be clearly demarcated and within appropriate containerised units with integrated secondary containment.

All fuel will be stored within the onsite fuel tank installed during Phase 3 works. Specific areas on site will be designated for materials storage.

All non-polluting materials will be stored in designated areas, with surface water run-off draining to adjacent filter drains, surface swales and surface water drainage as detailed in **Section 10**. Penstocks and hydraulic brakes have been installed within the surface water drainage network, which will be closed in the event of a spill or detection of other contaminants. Details of site drainage and penstock locations are detailed in the Phase 3 Surface Water Management Plan and Phase 3 Surface Water Drainage Scheme.

Table 3 - 1 Material storage for Phase 6 works

Material	How it will be stored
Concrete (Wagon / truck loads)	Bulk concrete will be delivered and used straight from the concrete wagon.
Cement (small bags 25kg)	Small bags of cement will be stored on pallets with appropriate weatherproofing in a designated area away from high trafficked zones.
Cement (60 tonne silo)	Silos approved as part of Phase 6 works will be used to store grout and are installed with appropriate secondary containment.
Bentonite (60 tonne silo)	Silos approved as part of Phase 6 works will be used to store grout and are installed with appropriate secondary containment.
Diesel / Petrol (Bulk storage)	<p>Bulk storage of diesel/petrol will be stored in a designated refuelling area installed as part of Phase 3 works.</p> <p>A towable bowser with secondary containment will be utilised for refuelling of large plant. The bowser will be stored in an appropriate demarcated location.</p>
Oils and greases (Plant maintenance and site operations)	<p>Oils and greases will be stored in appropriate containers in segregated areas of site (COSHH container and workshops).</p> <p>COSHH assessment and MSDS will be assessed for further storage requirements.</p>
Bentonite (small bags 25kg)	Small bags of bentonite will be stored on pallets with appropriate weatherproofing in a designated area away from high trafficked zones.
Chemicals	Chemicals will be stored within appropriate container within the on-site COSHH containers.

3.9. FUEL OIL STORAGE AND REFUELLING ON SITE

3.9.1. STORAGE

Fuel will be stored within/on the refuelling area provided as part of Phase 3 works, it will be stored in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001, as follows:

Secondary containment will be provided for all surface oil and diesel tanks:

- For a single tank, the secondary containment will be at least 110% of the maximum storage capacity; and
- For two or more tanks in one secondary containment system, the secondary containment will be at least 110% of the biggest tank's maximum storage capacity or 25% of the total maximum storage capacity of all the tanks, whichever is the greater.

Storage must be more than 10m away from any watercourse or the surface drainage system. Static fuel tanks (such as those linked to generators) will be sited on sealed, level ground adjacent to the generators. All fuel bowsers will have tanks with integrated secondary containment that holds a minimum of 110% of the volume of the inner tank.

Spill kits will be stored adjacent to the storage areas and relevant staff will be trained in the use of such equipment in the event that spillages occur.

3.9.2. REFUELLING

All replenishment of tanks and containers and all re-fuelling of vehicles, plant and equipment shall take place within bunded, impervious hardstanding where practical. The refuelling area will be utilised to refuel all site mobile plant. The refuelling area comprises of an impervious hard standing area with containment French drains and drainage to an oil interceptor. A double bunded tank will be used for the storage of diesel and a further bunded IBC unit will be used to contain AdBlue. Toolbox talks regarding refuelling processes will be briefed to all relevant personnel.

For larger or stationary plant such as cranes and generators refuelling will be carried out in-situ on site. The following control measures will be implemented during refuelling processes:

- Supervision of all fuel deliveries;
- Checks carried out on delivery of fuels to ensure correct fuel is delivered;
- Ensure all valves on a bunded tank or secondary containment is closed when not in use;
- Any static fuel bowsers are fitted with automatic cut-off or trigger nozzles; and
- Never leave vehicle or plant unattended during refuelling.

Heavy plant undergoing in-situ refuelling will be located on the working pad area. As part of the Phase 3 works an impermeable Geosynthetic Clay Liner (GCL) was installed to minimise impact from any pollution incidents.

3.10. SITE HOUSEKEEPING

The implementation of a good site housekeeping policy is key to reducing the likelihood of accidents and environmental pollution incidents. Good housekeeping measures that will be implemented on site include:

- Keeping the site tidy;
- Segregating waste and removing it from site regularly;
- Maintaining all site facilities, including welfare facilities;
- Maintaining site roads, ensuring internal roads and those surrounding the site are kept clean;
- Ensuring plant and vehicles on site are well maintained;
- Ensuring all materials are stored appropriately;
- Undertaking regular inspections of all areas of the site to ensure housekeeping requirements are being fully implemented; and
- Ensuring that detailed records of these inspections, their findings and any mitigation required are kept.

The Site Supervisor will monitor the cleanliness of the road daily to ensure that it is free of dirt and debris. Road sweepers will be deployed to clean the roads as necessary, under instruction of the Site Supervisor.

3.11. WHEEL WASHING FACILITIES

The wheel washing facilities constructed as part of Phase 3 works will be utilised for wheel cleaning of all HGVs and plant exiting site onto the public highways. Traffic will be routed one way to ensure all vehicles required use the wheel washing facilities.

Regular maintenance of the wheel washing facility will be carried out in accordance with the manufacturers servicing specification. The washings shall be collected in a sump, with settled solids removed regularly and water recycled and reused where possible.

4. TRAFFIC

4.1. CONSTRUCTION TRAFFIC MANAGEMENT PLAN

The Phase 6 Construction Traffic Management Plan (CTMP) (40-ST5-LC-2100-LG-PL-00007) outlines control measures implemented for the Phase 6 works. This contains a range of general measures for the management of transport including:

- High occupancy travel for employees, including car-sharing, minibus pick up and utilising Lockwood Beck (LWB) as a transport hub, and
- All vehicles travelling to site using the designated routes only.

The CTMP also contains a Highway Communication Plan, which outlines how communication with the public, the planning and local authorities, and any other stakeholders will be undertaken.

The CTMP also specifies prohibited routes for construction vehicles. To support this, Prohibitive and Directional Signage will be shared with all delivery drivers. This signage was installed prior to the commencement of Phase 2 of the project as part of the Phase 1 Highway works and will be maintained throughout the construction period for Phase 6.

4.2. PARKING, LOADING AND UNLOADING

4.2.1. *PARKING AND LOADING*

4.2.1.1 **PARKING**

Parking will only be permitted within designated car parking areas and drivers will be required to display permits while parking on site. No access to the site by foot is permitted. A peak of up to 50 employees will be on site during Phase 6.

4.2.1.2 **LOADING AND UNLOADING**

Loading and unloading of deliveries and materials on site will take place in designated areas dependent on works.

Approximately 10 Abnormal Indivisible Loads (AIL) are expected during the Phase 6 works. Deliveries will be staggered throughout the duration of the Phase 6 works to reduce the number of AIL operating on the A171 and Egton Road between Lockwood Beck Site and Ladycross.

4.2.2. ACCESS

All construction traffic will use the existing main access road to access site. The access road is appropriately sized to allow for three HGVs to queue. In addition to the physical measures proposed, to prevent traffic having to wait on the highway or the potential for multiple to meet at the site access, the contractor will be required to provide a banksman and schedule deliveries and shift times.

Security will be stationed at the site access gates and all drivers will be required to have completed the appropriate driver induction before entering site. Access will only be authorised for deliveries / vehicles booked in for the day and with the appropriate access documentation. All deliveries will follow the onsite one-way traffic controls. Where required a banksman will be provided by the contractor if reversing or manoeuvring of vehicles is required.

In addition to assisting the contractor to manage the total numbers of daily HGV movements, the requirement for planning and scheduling deliveries will also assist the contractor in ensuring that deliveries can be spread throughout the working day.

The contractor will also be required to schedule shift times to try and avoid employees arriving and departing at the same time and to schedule deliveries outside of these hours.

5. NOISE AND VIBRATION

5.1. NOISE AND VIBRATION MANAGEMENT PLAN

The imposed noise limits for the Ladycross Plantation are 55dB LAeq¹hr during the day and 42dB LAeq¹hr in the evening (07:00-19:00 and 19:00-07:00 respectively). The Phase 6 works will comply with these limits. Noise monitoring will be carried out for the full duration of the Phase 6 works. A Phase 6 Noise and Vibration Management Plan (NVMP) (40-STC-LC-2100-EN-PL-00030) has been produced and provides further details regarding the mitigation, monitoring and controls to be implemented during the Phase 6 works.

6. AIR QUALITY AND DUST MANAGEMENT PLAN

During the Phase 6 works dust suppression measures will include:

- Damping down of road surfaces, road sweeping and potentially vehicle wheel washing will be utilised across the works area, as appropriate,
- Site fencing, barriers and other areas of dust accumulation will be kept clean using water spraying where there is the risk of dust accumulation. Any run-off will be filtered via the site surface water drainage system,
- Materials that have the potential to create dust problems will be removed unless they are to be re-used on site. Where possible these will be covered or contained in a fenced area,
- Seeding of all topsoil and subsoil bunds,
- Burning of waste materials will be prohibited, and
- Plant and vehicles used on site will be well maintained to minimise pollutant emissions.

6.1. DUST MANAGEMENT PLAN

Dust emissions can arise during Phase 6. Measures and controls to minimise dust emissions from Phase 6 are provided in the Construction Phase Dust Management Plan (DMP) submitted as part of Phase 3 to partially discharge condition 93. Daily inspections and monitoring will be undertaken by the contractors, in accordance with this procedure. Some of the dust management mitigation identified in the DMP is detailed in **Table 6-1** below. The Phase 6 Emissions to Atmosphere and Phase 3 CTMP provides further detail regarding the air quality and dust mitigation to be adopted during the Phase 6 works.

Table 6 - 1 Dust Mitigation

Source / Activity	Mitigation Measures
Construction Traffic	<ul style="list-style-type: none"> • Implement speed limit on internal roads • Dust suppression used on roads when dust emissions noted • Provide wheel washes to reduce dust on public highways • Sheeting of vehicles carrying dust generating materials • Regular maintenance of vehicles and plant

Source / Activity	Mitigation Measures
Compound Areas	<ul style="list-style-type: none">• Ensure areas used for welfare facilities and vehicle management (loading and unloading) are constructed of hardstanding• Sweeping / dampening down areas of hardstanding when required
Storage Areas	<ul style="list-style-type: none">• Grass seeding temporary earth bunds until re-use• Profiling stockpiles of dust generating materials• Covering dust generating materials, if practical• Dampening down facilities for stockpiles
Earthworks and Lagoon Backfill	<ul style="list-style-type: none">• Monitor earth moving works, especially in dry and windy conditions• Dust suppression in areas of noted emissions• Additional dust mitigation controls installed where required• Background dust monitoring to assess impacts

7. NATURE CONSERVATION

7.1. PROTECTED SPECIES AND PRECAUTIONARY METHOD OF WORKING FOR SITE CLEARANCE

Protected Species Management Plans (PSMPs) were produced for reptiles, birds, bats, badgers and water voles to partially discharge condition NYMNPA-52 for Phase 3. These remain applicable for the Phase 6 works, and the accompanying Precautionary Methods of Working will be applied. The measures detailed in these PSMPs will be implemented in Phase 6.

7.2. VEGETATION CLEARANCE

Utilities installation works will be carried out to avoid any Root Protection Zones (RPZ). An assessment by competent persons and consultation with the Project Ecologist will determine if any works impact on the peripheral tree line. Appropriate measures will be followed as outlined in the Arboricultural Method Statement (AMS) prior to any works commencing.

In the event trees require removal, pre-commencement checks for protected species will be carried out 48 hours prior to felling works. Further checks will be undertaken at three-day intervals while works are ongoing to ensure nesting birds have not returned.

7.3. LANDSCAPING AND ECOLOGICAL MANAGEMENT

A Landscape and Ecological Management Plan (LEMP) was produced during Phase 3 works to partially discharge condition NYMNPA-70. The management principles outlined in the Phase 3 LEMP are still applicable for the Phase 6 works.

8. ARCHAEOLOGY

Earthworks required for utilities installation will be carried out on previously surveyed areas of site. Therefore, the potential for interaction with archaeology is low. The principles set out in the Phase 2 Written Scheme of Investigation (WSI) will be applied to archaeology encountered during the Phase 6 works.

9. HYDROGEOLOGY, WATER QUALITY AND DRAINAGE

9.1. SURFACE WATER MANAGEMENT

As part of the Phase 6 works the full site surface water drainage network installed during the Phase 3 works will be adopted for surface water management on site. The Phase 3 Surface Water Management Plan (SWMP) and Phase 3 Surface Water Drainage Scheme provides further detail regarding the control measures and mitigation which will be adopted during the Phase 6 works.

Temporary site drainage will be installed following the backfill of the lagoon as required. The drainage will tie into the existing Phase 3 drainage network and will be installed to design requirements.

9.2. GROUNDWATER MANAGEMENT

The following section seeks to address the requirements of planning conditions 88 and 90, providing details for managing shallow groundwater during the Phase 6 works. The scope of works for Phase 6 has been reviewed and it was concluded no review is required to the existing Phase 5 Hydrogeological Risk Assessment (HRA).

Groundwater will be monitored and managed in accordance with the Phase 5 (HRA) and Phase 6 Construction and Operation Groundwater and Surface Water Monitoring Scheme.

During lagoon backfill works any short term ingress water from either shallow groundwater or surface water sources will be managed by pumping if required prior to placement and compaction of superficial deposits and subsoils. Water will be pumped into the site drainage network and managed in accordance with the Water Abstraction and Impounding (Exemptions) Regulations 2017 and the Phase 3 Surface Water Drainage Scheme.

9.3. SILT AND POLLUTANT MANAGEMENT

Silt and pollutant management remain as per the Phase 3 CEMP and SWMP.

10. SOILS AND CONTAMINATED LAND

As part of the Phase 6 works, there is no requirement to excavate topsoil or subsoil on site.

The existing engineering clay placed in the construction of the cuttings lagoon will be excavated as part of the lagoon remediation works. The clay will be tested and either removed from site by a licensed waste carrier or where required will be used as temporary noise attenuation bunds.

Superficial clay and subsoils will be placed within the lagoon excavation from the existing temporary stockpiles. All soil handling will be undertaken in accordance with the Soil Management Plan (ref. 40-STC-LC-2100-EN-PL-00007). The lagoon will be capped with stone hardstanding for use as a laydown area in future phases. Areas exposed from stockpile removal will be topsoiled to protect from erosion and reduce site run-off in future phases.

The control measures to be implemented for interaction with unidentified contamination is described within the Phase 3 CEMP, which remains applicable for Phase 6.

11. MATERIALS AND WASTE

A range of materials and waste materials will be stored on site, and these will be stored in a designated area on site. The areas used for storage of material have been planned to avoid excessive handling of material and to facilitate loading and unloading. Details of the measures taken to reduce potential pollution are detailed in **Sections 11.1 – 11.4**.

11.1. Waste Minimisation

Waste management practices will ensure that the waste will be managed in accordance with the Environmental Protection Act 1990 Part II: (Duty of Care); The Waste (England & Wales) Regulations 2011: and the Environmental Permitting (England & Wales) Regulations 2016 Waste Duty of Care requirements are met.

The national hierarchy for waste will be used as reference for management of all wastes produced on site:

Reduce: we will seek to minimise waste through design

Re-use: Wherever possible we will utilise waste exemptions to enable waste to be re-used both on and off-site.

Recycle: We will recycle material wherever technically, environmentally and economically practicable.

Recover: We will look to recover energy and material from waste (digestion, incineration, gasification etc.)

Dispose: We will look to avoid the disposal of waste to landfill and only use disposal as a last resort. Wastes will be minimised through adoption of the following procedures:

- Appropriate procurement of materials (volumes, and options to use recycled materials);
- Use of 'Just in Time' delivery of raw materials to ensure that raw materials (aggregate etc.) are not wasted or lost to the environment;
- Operation of a take-back scheme for excess materials when possible; and
- Adoption of energy management practices minimising use of plant and fuels.

11.2. MATERIALS AND WASTE STORAGE

Details of generic materials and waste stored on site are provided in the Phase 3 CEMP and are applicable for Phase 6.

Additional storage measures for materials used in Phase 6 not covered by previous CEMPs are detailed in **Section 3.8**.

11.3. LIQUID WASTE MATERIAL

11.3.1. WATER TREATMENT PLANT SLUDGES

Waste sludges will be produced during the operation of the onsite Water Treatment Plant (WTP). The sludges will be pumped to a sludge tank for holding. A licensed waste contractor will carry out collection and disposal of sludges where required.

11.3.2. OIL INTERCEPTOR OILS AND WATER

The oil interceptor will undergo regular maintenance and servicing based upon the specification outlined in the supplier guidelines and manuals. The silt removed from the silt trap will be collected and disposed by a licensed waste contractor. The oil will be collected and disposed by a licensed waste contractor.

11.3.3. CESSPIT FOUL SLUDGES

The cesspits installed as part of previous phases will undergo regular maintenance and servicing based upon the specification outlined in the supplier guidelines and manuals.

The foul sludge will be emptied from the tanks on a routine basis based upon site footfall and supplier recommendations. The tanks are fitted with high level alarms as an additional layer of safety.

11.4. GROUT PLANT WASTES

The grout plant following install will undergo initial testing and commissioning phases in preparation for tunnel operations in future phases.

As part of the grout plant infrastructure a containerised dewatering plant will be installed. The plant will consist of tanks and a dewatering unit (filter press or similar). The press will separate the waste into a 'clean' water stream and a dry filter cake. The dry filter cake will be removed from site by a licensed waste contractor to a disposal site with the appropriate license / permit. The water stream will discharge down the shaft and into the tunnel waste water system.

12. INCIDENT AND EMERGENCY PLANNING

Potential environmental issues 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 site induction and toolbox talks.

The emergency contacts list and 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.

All employees will be instructed to bring any environmental incidents they identify to the immediate attention of 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).

Environmental Emergency Preparedness Plans (EEPP) have been prepared specifying the actions to be undertaken in the event of an environmental emergency or a breach of the measures set out in the EIA. The EEPP will be displayed on all site notice boards. In accordance with the EEPP, the Contractor's Environmental Manager will be notified of environmental incidents.

13. RELATED DOCUMENTS AND REFERENCES

Phase 6 Construction Traffic Management Plan (40-STS-LC-2100-LG-PL-00007)

Phase 6 Noise & Vibration Management Plan (40-STS-LC-2100-EN-PL-00030)

Phase 3 Landscape and Ecological Management Plan (40-STS-LC-2100-EN-PL-00014)

Phase 6 Emissions to Atmosphere (40-STS-LC-2100-EN-PL-00030)

Phase 3 Surface Water Management Plan (40-STS-LC-2100-PA-PL-20102)

Phase 6 Construction Method Statement (40-STS-LC-2100-CN-MS-00007)

Phase 2 Archaeological Watching Brief Written Scheme of Investigation (40-COT-LC-8324-EN-PL-00002)

Phase 3 Soil Management Plan (40-STS-LC-2100-EN-PL-00007)

Phase 5 Hydrogeological Risk Assessment (40-STS-LC-2100-EN-RA-00004)

Phase 3 Surface Water Drainage Scheme (40-STS-LC-2100-PA-22-20107)

Construction Phase Dust Management Plan (40-STS-LC-2100-EN-PL-00015)

Construction Phase Arboricultural Method Statement (40-STS-LC-21-CN-MS-00003)

Phase 6 Construction Vehicle & Plant Management Plan (40-STS-LC-2100-LG-PL-00006)

14. DEFINITIONS AND ABBREVIATIONS

NYMNPA – North York Moors National Planning Authority

MTS – Mineral Transport System

CEMP – Construction Environmental Management Plan

HGV – Heavy Goods Vehicle

EIA – Environmental Impacts Assessment

PMWSP – Precautionary Method of Working Standard Procedures

CSEF – Community Stakeholder Engagement Framework

ANPR – Automatic Number Plate Recognition

AMS – Arboricultural Method Statement

MSDS – Material Safety Data Sheet

COSHH – Control of Substances Hazardous to Health

IBC – Intermediate Bulk Container

PSMP – Protected Species Management Plan

RPZ – Root Protection Zone

WSI – Written Scheme of Investigation

WTP – Water Treatment Plant

EEPP – Environmental Emergency Preparedness Plan

AIL – Abnormal Indivisible Loads

15. ATTACHMENTS

ATTACHMENT A – Community Stakeholder Engagement Framework

ATTACHMENT B – Complaints Procedure

ATTACHMENT C – Precautionary Method of Working

ATTACHMENT A - COMMUNITY STAKEHOLDER ENGAGEMENT FRAMEWORK
