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DESCRIPTION OF WORK:

This method statement provides an overview methodology to describe how Mackenzie will carry out all works to repair the embankment.

Site Establishment & Specific Work Requirements

- Vehicles to be parked in the designated area.
- RAMS will be read, discussed, procedures understood, work completed as per RAMS and signed off by operatives completing the work.
- Heras Fencing to be checked daily by MCL site personnel.
- ATC will be requested and approved before SoS.
- There are INNS present onsite. NDSFB will remove and dispose of the Japanese knotweed which will be coordinated by SW. All works in and around INNS will be done following the Biosecurity management Plan. Including but not limited to preventing potential movement of embankment soil containing Himalayan balsam seed. A dedicated washdown area to prevent moving soils on vehicles/ machinery/ boots elsewhere on site/ to other areas. All site workers will be briefed with INNS toolbox talks as part of site inductions.

Enabling Works to Allow Access

- Tree surgeon to remove Approx. 26 medium to large trees and 38 small-medium trees. These works will be carried out mid-January before nesting season starts.
- Where possible cut down trees will be stacked and left in the surrounding areas to create natural habitats for local wildlife. Any vegetation which isn't suitable for natural habitats will be removed and disposed of at a relevant recycling facility.
- Any dense vegetation will be cut away with chainshaws and brush cutters then uplifted by a clamshell for disposal to a registered/licensed landfill.
- 30T excavator to scrape dense vegetation which cannot be managed by hand or where access is not safe. Tree surgeons to stump grind 9 qty existing stumps within WWTW land to allow installation of the crane pad.
- Silt fencing to be erected along the top of the embankment to prevent runoff.
- 30T excavator to remove embankment within WWTW fence line and stockpile this in bunds. Approximately 190m long with the depth varying from 1-3m in height.
- Fencing subcontractor to remove existing boundary fence to WWTW for the installation of the crane pad/access road then install Palisade fencing and a vehicle gate 20m in length on both the east and west sides to secure the WWTW boundary during the construction phase. Anti climb paint with warning signage to be put on new fencing.
- Engineer will mark out locations for ducting for overpumping and welfare cabins.
- Permit to Break Surface to be completed by foreman and/or engineer.
- Area will be scanned using a gCAT4+ and Genny 4 to check for any services in the area.
- Trial holes will be carried out using insulated shovels to expose all required services within the proposed excavation area.
- Under the supervision and guidance of an appointed person the excavator will scrape the track down in maximum of 100mm layers.
- Ducts will be laid, given a sand surround, marker tape placed over them and have blue rope pulled through them before being backfilled with as dug material.
- Electrician to install distribution board and run cables for pumps and welfare.
- Fencing subcontractor to install palisade fence at the ped bridge to prevent access and try to reduce vandalism.
- 30T excavator will scrape off approximately 150mm of topsoil along the proposed length of crane pad.
- Terram and Geogrid will be rolled along the full length of the crane pad.
- Crane pad will have an approximate depth of 600mm clean imported type 1 which will be built up in 150mm layers and compacted. At 300mm thickness there will be another layer of geogrid.
- 220m length of Heras fencing will be erected along the full length of the site to protect it from third party/public entry if they get past the palisade fencing.
- 140m length of heras fencing will be erected in D&G Council's section.

- Vibration and movement monitors for buildings and tanks next to crane pad during the installation and removal of the cofferdam will be installed to ensure vibration does not impact the WWTW.
- Plate bearing tests will be carried out to ensure crane pad is strong enough to deal with the required loadings from the crawler crane.

Installation of Cofferdam and Embankment Repairs.

- 90T Crawler crane will be brought to site and used to install the cofferdam as per the TWD along with a gate installed on a barge with retractable feet. To minimise the risk of delays impacting fish breeding season we will have the full cofferdam set up at once instead of four individual sections following on from one another.
- Clutch sealant is to be used between sheet piles to minimise the ingress from the river as much as possible.
- Temporary embankment staircases will be installed to provide access to site personnel.
- A fish rescue will be carried out by NDSFB.
- Once the cofferdam is installed and fish rescues are complete the over pumping will be set up and installed as per the TWD. We will need approx. 15m of suction hose with a strainer and 120m of layflat or wire armour bagging. We will use a 4" electric pump along with a 6" electric pump to act as a backup if ingress builds up and is not dealt with by the 4" alone.
- Bagging will need sliplined through a DI pipe under the crane pad so crawler doesn't damage it. Pumped flows will be discharged into the marsh/flood plain area to the West of the WWTW where it will filter onto a sedimat then into the ditches/burns and make it's way back into the river.
- A PC210LC-11 long reach excavator will be used to grade the embankment as per the design drawings. Approximately 430m3 of loose bank material to be removed over a 2,830m2 area.
- 6F2 will be used to infill the embankment to create the desired grade and compacted using an excavator mounted vibration plate. Approximately 170m3 of imported 6f2.
- The erosion protection will then be lifted into place using the crawler crane as per the lift plan and design at each section on the construction drawings.
- - 115m2 of Pre-filled Salix Aquarock Bags.
- - 285m2 of 300mm diameter Pre-filled Salix Rock Rolls.
- - 745m2 of 250mm thick x 1m wide x 2m long Pre-filled Salix Rock Roll Mattresses.
- - 1685m2 of embankment to have Vmax C500 Composite Turf Reinforcement Mat (C-TRM) with anchor trench along the top of the embankment to secure it in place.
- Once the majority of the works have been complete as far as possible the single piles at 7m centres along the embankment will be cut down below the erosion matting and sacrificed, if we try to vibrate them out it could cause instability and/or weak points in the embankment.
- Piles on the downstream returns, upstream return and some piles along the line of piles in the river will be pulled. This will allow for the flow to essentially return to normal against the embankment and remove the risk of the cofferdam failing with push and pull forces of the tide while we are not onsite until it can be completely removed in June 2027.
- Personnel will need to work from man anchors at low tide level to complete these final sections.
- Access road/crane pad will be removed from site and the embankments will be reinstated. Grass seed will then be spread over this area.
- The WWTW perimeter fencing will then be reinstated to a like for like condition.
- NDSFB to advise what vegetation is preferred on the embankment and this will be planted.
- Install a new footpath as per the design.
- Reinstate staircase in WWTW as like for like.
- Reinstate the handrail along the top of the embankment.
- Tree planting to replace trees felled along the top of the embankment - TBC
- Bird and bat boxes installed to try and reestablish wildlife. – TBC
- Wild seed mix spread in council's area. - TBC

IS LIFTING OPERATION REQUIRED: YES	NO	*If yes go to next line*

IF SIMPLE LIFT USE FORM …… **IF BASIC OR COMPLEX LIFT SEE APPOINTED PERSON**

HAZARDS:

- **Slips trips and falls**

- Site vehicles
- Underground services
- Working in live WWTW
- Lifting operations
- Excavations
- Manual Handling
- Traffic (tankers and SW vehicles in WWTW)
- Working close to live watermain/services
- SW ops/third parties
- Electrical works to install power supply
- Heavy Mobile Plant
- Narrow access roads
- Working at height
- Buildings and Tanks within WWTW close to piling operations
- INNS (should be dealt with by SW and NDSFB prior to MCL commencing works onsite)
- Ecological constraints, fish spawning season, birds, bats, otters and oystercatchers etc.
- Leptospirosis
- Adverse weather
- Hot Works

HAZARDOUS SUBSTANCES:

- Natural Soils and Aggregates
- Line Marker Paint
- Petrol/Diesel
- Concrete
- Dust
- Sewage/contaminated ground in WWTW.

MEANS OF ACCESS:
Identify:

- Access to Troqueer WWTW is along a single-track road through Holm Park Playground, 35 Moat Rd, Dumfries DG2 7HQ What three words – contained.part.whisk.
- Access equipment required – N.A
- Specialist equipment required – Yes.

SUPERVISOR:
Contract Manager – Gary Porter
Project Manager – Marc Anderson
Site Engineer – TBC
Site Manager -TBC
Site Foremen – TBC

HEALTH & SAFETY CONTROLS & MONITORING:
Risk Assessment to be always adhered to.

INSPECTION REGIME:
Delivery driver's paperwork and training to be checked prior to offloading of any containers etc.
MCL Loading / Unloading form to be completed and all drivers' certificates checked and recorded, likewise for all LOLER/PUWER equipment.
Daily inspection of excavations.
Daily inspection of silt fencing.
Daily Inspection of cofferdam.

OPERATOR TRAINING OR SKILLS REQUIRED:
CSCS, CPCS, NPORS, SMSTS, SSSTS, First Aid, DOMS/Water Hygiene

DISCONNECTION OF SERVICES:
List any service disconnection or warnings together with isolation and control: N/A

DILAPIDATION SURVEY:
To be conducted by Engineer prior to works commencing

OCCUPATIONAL HEALTH ASSESSMENTS:

- **Which activities will require health surveillance for the operatives carrying them out: Working with plant, excavations, manual handling and COSHH.**
- **Which operatives are affected: All operatives**
- **Who will arrange for the health surveillance: MCL Health and Safety Manager – Scott Harvey**
- **Who will carry out the health surveillance: Rosano**

SAFETY OF THE PUBLIC OCCUPIERS OR OPERATORS:

- **All site areas will be fenced off and segregated from public access no unauthorised personnel will be allowed in working locations while works is ongoing.**

ENVIRONMENTAL CONTROLS:
Describe:

- **Threats of the environment arising from the work: Noise, vibration, silt runoff, working in watercourse and tree/vegetation removal.**
- **Which environmental protection measures will be put in place:**
- **Habitat features to be made from felled trees**
- **New trees to be planted upon completion of works**
- **Vibration monitors will be installed**
- **Work during sociable hours**
- **Installation of silt fencing,installation of cofferdam in river will take place out with fish spawning season (June – September)**

FIRST AID:
First Aider: - TBC
Back Up First aider: - TBC
First Aid Kit located in: in Welfare Unit

PPE:
Identify:

- **Which items of PPE/RPE will be used: Hard hat, gloves, eye protection, hi-visibility clothing, overalls, safety boots, ear protection, waders, life jacket.**

EMERGENCY PROCEDURES:
In the event of an emergency contact numbers as well as hospital location is shown below:

Closest A&E – Dumfries & Galloway Royal Infirmary, A75, Cargenbridge, Dumfries DG2 8RX
What three words – nylon.vibe.stint

- **Contact Number for A&E –01387 246246**
- **NHS24 – 08454 242 424**
- **Site Contact: TBC**
- **Compliance Manager – Scott Harvey –** [Redacted]
- **Local Police – 999**
- **Fire Brigade – 999**
- **Ambulance – 999**
- **SEPA – 0800 807 060**

Dumfries, DG2 7HQ. What three words – contained.part.whisk

EMERGENCY EVACUATION:
Clear area / make safe. If safe to do so, walk or drive to safe area as instructed and report emergency accordingly either by contacting the emergency services if required or contacting your line supervisor

NOTIFICATIONS REQUIRED:
Land notices are not required.
ATC required

NOISE ASSESSMENT:
Noise may be generated in short durations – ear defenders or plugs will protect workers and those nearby will be exposed potentially to a loud noise for very short durations as they pass by.

VIBRATION ASSESSMENT:
Ongoing monitoring as per required plant

PLANT INSPECTION & OPERATOR TRAINING:
Identify:

- **What items of plant and equipment will be used: Long Reach excavator, 30T excavator, 90T crawler crane, dumpers, Roller, small hand help plant.**
- **Operators' experience/qualifications; Operator competence records**
- **Thorough examination and maintenance details: To be examined upon delivery then daily inspections of plant.**

PUBLIC NUISANCE:
Identify:

- **Possible sources of nuisance for neighbouring people/properties: Noise from works and closure of footpaths.**
- **Who will be responsible for neighbourhood liaison: Public Liaison Officer**

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METHOD STATEMENT COMPILED BY: P Dunne (Signature)

SIGNATURES OF EMPLOYEES OR SUB-CONTRACTORS INVOLVED IN THIS OPERATION.

I have read the method statement and have been issued all PPE required.

Full Name	Signature	Date