



DEPARTMENT: HO Construction
Report NO: 60R18502/K.K084/7000
Report TITLE: Piling Method Statement

PROJECT REFERENCE

PROJECT NO: 60R18502
PROJECT LOCATION: CLITHEROE
PROJECT TITLE: EDB JMBM DEMO Plant
CLIENT: JMBM
CLIENT PROJECT NO 16086 - eLNO®DEMO
CLIENT DOCUMENT NO 16086-60-L31-7000

PM Authorisation: P. MASON

				APPROVALS		
Rev	Issue Date	Pages	Revision Description	Prepared	Checked	Approved
0	5 Nov 2018	10	For Comment	GH	PMS	PMS

DOCUMENT ISSUED FOR:

☐ Preliminary	☐ For Information
☒ For Comment	☐ For Use
☐ For Approval	☐ For Enquiry
☐ For HAZOP	

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	2 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

Hold Record

Specify any Holds within the document.

Hold No.	Section	Description of Hold
<1>		

Revision Tracking

Specify significant change from previous revisions of the document.

Rev.	Section	Description of Change

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	3 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

TABLE OF CONTENTS

1.0	PURPOSE.....	4
2.0	METHOD STATEMENT	5

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	4 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

1.0 PURPOSE

The purpose of this document is to provide a piling method statement for the initial Enabling Phase of the eLNO® Demonstration plant proposed for construction at the Johnson Matthey (JM) site in Clitheroe, UK.

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	5 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

2.0 METHOD STATEMENT

 Clitheroe- Piling Works					
Name		Position			
G Hutchison		Construction Manager			
Support Personnel		Details / Notes			
Banksman		✓	To be used for all reversing vehicles.		
Stand-by man					
Firewatcher					
3. Permit required (tick below)					
✓	Permit to Work		Hot work permit	✓	Excavation Permit
	Confined space permit		Working at height		Other
4. Description of safe method of working					
Description Foundation works associated with construction of a new steel framed industrial building 1. The main building is circa 85m x 55m in footprint and is piled with circa 600 CFA piles 6 to 10m deep. 2. An adjoining Administration building located on the North West circa 25m x 22m is raft foundation 3. A transformer compound is located on the South East corner local to incoming power. 4. A Tank Farm, Utility and Effluent Treatment area located east of the main building, circa 60m x 60m, with circa 300 piles. The Piling activities will involve 1. Boring circa 800 No. Auger Piles (Continuous Flight Auger CFA) 2. Removal of spoil arisings from boring operation. 3. Concreting Piles 4. Handling and installation of reinforcing bar. Key Impacts to be Mitigated – Risk Assessment addressing these is appended • Disturbance of local boarding school. • Dust • Noise • Traffic Movements / cleanliness of roads • Risk of runoff water impacting local watercourses • Concrete washout risks • Operational Impacts INSTALLATION OF PILING OVERVIEW ▪ Construction Area fenced off barriers and signage to the work area in place. ▪ Compacted Stone Piling mat installed in advance by others with CBR tests to prove suitability for piling rigs. ▪ Continuous Flight Auger Piles will be utilised cast in situ to avoid noise and vibration of a driven pile solution. ▪ Vehicle movements to be segregated from other works by use of barriers as required					

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	6 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

- Plant and delivery wagons reaching the work area are to stop at the designated waiting area until a banksman is in attendance to direct them to the required area. Using agreed Traffic Movement route
- Piling will be set out using main site datum control and pile positions will be marked by driven pins.

DETAILED METHOD STATEMENT –DISMOUNTING PILING RIGS FROM LOW LOADER

1. Delivery of piling rigs shall be via the approved route as directed by the relevant authorities to the site location.
 2. Low loader shall be directed to place for unloading which will be as close to the piling area as possible.
- Once parked - rigs chains will be released carefully.
3. Wooden “step” chocks or other protection as required will be placed near low loader where tracks will land.

4. Rigs will be driven off low loader carefully and tracked to a safe area whilst low loader is removed.

METHOD STATEMENT –ERECTING PILING RIGS

1. Piling rigs will be directed to position of erecting which should be firm and level and with sufficient working area – in this instance the piling platform/works area shall be the area for rigs erection.
2. Pre-erection checks and erection will be in accordance with the manufacturer’s instructions. CBR Checks on ground bearing of Piling mat.

METHOD STATEMENT –MOVEMENT OF PILING RIGS

1. Piling mat access roads and ramps will be constructed and maintained in accordance with submitted piling platform design and BRE “Working Platforms for Tracked Plant” or similar. Boundaries of piling platform will be identified as suggested therein.
2. Should the extent of the piling area not be clear GPL will place boundary markers to identify piling area with signs restricting access.
3. Prior to any individual movements of piling rigs it is the responsibility of the piling foreman and the topman banksman to ensure that no-one is in the exclusion zone 5m from rigs.
4. In all cases visual checks of vicinity on all four sides of piling rigs will be made. Where there has been a significant pause or prior to movement between piles or areas it will be necessary, when safe to do so, for banksman to perform a 360° walk about rigs prior to moving to ensure area is clear.
5. The direction and route of movement will be communicated to the banksman by the piling foreman and any obstructions avoided if possible and if not measures discussed on how to avoid collisions.
6. Banksman to wear hi vis clothing and maintain visual contact with driver when signalling.

METHOD STATEMENT – REFUELLING

1. Prior to the establishment of the piling rigs ensure that arrangements have been made with for agreeing positioning of stored fuel, procedures for distribution of fuel, environmental protection and any site specific requirements. As a minimum requirement - spill kits, plant nappies etc are required to be present on site at designated bunded fuelling area
3. Normal operations involve fuel delivered initially with piling equipment in double skinned locked crane able static bowzers. Re-fuelling of bowser will be from vehicle delivery as required.
4. The RIGS should be established at the bowser position and drip tray placed such that spillages are contained.
5. A fuel spill kit shall be kept with RIGS and bowser at all times and operatives should be familiar with its stored position and its use.
6. When re-fuelling operatives to wear appropriate PPE including gloves and eye protection.
7. All spillages shall be reported immediately line with main contract spill plan.

Excavated material

Arising of spoil from the boring operation will be managed /scraped away continuously from the pile area using a 360° excavator in attendance. The arisings will be collected for removal by occasional 20t wagon to designated licenced offsite tip. Material classed as unsuitable non-hazardous.

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	7 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

A wheel cleaning facility will be set up on the exit of the construction area to avoid mud/ material being deposited onto the facility roads and ultimately onto the public highway.

Run Off Management (in line with CIRIA Report C515 recommendations)

A cut off ditch to be formed on the South edge of the site to a sump. This is where the water table is shallowest. The purpose of this is to manage site runoff. Site runoff water will be collected in the pit then pumped into a proprietary silt buster tank to allow settlement of silts before being discharged. The river Ribble is some distance from the ditches into which clean water discharge will be allowed to soak away. The distance from the site to the River Ribble (i.e.>250m) is considered to limit the potential pollution linkage for freshwaters.

Water will be regularly sampled for contamination. In the unlikely event of a spill of fuel or hydraulic fluid from plant the pump will be switched off until the contaminated area is removed cleaned up

Dust Management

In periods of dry weather when the risk of dust is higher a tractor and bowser will be utilised to damp down construction areas to mitigate dust.

Noise management.

The immediate surrounding area is predominantly industrial. Areas to the north and northeast have been quarried for limestone, land to the west is occupied by a boarding school and open fields, with some residential accommodation to the east of the JM site. The key impact is to minimise the noise impact on the receptor at the boarding school. Construction work will adhere to a 18.30 curfew. Piling will be continuous flight auger to suit the ground conditions and to avoid the effects of an impact driven pile system. Pile cropping will be by proprietary concrete cropping tool to minimise breaker noise.

Concrete Deliveries

An on-site mixing drum will be in place within the site boundary c/w a concrete pump attached. Concrete deliveries will be to this mixing drum such that there is a designated offloading point. Following boring the concrete will be pumped via hose connected to the piling rig down the auger such that it displaces the auger upwards as the concrete fills the bore. Surplus will be scraped away by 360° excavator and allowed to harden for breaking up and removal later.

A concrete wash pit lined and weired will be formed in the ground. Concrete washout of delivery wagons will only be undertaken at this washout pit so that washwater is contained and prevented from migration. Should the need arise to empty this pit it will be tankered away.

Install Reinforcement

Reinforcement cages may be built on site pre-fabricated on the ground and lifted into position using the piling rig. The cage will be lowered into the bore to the level required for starter bars. Pre-fabrication off site is an option.

Breaking down of Pile Heads

The top surplus concrete on Pile heads will be broken down to formation level using a proprietary pile cropper. This technique will minimise noise. Hydraulic hand breaker work will be limited to final dressing of cropped pile head.

METHOD STATEMENT - DYNAMIC PILE TESTING

1. Prior to commencement of pile testing it shall be checked with the client that piles to be tested are approved and have not been cut / damaged.
2. Selection of piles will be by in order of preference supervising engineer, client or pile designer.
3. If necessary pile sides will be exposed to 1 m from pile head.
4. Testing engineer will attend site and undergo both JM and Jacobs visitor Inductions prior to agreeing with piling foreman work areas and piles to be tested always observing visitor rules.
5. At no time is the engineer to be in exclusion zone 5m from RIGS unless operations have ceased and explicit authorisation has been given by piling foreman.

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	8 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018

SIMOPS (simultaneous operations)

Piling auger boring will be by multiple rigs and 360° excavators in attendance.

Concrete delivery to central point and pumped auger machines will be via hose to avoid traffic movements.

Removal arisings will be once sufficient has been accumulated to make it an efficient operation.

Tools, plant and equipment (*Form TF28 to be filled in daily*)

Equipment Type

- Continuous flight Auger machines.
- Hard Barriers (typically pedestrian) and signs
- Pneumatic breaker
- 360 excavator for scaping arisings and for hydraulic cropper.
- Dumper
- Compressor Generator
- Wagons
- Hand tools

Access and Egress

Access to the work area will be gained by the site pedestrian routes.

Vehicle access to the work area will be gained by the site roads using designated route. Only authorised vehicles will be used on site.

Barriers/Signs Barriers & signage to be placed around the work area to ensure segregation of traffic

Doc. Title.	Piling Method Statement	Revision	0
Project Title.	EDB JMBM DEMO Plant	Page	9 of 10
Document N°.	60R18502/K.K084/7000	Date	5 Nov 2018



