

METHOD STATEMENT
Bedford Passage – Phase 2 Continuous Flight Auger Piling – Secant Wall

Method statement number	KP-P231-MS-003				
Start Date of Works	July 2021	MS Category	1	<mark>2</mark>	3

MS Category Descriptors can be viewed at Appendix A

Revision	Issue Date	Author	Description of modifications
00	June 21	H White	Initial Issue

	Print Name	Signature	Position
Author	H White	HW	Project Manager
Checked By	M Cook	MC	Project Manager
Category 3 Authorisation			IF REQUIRED



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1. Scope of Works

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The Bedford Passage site is located within the London Borough of Camden. It is centred on National Grid Reference 529262, 181811.

The site is located on Cleveland Street, approximately 250m west of the Goodge Street London Underground Station. The site boundary encloses an area of approximately 0.32ha.

The site consists of North House located in the northwest corner of the site; South House located in the southwest corner of the site; and the Grade II listed Middlesex Hospital Annexe (the Union Work House) located in the centre of the site with two wing buildings at the rear.



Keltbray will undertake the following activities for Phase 2 of Bedford Passage,

- Construction of approx. 150lm of guidewall covered in KP-P321-MS-002 Guidewall
- Installation of a CFA secant wall including approx. 368no 600mm piles covered in KP-P321-MS-003 CFA Secant Wall
- 72no 750mm and 11no 600mm CFA bearing piles and 4no tower crane piles covered in KP-P321-MS-004 Bearing Piles
- Provision of piling attendances including excavator and dumper will be by others
- Provision of crawler crane will be by Keltbray
- Provision of all setting out and supervision by Keltbray
- All muck away from pile arising's by others
- 1no WTP and 1no PTP







- Zone 2 installed from PPL of 24.5mOD
- Zone 3 installed from PPL of 24.5mOD
- Zone 4 installed from PPL of 24.5mOD

2. Enabling Activities

Below is a summary of the Key activities required to be carried out by Keltbray prior to the Mobilisation of the piling rigs to site:

- RAMS and ITP and lift plans are to be submitted for approval prior to commencing with works;
- Lifting plan to be submitted for approval prior to works commencing;
- All operatives to be checked for adequate skills and competencies (CSCS/CPCS cards) and attend Keltbray and Morgan Sindall inductions;
- Pile probing and breaking out and removal of any obstructions by others;
- Guidewall installation by Keltbray
- Installation and testing of the Piling Working Platform in accordance with the requirements of the Working Platform Certificate by others;
- Issue of permit to dig/pile;
- Before the start of every shift, all operatives to be briefed by the Supervisor and records to be kept in Site Offices.

3. Access & Logistics

- Pedestrian access is from Charlotte Street, opposite Chitty Street. This will lead you to the site office to sign in.
- All vehicle access is via Cleveland Street and all vehicles are to be controlled by vehicle marshals. Vehicles will be banked by a traffic marshal down the access ramp onto the piling mat for unloading.
- Due to noise restrictions on site there will be no working between the hours of 6pm-8am, if due to site problems we need to work beyond 6pm the main contractor will be informed. Works will be planned to finish at 5pm each day, allowing a 1hr buffer zone if problems arise.
- Note delivery of rigs and cranes are subject to movement orders, which restrict their movement to between 7pm and 7am.



- Daily coordination meeting will be held to discuss plant movements and any other planned deliveries.
- Exclusion zones will be formed around work areas by use of crowd control barriers which will be located as and where required on a daily basis.
- Piling arising will be transferred using licenced hauliers to a licenced facility, this work will be carried out by Keltbray.
- All deliveries are to be FORS Silver Minimum and Morgan Sindall are to be notified in advance



Site location and access points





4. Method of Works

Keltbray Piling works will be constructed in accordance with the approved Keltbray Piling Procedures:

KP-COMP-PRO-020 - Permit to Pile Procedure

KP-COMP-PRO-007- Concrete Pumping Concrete Line Cleaning Procedure

KP-COMP-PRO-014 - CFA Auger Assembly Procedure

KP-COMP-PRO-031- CFA Procedure

KP-COMP-PRO-033 CFA Calibration and Manual Monitoring Procedure

KP-COMP-PRO-038 - Adding Water Procedure

KP-COMP-PRO-039 - Non Conformity and Corrective Action

KP-COMP-PRO-025 - CFA and LDP Rigging Up Procedure SR30

KP-COMP-PRO-041 – COVID-19 Working Procedure

Any deviations from the approved working procedures listed above which are expected to occur during the under taking of this project will be detailed in the below sequence of works.

- 1. All operatives will attend a site induction, provide proof of competency and a safety critical medical where required.
- 2. Before any works take place, the Piling Platform Certificate is required to be signed and issued to the Keltbray Piling site team, prior to either the crane or piling rig being erected or working. This will be done in accordance with **KP-COMP-PRO-020 Permit to Pile Procedure**.
- 3. Once the Piling Platform has been signed off, work will be undertaken for the rigging up process of the Piling rig and attendant crane.
- 4. Compliance of the **KP-COMP-PRO-041 COVID-19 Working Procedure** will require enhanced hygiene standards. This shall include using hand sanitizer upon entering the work site and using the KRONOS machine. Regularly washing hands is required especially prior to using the canteen and before meals.
- 5. A Daily Activity Briefing will be held prior to the commencement of every shift. The briefing will include, but not limited to, planned activities for the shift, deliveries/collections, and site logistics. This will be carried out by Keltbray PM and record will be taken. In adherence to **KP-COMP-PRO-041 COVID-19 Working Procedure** the daily site briefing will now take place outside in order to maintain 2m social distancing.
- 6. A typical secant wall piling sequence for a hard/firm wall will follow the sequence as per the below diagram.







- 7. Boring of the pile location will only commence once the correct reinforcement cage and has been confirmed as arrived on site and has been checked against the reinforcement drawings for that pile have been carried out in line with the task specific ITP.
- 8. The reinforcement cages will be pre-fabricated off site and delivered on FORS registered vehicles which will have edge protection to allow the safe unloading of the cages. Cages will be offloaded on site, according to the lift plan, using the webbing slings provided. The 2m social distancing should be maintained when offloading cages using 2no tag lines.
- 9. Once the cages have been brought into site, the webbing slings are to be removed. The cages shall be stored on timber sleepers of suitable size to ensure that the cages are not damaged and do not roll.
- **10.** To be read in conjunction with **KP-COMP-PRO-031 CFA Procedure**. The points below outline the pile installation procedure for 600mm piles using a SR75 rig in CFA mode:
 - 10.1.1. The position of each pile shall be marked by a steel pin driven into firm ground and referenced with a pile identity number. The engineer will also spray the guide wall on the pile location for the positioning of the auger. The Engineer will set up the EDM more than 4m from the pile location to maintain the 2m distancing rule.
 - 10.1.2. The pile number shall be confirmed by the banksman and briefed to the rig driver, verbally. The rig driver shall enter the design depth into the rig instrumentation and check this against the daily build schedule.
 - 10.1.3. Construction of the Pile shall not commence until the supplier has confirmed availability of the required concrete to build the pile. Generally and in keeping with good material management, the pile should not be drilled until the required concrete is either already on site or confirmed by the supplier to be in transit, or a combination of both.
 - 10.1.4. The concrete pump and delivery hose shall be primed with prima pump or if using a hired in mobile concrete pump a suitable cement grout. Note: 10mm aggregate may be used in the first load of the day, but generally is not required. If the hoses are of a suitable diameter (>100mm) then there will be no need to use 10mm aggregate first.
 - 10.1.5. The auger shall be drilled down to the required depth or refusal (no penetration despite continued revolutions for 2 mins or as set out in the Project Specification.
 - 10.1.6. Once the design depth has been achieved, the depth shall be checked against the daily build schedule from KIPS prior to the concrete phase.
 - 10.1.7. The concrete shall be discharged into the hopper of the concrete pump, for direct delivery to the rig or agitator. When signalled by the rig operator, concrete shall be pumped to the rig.
 - 10.1.8. When the instrumentation confirms that the auger stem has been filled, the auger shall be raised the minimum amount to allow the successful initial discharge under pressure of the pumped concrete. As the auger is withdrawn, concrete shall be pumped through the auger stem to construct the pile. This stage of the operation shall be controlled by the Rig Operator using signals to the pumpman. The rig operator shall ensure that the withdrawal rate is not excessive and leads to loss of the auger tip embedment in concrete.
 - 10.1.9. As the auger is removed, the flights will be cleaned of spoil by the brush fitted to the side of the mast. At regular intervals, the attendant excavator will remove the build-up of pile arisings from the top of the pile location. When the auger is within 2m of the top of the pile, the operator/Banksman shall signal the attendant excavator, to ensure that the top of the pile is clear of arisings when possible.
 - 10.1.10. Whilst digging the pile, the rig banksman is to watch the arising for any signs of ground contamination. Should there be a sign of contamination, the material will be segregated and placed on plastic sheeting until further testing can be carried out. This will be signposted as potentially hazardous material.
 - 10.1.11. As the auger is nearing the top of the pile, the banksman shall observe that clean concrete is being flighted from the pile, before the appearance of the auger tip.



- 10.1.12. When the concrete placement is complete for the pile, the rig shall be tracked away from the pile, to allow the attendant excavator to clean thoroughly the area directly around the pile head. Any spoil that may be present at the pile head, shall be removed by way of shovel, by the banksman.
- 10.1.13. If during piling works concrete has been tested and is out of specification, then the procedure for adding water must be adhered to. This will be done in accordance with **KP-COMP-PRO-038-** Adding Water Procedure. Water must never be added without first confirming with the batching plant the volume of free water available.
- 10.1.14. In the case of male pile being constructed, the pile cage will then be lifted from the storage area, lowered and plunged through the freshly placed and cleaned concrete.
- 10.1.15. In some instances, a cage vibrator may be required to plunge the cage into its final position with the use of a "Top Hat" piece of equipment.
- 10.1.16. Once constructed, the pile head shall have a cover placed over the pile head, to prevent persons from falling into the pile's fresh concrete.
- 11. Should any non-conformities arise which deviate from the specification and the Keltbray ITP, then an NCR will be raised for this pile and communicated with the principal contractor and the design team. This will be done in accordance with **KP-COMP-PRO-039-Non Conformity and Corrective Action**.

Refer to Appendix B – Action Plan for information relating to dealing with events occurring outside of the planned sequence of works.

5. Permits – Select from Drop Downs							
Permit Ref:	Hot Works						
Permit Ref:	Break Ground (Dig)						
Permit Ref:	To Load						

ENSURE PERMIT CONTROLS & REQUIREMENTS DO NOT CONFLICT WITH THE METHOD OF WORK

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6. Hazards / Risks Identification – Key Points Briefing

The following standard piling risks have been identified as being applicable to this project.

Keltbray R.A. Reference Number: Risk Assessment Title:

r	LO1 CFA1 SL1 PM1 SS1	Lifting Operations CFA Piling Site Logistics Plant Maintenance Site Specific								
	RD1 EN1	Rig and Derig operations Environmental								
Overall Assessment of Risk after the implementation of Control Measures (tick one)										
Low		Moderate	High							

In addition to the above identified risk assessments, please refer to Appendix B Site Specific Risk Assessments for risks associated with this project.

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A full COSHH assessment has been carried out in relation to this project, below is a list of the identified substances which will be on site and require COSHH assessment documentation.

Control of Substances Hazardous to Health									
Readymix Concrete	Prime a Pump								
AdBlue	Diesel								
Engine Oil	Line marker (spray paint)								
Hydraulic oil	Petrol								
Mould oil	Grease								

If the work cannot be carried out as described, then:

Stop, Review, Re-plan, Document, Authorise, Re-brief, Continue Works



7. Resources

Management / Supervision

Site Based:

Project manager – Harvey White – 07968 304219 Project Engineer – TBC Site Supervisor & First Aider – Dean Rogers – 07538 898636 (lifting supervisor)

Visiting:

Managing Director – Stuart Norman – 07793 650514 HSQE Advisor – Liam O'Meara – 07803 506720

Labour	Equipment
Crane operator x 1 Rig operator x 1 Setting out Engineer x 1 Rig Banksman x 1 Slinger/ signaller x 1 Pumpman x 1	CFA augers COSHH Stores Lifting accessories and rack Concrete hoses Diesel bowser Jet wash Site stores
Plant	Materials
60T Crawler crane x 1 SR75 piling rig x 1 Concrete pump x 1 MEWP x 1	Reinforcement cages – CARES approved supplier Concrete – QSRMC approved supplier
Task Specific Requirement(s)	Other



8. Method Statement Prompts

This section is to ensure there is an effective briefing of the Method Statement to the workforce carrying out the works and that there is an opportunity for all involved to challenge, contribute and understand their role in the work. This section should be revisited if there are any changes including as an example: - new team members, different equipment or any changes to the method of work.

Is everyone aware they can stop work at any time?

What are the hold points?

What are the main hazards?

Who is the Supervisor?

What is the sequence for the work?

Can the work be carried out to this method?

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Appendix A - Method Statement Categories

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Method statements will be given a category dependant on the hazards that are identified and the level of risk presented prior to mitigation measures being implemented. Method statements given a Category 3 status will require approval from an authorised competent person.

Category	Associated Personnel (Persons directly involved)	Non Associated Personnel (Persons indirectly involved)	MS Category
Catastrophic	Multiple fatalities.	A single fatality and / or multiple severe injuries or equivalent occupational illness.	3
Critical	A single fatality and / or multiple severe injuries or equivalent occupational illness.	A single severe injury or occupational illness and / or multiple minor injuries or minor occupational illness.	2
Marginal	A single severe injury or occupational illness and / or multiple minor injuries or minor occupational illness.	At most a single minor injury or minor occupational illness.	1
Negligible	At most a single minor injury or minor occupational illness.	Any injury or occupational illness, however minor.	1

CDM 2015 SCHEDULE 3: Work Involving Particular Risks

- 1. Work which puts workers at risk of burial under earthfalls, engulfment in swampland or falling from a height, where the risk is particularly aggravated by the nature of the work or processes used or by the environment at the place of work or site.
- 2. Work which puts workers at risk from chemical or biological substances constituting a particular danger to the health or safety of workers or involving a legal requirement for health monitoring.
- 3. Work with ionizing radiation requiring the designation of controlled or supervised areas under regulation 16 of the Ionising Radiations Regulations 1999.
- 4. Work near high voltage power lines.
- 5. Work exposing workers to the risk of drowning.
- 6. Work on wells, underground earthworks and tunnels.
- 7. Work carried out by divers having a system of air supply.
- 8. Work carried out by workers in caissons with a compressed air atmosphere.
- 9. Work involving the use of explosives.
- 10. Work involving the assembly or dismantling of heavy prefabricated components.





Appendix B – Risk Assessments



	Standard risk assessment - Site logistics													
Generic Pili	ng	Risk As	sessment Number	Date		•	Prepared By	Reviewe		d By	Next Review By			
Site Logistics	;	-	RA-STD-SL-01	31	/07/20)20	CK / SN			LC		27/01/2021		
ACTIVITY	IDENTIFIE	D HAZARD	WHO OR WHAT	INIT HR	TIAL F x LR=	ISK RR	CONTROL MEASURES	RESIDUAL RISK HR x LR= RR			FUR	THER ACTION		
			COULD BE HARMED	HR	LR	RR			LR	RR				
	Locati cabins/store gro	ng site s on unlevel und		3	2	6	Cable location to be reviewed adapted delivery. Locations medical on traffic	3	1	3	Establish Project I	solid, level underfoot conditions. Manager to draft and		
Establishing site set-up	Obstruction routes/w	on to traffic valkways	Piling operatives, other site personnel, plant/site vehicles.	2	2	4	management plans. Walkways and cabins to be segregated. Clear defined routes to cabins by use of fencing where appropriate. Safety signage to be displayed. Walkways to be maintained.	2	1	2	maintain w (location of crossing, a	sekly site layout sketch walkways, designated access / egress points, store_etc_This will		
	Access/eg office/	ress to site cabins		3	2	6		3	1	3	displayed v out so ca	where DABs are carried in be discussed then.		
Controlling delivery vehicles in/out of site	Collisi pedestria causing se inju	on with ns/cyclists erious/fatal iries		5	3	15		5	2	10				
	Contact with or stru	n staff, plant, ctures.	Members of the public and public/company vehicles	5	3	15	Traffic routes to be communicated to all suppliers. Traffic marshals to control entrance/exit to site. Traffic management plan to be followed. Warning signage to be displayed. Footpath barriers to be utilised where appropriate. Suitable lighting to be in place.	5	2	10				
	Collision v vehicles cau to vehicle a occu	with public sing damage and injury to pants		5	3	15		5	2	10				
	Plant/vehic into conta operative serious/fa	cles coming ct with site s causing tal injuries	9	5	3	15	All plant and site vehicles to be banked by qualified banksman at all times Amber beacons to be fitted and warning devices as per site requirements. Site traffic management plan to be followed at all times. Segregation to be in place around working areas, stored materials and walkways. Safety signage to display site specel limit. Machines plant, vehicles only to be operated by qualified experienced operatives. Piling area to be controlled bu runnoince addenated around and limic. Describer once and the spece- tion of the specific descent and limic.	5	2	10				
Plant Movement/Site Traffic	Collisions plant/vehic serious/mir	with other les causing nor damage	Site operatives, plant and machinery, existing structures or buildings	4	3	12		4	2	12				
	Collisions v buildings/ causing se damage c	vith existing structures rious/minor or collapse		5	3	15	by supervisor or delegated person at all times. Operatives never to place themselves between static/moving objects and guided plant/site vehicles.		1	5				
Storage of materials	Access/egress to stores area uneven or protruding objects causing trips/falls resulting in minor/serious injury	s g s s Site operatives, plant and	4	3	12	Clear access/egress routes to be maintained at all times. Cages to be stacked no more than 2 high. Stores areas to be segregated. Safety signage to be displayed. 6 Point PPE to be worn at all times. (Hard hat, eye protection, hearing protection, hiviz clothing, gloves, safety footwear). Only niling onceratives to be within oiling works area. All works to be	4	2	8					
	Failure equipme materials moved causi fall onto wo causing se injuries o dam	of lifting ent whilst are being ing objects to orking areas erious/fatal or serious nage	structures or buildings	5	3	15	Only pling operatives to be within piling works area. All works to be supervised at at limes. Lifting only to be conducted/controlled by qualified in date slinger/signaller. No lifting overhead of site operatives or manned plant. Lifting equipment to be inspected prior to use. Weekly LOLER inspection to be conducted and recorded.	5	2	10				



Standard risk assessment - Rigging/De-Rigging																		
Generic Piling Risk Assessment N		sessment Number		Date)	Prepared By	Reviewed		l By	Next Review By								
Rigging / De-Rig	iging RA		gging RA		De-Rigging R		Rigging / De-Rigging RA		WHO OR WHAT	-RDR-01 31/07/		120 RISK	CK / SN	RESI	DUAL	LC RISK		27/01/2021
ACTIVITY	IDENTIFIE	D HAZARD	COULD BE HARMED	HR HR	x LR:	RR	CONTROL MEASURES	HR	x LR=	RR	F	URTHER ACTION						
Loading / Unloading of	Major dar and/or fatal/seric caused to cause slipping/rollir not centra during loadir	nage to rig r trailer, operatives d by rig ng off trailer if ally aligned ng/unloading.	Attending operatives/driver - plant & equipment	5	3	15	Suitable trailer selected for weight of the load. Trailer will be inspected for serviceability before use. Rig to be operated by qualified and experienced driver only (In date CPCS for type of rig). Rig to be guided by qualified banksman. Rig to have in date inspection certificate. Loading/unloading activity to be conducted on firm level ground. Exclusion zones to be established to restrict access in loading/unloading area where practicable.	5	2	10	All visito Visitor I informe hazards p	's to site must receive a Site nduction where they will be d of site / location specific rior to commencing loading / unloading.						
rigs onto flatbed trailers	Trailer/tract from the gr weight trans trailer causir plant/trailer to fall from to serious injur	for unit lifting ound during fer of rig onto ng damage to or banksman railer causing ies or fatality.	Attending operatives/driver - plant & equipment	5	2	10	Experienced operatives to conduct loading activity only. Rig to be guided by qualified banksman. Rig to be operated by qualified and experienced driver only (In date CPCS for type of rig). Rig to embank at slow speed onto trailer ramps. Load bearing pressure mats to be utilised where required. Activity to be conducted on firm level ground. Exclusion zones to be established if practicable.	5	1	5	Consult (Procedu	Dperating Manual or relevant 'e Document for specific Rig						
Transportation of rig	Rig falling trailer tipp adjustme Trailer collid vehicles furniture/p causing seri or fatal/ser	from trailer/ bing due to nt of load. ing with other a or street bedestrians ious damage ious injuries	Operatives, third parties, plant/equipment, third party vehicles, buildings or structures.	5	3	15	Route to be preselected and to meet all local authority and legislative requirements. Rig to be transported during agreed timings to avoid heavy traffic and creating congestion. Rig to be suitably secured with chains, stop blocks etc. prior to being transported. Suitable signage to be displayed on trailer and amber beacons to be utilised where required. Prior to entering public roadways, supervisor to check all securing points and ensure lights and signage is clearly visible.	5	1	5	Consult Operating Manual or relevan Procedure Document for specific Rig							
Loading / Unloading the rig on public highway.	Collision veh	with road icles	Collision with road vehicles causing damage or injury to member of public.	5	2	10	Plant movements must be controlled and carried out in compliance with requirements stipulated in the project Traffic Management Plan and as agreed with the City of London.	5	1	5								
Tracking rig in and out of the site entrance.	Plant co overlo	ontact or bading	Damage to the highways, footpaths, buried services or street furniture.	4	3	12	A site specific Risk Assessment must be made prior to arranging delivery to survey for signs of underground services and to check load bearings on manhole covers etc.	4	2	8	Positioning considered to travel. S to protect sheets of sur	I of delivery vehicle should be to reduce the distance rig has teel road plats should be used manhole /drain covers. Two ply should be used to protect faces when spragging.						
	Falling machinery/t damage or inju	parts of ools causing serious/fatal uries	All persons on site in particular assisting operatives/fitters	5	3	15	Rigging up procedure documented in manufacturers instructions to be strictly followed. Only trained, qualified fitters and experienced operatives to conduct rigging up/de-rigging procedure. Tools to be tethered where appropriate when working at height. Lifting activities to be conducted in accordance with associated lift plan. All lifts to be conducted by qualified slinger/signaller. All equipment to be inspected before use and necessary inspections to be recorded. Exclusion zones to be established where appropriate and practicable. All works to be conducted under supervision.	5	1	5	Consult C Procedure there ar overhead is to be	Derating Manual or relevant Document for specific Rig. If e site specific risks such as ables etc. then the rigging up specifically risk assessed.						
Kigging Op / De-Kigging	Manual handling injuries related to lifting of parts/tools and equipment		Fitters and assisting operatives	3	3	9	Where possible mechanical means to be utilised to transport, lift or pull equipment or materials. Operatives only to undertake manual handling activities if fit and healthy. Separate assessment to be made prior to activity taking place to ensure appropriate resources are available and activity is suitably planned. Appropriate PPE to be worn at all times.	3	1	3								
Pissing In (De Pissing	Falls due to height result seriou	o working at ing in fatal or s injury	Fitters, Operatives Third Parties	5	3	15	Avoid working at height where possible. Use suitable means of access such as MEWP to gain access to areas at height. Use MEWP or similar for any working at height. Safety hamess to be worn and attached to anchorage point in the MEWP. Exclusion zone in place around the MEWP. Ensure hamess' are utilised where required. All PUWER and LOLER equipment to be visually inspected before use. Regular recorded inspections of PUWER and LOLER equipment to be recorded. Only trained and qualified operatives to operate MEWP's with suitable hamess training.	5	1	5	Consult Operating Manual or relevant Procedure Document for specific Rig							
Kigging Op / Derkigging	Crushing/tra of body or whilst fittin movin	pping injuries body parts ig/adjusting g parts	Fitters, Operatives Third Parties	4	3	12	Rigging/de-rigging procedure to strictly follow manufacturers guidance and instructions. Only trained qualified fitters and operatives to undertake rigging/de-rigging procedure. Supervisor to undertake briefing with all parties involved detailing sequence of events. Signage to be displayed on trapping areas. Activity to be supervised at all times. 6 Point PPE to be worn at all times.	4	2	8								
Accessing / egressing and working on top of the rig	Slips, trips a	and falls from ight	Sprains, strains, trauma related injuries or fractured limbs	3	3	9	Use designated fitted ladder access routes only. Ensure gloves and ladders are both free from grease or oils. Ensure the upper edge protection system is complete protecting all leading edges. Avoid carrying tools or equipment up or down ladders	3	2	6	Visually inspect fitted ladder access points prior to use to ensure they are good working order. In the event where upper edge protection system is incomplete, a harness with either an inertia or fall restrain lanyard must be worn and fastened to either a designatt or permanent / welded anchor point.							
Dressing winch rope onto cable drum	Exposure mechanical points, entangle entra	to moving / parts, pinch drawing, ement or pment	Pinch, crush, severing, amputation or broken bones.	5	4	20	Stand opposite side of drum to rig operator. Avoid handing rope by utilising copper hammer or bench bar to guide / manipulate the rope into position. Avoid wearing loose clothing or PPE which could become snagged or entangled by moving parts. All operatives involved should be briefed and familiar with requirements defined within Winch Rope Replacement Procedure (KP-COMP-PRO-016)	5	2	10	Ensure underfoot surface is clean an free from slippery substances. Ensure take a knee or firm stance prior to commencing. Maintain communication with rig opera and ensure he can view drum vior board camera							
Handling or un-coiling twists or bird nesting in winch rope	Sudden los jerking of Ke uncoiling sudden tigh ro	s of control / elly bar whilst g resulting tening of the ope	Abrasion, tear, puncture, entrapment or crush type injuries. Rope striking or snagging sensors protruding from the mast	3	3	9	Avoid sliding rope through palm of hand. Always use hand over hand technique whilst feeding the rope. Use rigger (leather) type glove.	3	2	6	Avoid Stay vigil h	use of rubber type gloves. ant of rope condition to avoid andling frays or burs						



Standard risk assessment - Rigging/De-Rigging												
Generic Pilin	ng	Risk Ass	essment Number	Date		•	Prepared By		Rev	viewe	d By	Next Review By
Rigging / De-Rigg	ging	RA	-STD-RDR-01	31/07/2020		020	CK / SN			LC		27/01/2021
ACTIVITY	IDENTIFIED HAZARD COU		WHO OR WHAT ARD COULD BE		WHAT INITIAL RIS		CONTROL MEASURES		BIDUAL RISH R x LR= RR		F	URTHER ACTION
			HARMED	HR I		RR		HR	LR	RR		
Routine maintenance or during piling works (drilling / extracting)	Rotating part bar, auger, v trapping operative crushing/trap	s of rig, Kelly vinch drums, //striking s causing sping injuries	Piling operatives and other site personnel	4	3	12	Only qualified, experienced piling operatives to be in working area. Rig to be operated by qualified individual only. Rig to operate under guidance of qualified attendant. All maintenance to be conducted by qualified fitter, in accordance with operators manual and piling procedures. Exclusion zone to be established around working area with adequate safety signage displayed. Banksman only to approach the augerbucket or Kelly bar after clear communication between himself and the rig driver. 6 point PPE to be worn. (Hard hat, hearing protection, eye protection, gloves, hi-viz, safety boots).	4	2	8		



						s	standard risk assessment - CFA piling	By Reviewed By Next Review			
Generic Pil	ing Risk	< Asses	ssment Number		Date	•	Prepared By		Revi	ewe	d By Next Review By
CFA Piling		RA-S	STD-CFA-01	31	/07/20	20	CK / SN	RE	SIDU	LC AL	27/01/2021
ACTIVITY	IDENTIFIED HAZA	ARD C	WHO OR WHAT	HR	x LR=	RR	CONTROL MEASURES	HR	RISK x LR=	RR	FURTHER ACTION
	Flying debris - Eye dar	mage		HR	LR	RR		HR	LR	RR	
	/ body damage from splashes	m		4	3	12	When starting up ensure that the lance is stowed in the designated point, when in use always direct away from body. If equipment is faulty do not	4	1	4	
Use of jet washer to clean plant/equipment	Injury from high pres water	sure	Piling operative	5	3	15	use. Ensure that cleaning takes place in an area away from normal operations and other workers. Only competent persons to carry out the	5	1	5	
	Risk of long-term HA	AV's		4	3	12	work. Correct use of PPE (gloves, glasses, boots, sleeved clothing, hearing protection, helmet).	4	1	4	
	injury										
Operation and movement of tall plant, including Rigs, Cranes, MEWP	Plant/ Crane Instability to inadequately design constructed or mainta platform	y due Ined, ained	Operatives, Plant, Buildings, Services & Public	5	2	10	Pling Plant to be banked at all times. Plie mat to be constructed as per the design and installation requirements. Platform verification testing to be in place as well as signed FPS working platform certificate issued by PC prior to any works starting on site. Supervisor to conduct daily visual checks with weekly recorded checks as per FPS requirements. Regular maintenance to be carried out particularly after a significant weather event or any local excavation works within the platform area. Extents of piling mat to be agreed and communicated to the workforce and should extend 2.0m longer/wider than needed. Do not track over recently cast piles. No piling works to take place under/on a waterlogged platform	5	1	5	
	Slips, Trips and Fa	lls		3	3	9	Pile mat to be maintained regularly. Inspections of pile mat to be conducted periodically as work progresses by supervisor. Visual inspection to be conducted before work commences. Weakly recorded	3	2	6	
Walking around and working on the piling platform	Setting out pins/reb protruding above plat level	form	Site Personnel, Piling operatives	3	3	9	inspection to be conducted. Pile mat to be segregated from all over working areas with fencing and safety signage to be displayed. Protruding pins/rebar to have "mushroom" caps fitted. Cones to be placed on protruding pile locations or fenced off accordingly. Sprayed pile covers to	3	1	3	
	Wet concrete at grou level or falling/slipping open bore with/with concrete	te at ground g/slipping into with/without crete		be placed on freshly poured piles. Pile cover to be painted to aid visual detection.	3	1	3				
Building / Stripping	Death or crushing inju	uries	Operatives	5	2	10	Only trained and competent personnel under supervision to undertake task. Ensure gates are functioning correctly, ensure the correct pins are in place prior to lifting. Do not stand or place limbs between the auger and rig. Ensure all operatives involved are familiar with requirements defined within CFA Auger Assembly Procedure (KP-COMP-PRO-014)	5	1	5	Ensure Lift Plan is in place and properly reviewed
auger string	ding / Stripping uger string Using MEWP while Working at height		opcialites	4	4 2 8 MEWF basket. place place he		MEWP to have certificate of thorough examination and weekly checks in place. Competent and certified personnel. Use body harness connected to basket. Operate on level certified piling platform only. Rescue procedure in place and briefed to personnel. All tools to be tethered when working at height. Only having one piece of plant moving at any one time.	4	1	4	Only bring the MEWP into proximity of the auger / rig once the auger has been secured and rig movement has finished. Supervisor to monitor working area, ensure no-one working underneath and establish exclusion zones where necessary.
Auger Drilling & Extraction	Rotating parts leadin trapping/crushing inju or death	ng to uries	Operatives, Plant	5	3	15	Suitably designed guards and gates to be in place, physical exclusion zone to be in place around the auger. Works to take place under experienced supervision and direction of rig banksman. No operatives to be within the exclusion zone whilst the auger is rotating. Full 6 point PPE to be worn at all times	5	5 1 5		
Auger Drilling &	Debris falling from A leading to striking inj severe head injury or o	uger jury, Oj death	operatives, Plant, Public	5	2	10	Physical exclusion zone to be in place around the auger. Exclusion zone to be controlled by the rig banksman. Suitable auger cleaner to be in place and checked as part of the weekly plant maintenance sheets. Attendant excavator to assist in cleaning the auger where required. When working tight up against site boundary with public interface site specific risk assessment is required.	5	1	5	Where necessary additional controls to be established based on site specific RA & conditions.
Extraction	Service strike		Operatives, Plant	4	4	16	Permit to pile in place prior to piling. Permit and service drawing to be available on site. Do a visual survey of the area prior to piling. Only pile and undertake attendance works within the area specified under the permit and follow the controls specified. Any execution works to be carried out under supervision and under the control of a separate permit to dig	4	2	8	
	Hearing damage due t high noise levels of concrete pump	to the the	Operatives	4	2	8	Trained and experienced personnel only to operate the pump. Noise assessments to be conducted and recorded on machinery. Adhere to mandatory hearing protection policy, suitable exclusion zone and signage to be set up around the working area. Location of the pump to take into consideration site specific environment to minimise nuisance & disturbance. Pump and agitator to be regularly inspected and maintained with recorded inspections as per PUWER requirements.	4	1	4	
Pumping Concrete / Working with the	Reversing concrete tro trapping hazard betw truck and pump	ucks, veen	Operatives	4	4	16	Trained and experienced personnel only to operate the pump. Location of the pump & agitator to be suitably planned to minimise risks associated with access and reversing lorries. Vehicle to be banked by qualified banksman at all times, operative not to stand between the truck and the pump when the truck is reversing. Hi viz PPE to be worn.	4	2	8	
Agitator and associated Equipment	Blockages resulting in failure, concrete bei discharged under pres	hose ing ssure	Rig attendant	4	3	12	Concrete pump and concrete hoses to be primed with prima pump (or suitable cement grout if pump is hired in). 10mm aggregate should be used with first load, pump revs should be kept to a minimum until grout is visible exiting the lead auger. Once the entire line is primed, pump man should back pump an minimum 3 of times. Prima to be added via t-piece located at discharge hoses on pump or agitator.	4	2	8	
	Failure of concrete ho concrete discharged u pressure leading to inr injury	ises - under npact	Piling attendants	3	3	9	Ensuring priming process is followed. All hoses to be pressure tested prior to delivery. Pressure test certificates should be available on site prior to setting up. All hoses to be visually inspected weeky. Upper drop hose must be double bagged and checked regularly to ensure bagging is not slipping.	2	3	6	
	Concrete splashes lea to cement burns or o injury	ading eye	Operatives	4	3	12	COSHH assessments to be in place. Only trained and experienced operatives to operate the pump. Persons in vicinity of concrete pumping to wear 6 point PPE (including Long sleeve clothing and task specific gloves).	4	1	4	

					\$	Standard risk assessment - CFA piling	Reviewed By Next Review B					
Generic Pil	ing Risk As	sessment Number		Date	9	Prepared By	Reviewed By LC RESIDUAL RISK			d By Next Review By		
CFA Piling	R	A-STD-CFA-01	31	/07/2	020	CK / SN	P	SIDU	LC	27/01/2021		
ACTIVITY	IDENTIFIED HAZARD	WHO OR WHAT COULD BE HARMED	INI ^T HR HR	FIAL F x LR= LR	RISK RR RR	CONTROL MEASURES	HR	RISK x LR=	RR	FURTHER ACTION		
Pumping Concrete / Working with the		Operatives	4	4	16	A firm, level base must be prepared in advance for lifting the drum into place. On going inspection of the ground conditions, particularly during inclement weather is important. Report any deterioration of the ground immediately. All pumping related equipment/agitators to be inspected as per PUWER requirements.	4	1	4			
Agitator and associated Equipment	Major Injury or crushing injuries					A firm level base must be prepared in advance for loading the drum into place. On going inspection of the ground conditions, particularly during inclement weather is important. Report any deterioration of the ground immediately						
		Pump man & General Operatives,	4	4	16	Guards will be fitted around the perimeter of the drum to prevent access whilst the drum is rotating. The guards must not be removed whilst the drum is in operation.	4	1	4			
	Compressed air injuries due to concrete line blockage	Operatives, public	4	4	16	Correct use of whip checks, r clips and pins. Ensure the valve at the back of the blowout gun to control the supply is fault free, able to stop the supply in case of blockage. Split the lines as per blowing out procedure. Ensure blowing out/blockage removal works are undertaken by trained and experienced operatives and that works are carried out under supervision.	4	1	4			
Blowing out the rig and concrete lines	Being struck by the blowout ball or concrete	Operatives, public	3	4	12	Concrete blowing out procedure (KP-COMP-PRO-037) to be followed. Full PPE to be worn. Maintain exclusion zones. Blowout chamber to be suitably maintained to ensure fitness for purpose.	3 1 3		3			
	Manual Handling of concrete hoses & equipment causing muscular/skeletal injuries	Operatives	3	4	12	Concrete blowing out procedure (KP-COMP-PRO-037) to be followed. Only experienced and trained operatives to carry out activity with works carried out under supervision. Use site mechanical machinery (excavator, lifting equipment) to minimise manual activity wherever possible	3 2 6		6			
Blowing out the rig	Hose bursting leading to concrete ejected at high pressure causing injury or damage to property	Operatives, Public	4	3	12	Hoses to be tested prior to being used on site. All hose lines to be inspected daily. Crossing points for hoses on the ground to be either dug in or protected by ramps to ensure they are not tracked over by plant on site. Clamps to be checked with R clips in place. Concrete hose set up around the pump/agitator area to be as per company procedure.	4 2 8		8			
and concrete lines	The air line from the compressor rupturing or striking personnel on site	Operatives	4	4	16	Whip checks to be used between all joints in the lines. Only experienced and trained personnel to operate equipment. Equipment to be checked before use and regularly inspected as per PUWER requirements. Works to be carried out under supervision	3	3 1 3				
	Working at height to access blockage, fall from height leading to serious injury or death	Operatives	4	4	16	Ensure the process is suitably planned and communicated. Wear suitable harness/restraint lanyard when working above ground, choose appropriate MEWP (Cherry picker), Harness inspected regularly, MEWP to comply with PUWER.	4	1	4			
Clearing a blockage in the Lines	High pressure contained in the lines / uncontrolled release leading to flying debris & personal injury	Operatives & Public	4	4	16	Ensure the clearing process is suitably planned, communicated and controlled under supervisor instruction. Work in accordance with company procedure	4	2	8	Wherever possible, avoid the clearance of blockages through the use of compressed air		
	Hammering /striking injury & risk of flying objects (pins, tools etc.)	Operatives	3	3	9	Ensure that tools are tethered. For risk of any objects flying from height ensure that suitable physical exclusion area is in place	3	1	3			
	Striking Injury, bruising or fracture to hands	Setting out engineer & Piling operatives	3	3	9	Suitably experienced and competent personnel to undertake the task. Works to take place under adequate supervision. Correct use of PPE.	3	1	3			
Setting Out activities & installing setting out Pins	Slips, trips and falls leading to sprains, breaks, bruising. When working around live plant - crushing injury or death	All operatives & personnel on site	4	3	12	Only issued or approved footwear to be worn. Designated walking routes to be adhered to. Pile mat to be inspected and maintained. Operatives not to run or walk with hands in their pockets. Ensure good quality house keeping at all times. Site setting out locations to be managed to ensure that they are away from traffic routes and not beneath lifting zones	4	1	4			
	Carrying of heavy equipment, manual handling injury	Setting out engineer	3	3	9	Manual handling assessment to be conducted. Individual to assess their own physical condition/their own capability and the task at hand. 6 point PPE to be worn. Pedestrian routes to be kept clear of obstructions, mechanical means to lifting to be utilised wherever appropriate.	3	1	3			
Cage Splicing	Trapping of hands / fingers in cage or whilst completing splice	Piling operatives	4	4	16	Bespoke cage splicing system such as Easi lok or super latch to be used as the default system to minimise the risk of hands/arms inside the reinforcement cages. CPCS banksman to control the operation using clear signals, correct use of PPE. If splicing using bull-dog grips then site specific risk assessment will be required together with temporary works assessment to give specific guidance.	4	2	8			
Splicing, Installing and trapping off dywidag bars	Trapping/pinching of hands, fingers and feet (crush type injuries). manual handling related injuries.	Piling operatives and slinger signallers	3	3	9	Two operatives to untie and separate dywidag bundles. Give preference to utilising a thicker (i.e. rigger type glove) whilst handing. Utilise attending excavator to move and position bars on ground. Once bar is plunged and second trapping bar is tied off, rig attendant to ensure all ops are standing clear whilst bar is lowered. A site specific manual handling risk assessment is required for assembling Dywidag bars	1	3	3			
Working with Fluid	Cement Burns	Operatives	3	2	6	Correct task specific PPE to be worn. Wash grout or concrete off skin immediately after contact.	3	1	3			
concrete	Eye damage from splashes	Operatives	2	4	8	Safety Glasses to be worn at all times while concreting.	2	1	2			
Operatives working on a potentially uneven surface	Slips, trips and falls.	Operatives	3	3	9	Wear lace up ankle high boots. Take care when traversing the platform. Use attendant excavator to maintain a flat platform.	3 2 6 Whee			Where possible use designated walkways around site.		



	Standard risk assessment - CFA piling Generic Piling Risk Assessment Number Date Prepared By Reviewed By Next Review By													
Generic Pi	ling	Risk As	sessment Number		Date	e	Prepared By		Revi	ewe	d By	Next Review By		
CFA Piling	1	R	A-STD-CFA-01	31	/07/20	020	CK / SN			LC		27/01/2021		
ACTIVITY	IDENTIFIE	D HAZARD	WHO OR WHAT COULD BE HARMED	INIT HR	FIAL F x LR=	RISK = RR	CONTROL MEASURES	RE HR	SIDU RISK x LR=	AL RR	F	JRTHER ACTION		
				HR	LR	RR		HR	LR	RR				
Manual Handling (Lifting equipment)	Back or li	mb injury	Operative	3	3	9	Assess the load prior to lift. Use mechanical assistance wherever possible. Lift with the legs and avoid twisting the body.	3	2	6				
	t washer to plant & Vight and the second sec			4	3	12	4 1 4							
Use of jet washer to clean plant & equipment	Injury from high pressure water Risk of long term HAV's injury		Site personnel/Operatives	5	3	15	Ensure that cleaning takes place in an area away from normal operations and other workers. Only competent persons to carry out the work. Correct use of PPE (gloves, goggles, full sleeved overalls, no bare arms)	5	1	5				
equipment				4	3	12		4 1 4						
	Slips, Trip	s and Falls		3	3	9	Pile mat to be maintained regularly. Inspections of pile mat to be conducted periodically as work progresses by supervisor. Visual	3	2	6				
Walking around and working on the piling platform	Setting out pi above pla	ins protruding tform level	Site Personnel, Piling operatives	3	3	9	inspection to be conducted before work commences. Weekly recorded inspection to be conducted. Pile mat to be segregated from all over working areas with fencing and safety signage to be displayed. Protruding pins/rebar to have cass fitted. Cones to be placed on protruding pile	3	1	3				
	Wet concre level or open cone	te at ground bore down to crete		3	2	6	locations or fenced off accordingly. Pile covers to be placed on freshly poured piles. Pile cover to be painted to aid visual detection.	3	1	3				
Using abrasive wheel to modify cages/cutting rebar r	Incorrect or p damaged w causing who resulting in face	boor use of or heel for task eel to shatter injuries to body	Operatives or damage to	3	3	9	Trained and certified operative to operate / use equipment, hot works overall is along prior to operate of works.	3	2	6				
	Sparks and signiti igniti materials/clot in fire c	face/body Sparks and shards causing ignition to materials/clothing resulting in fire or burns	plant or property	4	3	12	permit in place prior to start of works, fire prevention equipment available at work location		1	4				



					Sta	Indarc	I risk assessment - Plant maintenance						
Generic Pili	Risk Assessment Number Date ance RA-STD-PM-01 31/07/2020						Prepared By		Revi	ewed	d By	Next Review By	
Plant Maintenan	ice	F	RA-STD-PM-01	31	/07/20)20	CK / SN			LC		27/01/2021	
ACTIVITY	IDENTIFIE	D HAZARD	WHO OR WHAT	INIT HR	'IAL R x LR=	ISK RR	CONTROL MEASURES	RESII HR :	DUAL x LR=	RISK RR	FUR	THER ACTION	
				HR	LR	RR		HR	LR	RR			
	Crushing w machine to when unload from tr	hen moving work area or ding machine ansport	Fitter and Site Operatives	5	3	15	No lone working during unloading operations. Plant shall be under the guidance of a banksman at all times who shall maintain line of sight with driver. Consult the Operating Manual relevant to the rig for unloading and loading of plant. Driver of Rig and any other plant shall be experienced and certificated. Valid Working Platform Certificate shall be in place	5	1	5			
Maintenance & Renair	Contact w pulleys, fans and othe mechan	ith rotating , shafts, belts er moving ical parts	Fitter and Site Operatives	4	3	12	Ensure no loose clothing is worn, ensure correct specific PPE is worn for the task. Hands and feet to be kept well clear of working and/or moving parts. Engine and power source to be isolated/tured off during maintenance/inspections and repairs. No loose jewellery to be worn around the neck or hands/wrists. Ensure all fitted guards are in place and are operable	4	2	8			
mainenance a repair	Burns from contact hot machine compor		Fitter and Site Operatives	4	3	12	Ensure engine components and exhaust manifolds are allowed to cool	4	2	8	Ensure con kept av	nbustible materials are way from machine	
	hot machine compor			Ensure leather gloves are worn if hot surfaces cannot be avoided					compartr	nents to prevent fire			
	Crushing injuries when installing/removing larg components such as engine blocks, transmissions, masts, augers etc.		Crushing injuries when installing/removing large components such as engine blocks, transmissions, masts, augers etc.		hen arge as Fitter and Site Operatives 5 3 15 sts,		15	Ensure Lift Plan is written and specific to task. Stay clear of components when being lifted. Use correct chains/strops and lifting points. Do not remain underneath load when being lifted. Crane shall be operated by experience and certificated and trained operator	5	1	5		
Maintenance & Repair	Musculoske due to Man	eletal Injuries ual Handling	Fitter and Site Operatives	4	2	8	Use mechanical lifting aids where possible. Review lifting operations and ensure Manual Handling Assessment carried out before commencing work. Consider the shape and composition of the item to be lifted	4	1	4			
	Struck by H when clean	Struck by High water jet when cleaning machine		3	3	9	Correct PPE to be worn. Only point lance at the object to be cleaned. Ensure equipment is fully checked as per PUWER requirements. Stand a suitable distance from object being cleaned to ensure minimal splashback	3	1	3			
	Struck by h hydraulic an when remo testing or mad	igh pressure d other fluids wing hoses, running the chine	Fitter and Site Operatives	5	3	15	Ensure all pressures from hoses are released prior to replacing/repairing. Ensure lines are capped/plugged or connected. Keep hands away from high pressure leaks. Wear correct and appropriate PPE including eye protection. Ensure hydraulic lines are tied back and secured when removed	5	2	10			
Maintenance & Repair	Struck by G and doors wh compa	uards/Panels ten working in irtments	Fitter and Site Operatives	4	2	8	Ensure guards and panels are adequately supported during removal and gaining access to compartments Ensure all doors and panels that remain fixed and hinged are adequately secured and fixed back	4	1	4			
	Struck by falling debr		Fitter and Site Operatives	4	3	12	Ensure engine compartments are cleaned and the work area is clear and visible. Remove spoil from augers and clean mast before attempting maintenance and repairs. Segregate the working area with pedestrians barriers.	4	1	4			
Maintenance & Repair	such as contaminated waste or soil, landfill waste, leachate, asbestos, metals and chemicals		Fitter and Site Operatives	4	3	12	Ensure the working area on the plant is cleaned thoroughly prior to commencing maintenance and or repairs. Wear appropriate PPE for prevaiing site conditions or as defined in any Risk Assessment in relation to environment.	4	2	8	A specific Environr developed	Risk Assessment and nental Plan shall be I for sites that contain	
	Fall from heig Resulting in i	t from plant	Fitter and Operatives	5	4	20	chains above fitted ladders Use MEWPS to access high external areas of plant Harness to be worn when using MEWPS	5	2	10	haza contamina	dous waste and ted ground conditions	
Maintenance & Repair	Use of I	Use of MEWPS Fitter and Operatives 5 3 15 Only trained, certificated and competent persons to use MEWPS Ensure working area is clear from obstacle and on stable ground the sure MEWP is inspected and maintained correctly. Ensure appropriet restraint harmess is well maintained or correctly by trained opera Do not stare tools inside the basket Do not stand on the guard rails to reach distant objects Ensure rescue plan is written and communicated Podium steps to be considered on an individual site wide basis only		Only trained, certificated and competent persons to use MEWPS Ensure working area is clear from obstacle and on stable ground Ensure MEWP is inspected and maintained correctly. Ensure appropriate restraint harness is well maintained and wom correctly by trained operatives Do not store tools inside the basket Do not stand on the guard rails to reach distant objects Ensure rescue plan is written and communicated Podium steps to be considered on an individual site wide basis only.	5	1	5						



					Sta	andar	d risk assessment - Lifting operations						
Generic Pilir	ng	Risk As	sessment Number	I	Date		Prepared By		Revi	ewe	d By	Next Review By	
Lifting Operation	าร	F	RA-STD-LO-01	31/	/07/20	20	CK / SN			LC		27/01/2021	
ACTIVITY	IDENTIFIE	D HAZARD	WHO OR WHAT COULD BE HARMED	INIT HR :	'IAL R x LR=	ISK RR	CONTROL MEASURES	RESIL HR :	DUAL x LR=	RISK RR	FURT	HER ACTION	
				HR	LR	RR		HR	LR	RR			
Lifting Operations	Falling objects Failure of lifting equipment Damage to crane and operatives due to crane overturning		Cts Operatives, public 5		3	15	Site Specific Lift Plan to be written and approved by trained and competent appointed person. Operations to be managed by Lifting Supervisor and as per the lift plan. Only use trained operatives for singing operations, ensure suitability of lifting equipment. Ensure lifting plan is appropriate and piling platform is designed to accommodate any loads imposed. Ensure an exclusion zone is in place beneath the load under control by the slinger/piling team.	5	2	9			
			Failure of lifting equipment		Operatives, public	5	з	15	Site Specific RA to be written. Ensure Illting equipment is tested and certified to carry the loads imposed. Weekly LOLER checks to be carried out and recorded. Follow the lift plan.	5	1	5	Good practic rebrief speci periodically t process and
			age to crane and tives due to crane Operatives, public overturning		3	15	Site Specific RA to be written. Lift Plan to be developed by Appointed Person. Detailed RAMS for rigging up crane WPC to be in place and inspected daily.	5	2	8			



RISK ASSESSMENT

Standard Piling Activities

Piling Attendance

Approvals										
	Name	Position	Signature	Date						
Prepared by	Charlie Kilkenny	Health and Safety Advisor	X	17/12/2019						
Reviewed by	Lee Cain	Operations Director	het	17/12/2019						
Approved by	Stuart Norman	Managing Director		17/12/2019						

Amendment record										
Reference number	Context	Revision	Date							
PA-01	Periodic update and review	01	17/12/2019							



Standard risk assessment - Piling attendance Generic Piling Risk Assessment Number Date Prepared By Reviewed By Next Review														
Generic P	iling	Risk	Assessment Number		Date)	Prepared By	-	Revi	iewe	d By	Next Review By		
Piling Attend	ance		RA-STD-PA-01	16	/12/20)19	CK / SN			LC		16/06/2020		
ACTIVITY	IDENTIFIED H	IAZARD	WHO OR WHAT COULD BE HARMED	INIT HR	TIAL F x LR=	RISK RR	CONTROL MEASURES	RE HR :	SIDU RISK x LR=	IAL	FU	RTHER ACTION		
				HR	LR	RR		HR	LR	RR				
	Debris proje Impact type	ctiles. injury.	Persons in close proximity when excavator is operating	3	2	6	Exclusion zones to be suitable considered and adhered to. Full 5 point PPE to be worn.	3	1	3				
Excavator attendance to Piling Rig	Slewing / trac excavato Crush, impa entrapment type Collison with	king of or. act or e injuries. Plant	Any persons on site. Other items of plant, vehicles or infrastructure resulting in damage.	4	3	12	Plant/Pedestrian exclusion zones to be established or site specific risk assessment required. Excavator only to be operated by trained and competent person. Where the situation arises where an operative has to work within the slew radius of an excavator, a site specific Risk Assessment must be conducted to define how the excavator will be controlled (adhere to thumbs up rule). Adequate warning signage to be displayed.	4	1	4	Specific op bri	erations of excavator to be efed during DABs		
	Unauthorised us causing damage equipmen infrastruct Serious/fatal i	e of plant e to plant, t or ure. injuries	Site personnel/plant, equipment/structures or buildings. Trespassers on site outside of working hours	4	3	12	Door to be kept locked, keys to be kept locked away/secure when not in use. Plant only to be used by trained and authorised persons under the control of a trained and competent person.	4	1	4				
Local Excavations by	Collision with ot vehicles, infrastr site personnel damage or seri injuries	her plant, ructure or causing ous/fatal	Site personnel/plant, equipment/structures or buildings	5	3	15	Machines to be operated by qualified and experienced operatives (In date CPCS for type and size of machine with correct endorsements as required). Machine only to track under guidance/instruction of qualified attendant or within designated plant routes. Working area to be clearly defined/segregated where practicable. Traffic routes/plans to be followed. Machines to be regularly inspected and recorded.	5	1	5				
attending machine	Failure of to attachments re- them falling from causing damage equipment or se injuries	ols or sulting in n machine e to plant, rious/fatal	Site personnel/plant, equipment/structures or buildings	4	3	12	Only qualified operatives to control plant and machinery. Regular inspections of PUWER and LOLER equipment to be conducted and recorded. Exclusion zones to be established if practicable. Attendants to monitor works at all times. Area to be segregated if practicable. S point PPE to be worn by all site personnel. All works to be overseen by piling supervisor.	5	5 1 5					
Local Excavations by attending machine	Striking of buried causing explosic of gas or pres water.	d services on/release surised	Site personnel/plant, equipment/structures or buildings. Interruption to site or 3rd party services.	3	3	9	Ground Penetrating Rader (GPR) survey should always be considered, prior to breaking ground. Suspected / known services must be physically located, diverted / isolated. Any services planned to remain must be physically located, routes then identified at surface level. Works only to commence once valid Permit to dig/break ground issued with appropriate service drawing appended. Plant only to be operated by trained and competent operatives, training certificates endorsed appropriately for size of plant. Attendant to be in place at all times to monitor works.	3 2 6 If KE service service street we cont			If KBP a services, or trenches, w street works control o	e locating and exposing carrying out trial holes/slit rks must be undertaken by trained operatives under the of a street works trained Supervisor		
Moving materials and aggregate around the site.	Falling debris damage plant/equipm causing serior injuries to att operative	causing to nent or us/fatal ending es	Site personnel/plant, vehicles and equipment	4	3	12	Works to be undertaken as per TMP. Loading/tipping area to be segregated and kept clear of site personnel where practicable. Operation to be conducted under guidance from a trained and competent attendant. Loading to take place on firm level ground where possible. Size and type of vehicle / plant to be suitable for to the environment.	4	4 1 4		4 1 4			
Loading and unloading (muck away)	Overturning o resulting in dar plant/equipm structure or seri injuries	of plant mage to nent or ious/fatal	Site personnel/plant, equipment	5	2	10	Muck-a-way area to be kept clear of site personnel. Operation to be conducted under guidance from a banksman. Max capacity of vehicles not to be exceeded. Loading to take place on firm level ground. Vehicle & excavator to be suitable for the load and site environment. Activity to be supervised. As a preference Dumpers are to tip at base of stock piles, attending excavator to maneuverer spoil and maintain stockpile. Seatbetts to be worn whilst plant is operating	5	Size appro 1 5 conditi move w		Size of s appropria conditions, movemen workf	tockpile to be managed ely depending on the site considering access, plant ts and safe access to the acc for the workforce.		
Use of excavator to conduct construction and maintenance of Pile Mat	Unstable ground plant/machin tip/overtum res damage to p equipment or injuries	d causing nery to sulting in plant, serious	Site personnel/plant, equipment and/or buildings/structures	5	3	15	Ground to be assessed daily for suitability of plant movement. Plant only to be operated by trained and competent personnel. Exclusion zones/segregation to be established where practicable. Works to be conducted under supervision at all times.	5	1	5				
Construction of piling and access ramps	Overturning of other plant and e	rigs and equipment	Personnel and operators	5	3	15	Temporary works design to be obtained and all responsibilities assigned. Suitable material to be selected and used. Maintain piling and access ramps in good condition, with daily inspections. Where possible and practicable, place concrete binding to the surface of the ramps. Robust means of edge protection at all times. TWC to conduct and record weekly platform inspection.	5	1	5				
	Injury / damag projectile	ge from es		4	3	12		4	1	4				
	Injury / damag	ge from	Operator alto / 2rd no	4	4	16	persons to operate the plant. Correct use of PPE (gloves, goggles, full sleeved overalls, no bare arms).	4	1	4				
Use of jet wash	Manual hand	dling /	personnel, members of the public.	-	-		Lance to be in the stowed position prior to starting ignition. HAV risk assessment to be conducted and exposure times recorded and	$\left - \right $						
	dropping of to	e hitch.		3	3	9	Montorea. Operatives to seek assistance when hitching / unhitching toe hitch. Brakes to be applied and checked where necessarv	3	1	3				
	HAV related d	isorder.		4	1	4		4	1	4				
	Collisions with s causing dar	site traffic mage	Plant, vehicles or infrastructure	4	3	12		4	1	4				
Cleaning site and highways with a road	Collision with causing seriou	public is injury	Members of the public on	4	3	12	Reversing of road sweeper to be carried by using a trained and competent attendants. Vehicles checked daily, audible reversing warnings. Supplier to be on the approved sub-contractor/supplier list. Obtain audionas of strains	4	1	4				
sweeper	and/or de Collision wit	ath h site	Operatives and other	5	3	15	competence.	5	1	5				
Evolution of short f	personn	el	persons working on site					-						
Hydraulic / road sweeper content spills.	Pollution or conta Spillage, fume	amination. s or fire.	Site personal. Water, sewer system, ground.	4	3	12	COSHH assessment to be carried out for all substances in use. Task to be carried out by suitably trained and competent persons. 5 point PPE to be worn. Spill kits / plant nappies to be made available. Works to take place away from sources of heat.	20 e e 3 2 6						



						Stand	ard risk assessment - Piling attendance							
Generic P	iling	Risk	Assessment Number		Date)	Prepared By		Revi	ewe	d By	Next Review By		
Piling Attend	ance		RA-STD-PA-01	16	/12/20)19	CK / SN	1		LC		16/06/2020		
ACTIVITY	IDENTIFIED H	IAZARD	WHO OR WHAT COULD BE HARMED	INIT HR	TIAL R x LR=	RISK RR	CONTROL MEASURES	RE HR :	SIDU RISK x LR=	AL RR	F	JRTHER ACTION		
				HR	LR	RR		HR	LR	RR				
Decanting flammable fuels and gasses	Death. serious respiratory / skin Fire, explosion, r over exposure o gasses. Skin disorder prolonged cont substance	s injury. disorders repeated / of fuels or s from tact with es.	Operatives	4	4	16	Fuels to be stored as per manufactures instructions in a designated, vented and bunded COSHH store. No refuelling to take place in the vicinity of sources of heat or source of ignition. No Smoking, eating or drinking whilst handling. Engines must be switched of when refuelling takes place. No material or equipment is to be used as an improvised container or funnel. A fire extinguisher must be present during the operation. AFFF foam powder or carbon dioxide must be available.	4	1	4	COSHH as for the store	sessment must be conducted age as well as use of all fuels.		
Spillage of Fuels	Skin disorder prolonged cont substance Pollution or conta Spillage, fumes	rs from tact with es. amination. s or fire.	Operatives Site personal. Water, sewer system, ground.	res nal. 4 3 12 Fuel to be stored within capacity of the specified limits of the approved container. Large storage tanks to be double bunded. All refuelling accessories to be kept within the bund walls when not in use. Any spillar to be reported immediately to a supervisor.		4	1	4						
Setting Out	Striking Injury, b fracture to h	ruising or hands	Setting out engineer & Piling	3	3	9	Suitably experienced and competent personnel to undertake the task. Equipment is sound and serviceable. Correct use of PPE.	3	1	3	Enginee location wit and ag	s to discuss planned work h supervisor / plant attendant pree safe system of work.		
Setting Out	Plant movements - Striking, crushing, impact related injury.	Plant moveme Striking, crushing related injur	Plant movements - Striking, crushing, impact related injury.	Plant movements - triking, crushing, impact related injury.	operatives	4	3	12	Only issued or approved footwear to be worn. Designated walking routes to be adhered to. Pile mat to be inspected and maintained. Ensure good quality house keeping at all times.	4	1	4	Engineer sh exclusio	ould ideally site up a physical 1 zone around his worksite where possible.



Risk Ass	isk Assessment Project Name: Bedford Passage - Phase 2 MS or TBS Name: CFA Piling RA Written by:																
Project	Name:	Bedford F	Passage - Pha	ase 2		MS or T	BS Na	ame:		CFA Piling				RA Writte	en by:		
Acti	vity:	Site Spec	cific Risk Asse	essment		MS or TB	S Nu	nber:	:	KP-P321-MS	-003			H White			
						k	ΈY							•			
		Sev	verity			Likel	ihoo	ł				Risk R	ating				
	1	Negligible	4	Major	1	Rare		4		Likely	15 to 25	Intolerable	4 to 6	Moderate			
	2	Minor	5	Catastrophic	2	Unlikely		5	Aln	nost Certain	8 to 12	Substantial	1 to 3	Tolerable			
	3	Moderate			3 Who or wi	Possible	Ric	k Raf	ling						Ris	k Rat	ting
Operatio	on / Task	Ha	azards Identi	fied	harmed	and how	S		RR		C	ontrol Measur	es		S	L	RR
Working clos boundary	e to site	Lifting operat falling objects	ions near the s, statutory nu	hoarding, isance	Personnel or outside site o hoarding	vehicles r near the	5	3	15	⁵ Hoarding to be minimum of 2.4m high when close to KB works. Aware of wind speeds and directions when close to site boundary							10
General Ope	rations	High vehicle work area	movement on	piling mat and	Operatives an the working a	nd personnel in rea	5	4	20	Vehicles banked at all times by trained competent personnel, Thumbs up procedure, regular mat quality inspections, adhere to logistics / traffic management plan					5	2	10
General work	ζ.	Covid-19			Site team		4	3	12	12 Work to the latest keltbray/ mace / government guidelines						2	6
Excavating g trench	uidewall	Asbestos			Exposure to a contaminated	asbestos materials	5	2	10	The risk to ex asbestos has to undergo as	posure has b been known sbestos awar	een classified to be on the si eness training.	as minimal h te. Preferable	owever e if operatives	4	2	8

Risk Ass	sessment																
Project	t Name:	Bedford I	Passage - Pha	ase 2		MS or T	BS N	ame:		CFA Piling				RA Writte	en by	:	
Acti	ivity:	Site Spec	cific Risk Asse	essment		MS or TB	S Nu	mber	:	KP-P321-MS	-003			H White			
						ŀ	(EY								-		
		Se	verity	1		Like	lihoo	d	1			Risk F	lating				
	1	Negligible	4	Major	1	Rare		4		Likely	15 to 25	Intolerable	4 to 6	Moderate			
	2	Minor	5	Catastrophic	2	Unlikely		5	Air	nost Certain	8 to 12	Substantial	1 to 3	l olerable			
	3	Moderate			ہ Who or w	hat could be	Ris	k Rat	lina						Ris	k Ra	tina
Operatio	on / Task	Н	azards Identi	fied	harmed	and how	S	L	RR		C	ontrol Measur	es		S	L	RR
Drilling Piles		Male pile ver	ticality		Basement sp	pace	4	3	12	Piling sequence to be such that female piles are cut before the female concrete has achieved a significant strength. Cubes to be takenn from female piles and tested at 2, 3, 4, 5, 7, 14 to monitor strength gain of the P280 mix. Lead augers to be checked for wea to teeth and diameter							4
Drilling next t boundary	o site	Spoil going o	over the hordir	g	Persons/ veh building close hoarding	nicles or e to site	5	3	15	Spoil to be monitored so that it does not build up inside and the hoarding or travel up the augers when concreting. Auge cleaner to be checked to be working effectivly and drilling to stopped whilst excavator clears augers if need be. Monitor w direction and speed.					5	1	5

Appendix C – COSHH Assessments



AUSblue AdBlue

INGREDIENTS			CAS NO	%	8HR OEL				
urea			57-13-6	30-40	-				
water			7732-18-5	>60	-				
GHS	DG		PROPERTIES						
		UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not		Liquid. Mixes with wate	r.Does not burn.				
Not Applicat	ble	Applicable	EMERGENCY						
		Subsidiary Risk: Not Applicable Packing Group: Not Applicable							
ΗΕΔΙΤΗ ΗΔ7Δ			FIRST AID						
TIERETTTTAEF			Swallowed:	Rinse mouth with water.					
Signal word:				Wash with running wate	vith running water. For discomfort seek medical				
Hazard	Not Available		Eye:	advice.					
PRECAUTION	S FOR USE		Skin:	Remove contaminated of water.	clothing. Wash with soap &				
			Inhaled:	arm.					
			Advice To Doctor:	Treat symptomatically.					
Appropriate			Fire Fighting:	Keep surrounding area	cool. Water spray/fog.				
engineering controls:	General Exhaust Ventilation ac	dequate.	Spills and Disposal:	Absorb with dry agent.	Stop leak if safe to do so.				
Glasses:	Consider chemical goggles.		SAFE STORAGE WITH OTHER CLASSIFIED CHEMICAL						
Gloves:	1.BUTYL 2.NEOPRENE 3.VIT	ON							
Respirator:	Particulate. (AS/NZS 1716 & 1 149:001, ANSI Z88 or national	715, EN 143:2000 & equivalent)							
Storage and Transportation:	Store in cool, dry, protected are	ea.	+ + + + X — Must not be stored together						
Fire/Explosion Hazard:	Toxic smoke/fumes in a fire.		 May be stored to May be stored to 	ogether with specific preventio ogether	ons				

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Chemwatch:	4696-32
Print Date:	24/06/2021
Issue Date:	01/11/2019

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G

Caltex TT Super Two Stroke

HEALTH HAZARD INFORMATION

Fire/Explosion

Hazard:

INGREDIENTS	CAS NO	%	8HR OEL
middle distillate	68476-34-6	5-15	-
residual oils, petroleum, solvent-dewaxed	64742-62-7	}70-90	-
paraffinic distillate, heavy, solvent-dewaxed (severe)	64742-65-0.	}	-

HS	DG	
		UN No: Not Applicable Hazchem Code: Not
~		Applicable
		DG Class: Not
	I.	Applicable
		Subsidiary Risk: Not
		Applicable
		Packing Group: Not
		Applicable

PROPERTIES



Liquid. Does not mix with water. Floats on water.Combustible.

EMERGENCY

	реф		Â
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FIRST AID

Swallowed:	Contact Doctor or Poisons Centre. Give glass of water.
Eye:	Wash with running water.
 Skin:	Remove contaminated clothing. Wash with soap & water.
Inhaled:	Fresh air. Rest, keep warm. If breathing shallow, give oxygen. Medical attention.
Advice To Doctor:	Emesis generally unnecessary. Debride for subcutaneous injection.
Fire Fighting:	Foam.
 Spills and Disposal:	Eliminate ignition sources. Absorb with dry agent. Stop leak if safe to do so. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water and detergent.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



0 - May be stored together with specific preventions

- May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Chemwatch:	65298
Print Date:	24/06/2021
Issue Date:	01/11/2019

Danger Signal word: Hazard H350 May cause cancer. statement(s): **PRECAUTIONS FOR USE** Appropriate engineering General Exhaust Ventilation adequate. controls: Glasses: Not normally required When handling larger quantities: Gloves: PVC chemical resistant type. Type A-P Filter of sufficient capacity. (AS/NZS 1716 & **Respirator:** 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent) Store in cool, dry, protected area. Dispose of this Storage and material and its container at hazardous or special **x** — Must not be stored together Transportation: waste collection point. Keep out of reach of children.

> Keep away from food, drink and animal feeding stuffs. Vapours/gas heavier than air. Toxic smoke/fumes in a

fire. Dispose of this material and its container at

hazardous or special waste collection point.

Caltex Volvo Diesel Engine Oil VDS-3 15W-40

INGREDIENTS	CAS NO	%	8HR OEL
paraffinic distillate, heavy, hydrotreated (severe)	64742-54-7.	>50	-
zinc dialkyl dithiophosphate	68649-42-3	0-1	-

GHS DG UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not Applicable Subsidiary Risk: Not Applicable Packing Group: Not Applicable

HEALTH HAZARD INFORMATION Signal word: Warning H336 May cause drowsiness or dizziness. Hazard H412 Harmful to aquatic life with long lasting effects. statement(s): H319 Causes serious eye irritation. **PRECAUTIONS FOR USE** Appropriate Local Exhaust Ventilation recommended. engineering controls:

Consider chemical goggles.

PVC chemical resistant type.

equivalent)

collection point.

Type A-P Filter of sufficient capacity. (AS/NZS 1716 &

1715, EN 143:2000 & 149:2001, ANSI Z88 or national

Store in cool, dry, protected area. Dispose of this

material and its container at hazardous or special

waste collection point. Keep out of reach of children.

Toxic smoke/fumes in a fire. Dispose of this material

and its container at hazardous or special waste

Glasses:

Gloves:

Respirator:

Storage and

Transportation:

Fire/Explosion

Hazard:

PROPERTIES



Liquid. Does not mix with water. Floats on water.Combustible.

EMERGENCY



FIRST AID

Swallowed:	Give water (if conscious). URGENT MEDICAL ATTENTION.
Eye:	Wash with running water.
Skin:	Wash with soap
Inhaled:	Fresh air. Rest, keep warm. If breathing shallow, give oxygen. Medical attention.
Advice To Doctor:	Emesis generally unnecessary. Debride for subcutaneous injection. Evaluate for respiratory distress. Consider lavage with cuffed tube. NO adrenalin.
Fire Fighting:	Foam.
Spills and Disposal:	Eliminate ignition sources. Absorb with dry agent. Stop leak if safe to do so. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



- Must not be stored together

0 - May be stored together with specific preventions

- May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Chemwatch:	28-6415
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Caterpillar Hydraulic Oil 10W

INGREDIENTS	CAS NO	%	8HR OEL
distillates, petroleum, light, hydrotreated	64742-47-8	65	-

GHS		DG	
	>		UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not Applicable Subsidiary Risk: Not Applicable Packing Group: Not Applicable
HEALTH HAZA	ARD IN	FORMATI	ON
Signal word:	Dang	er	
Hazard statement(s):	H304	May be fata	I if swallowed and enters airways.

PRECAUTION	S FUR USE
Appropriate engineering controls:	General Exhaust Ventilation adequate.
Glasses:	Consider chemical goggles.
Gloves:	PVC chemical resistant type.
Respirator:	Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Storage and Transportation:	Store in cool, dry, protected area. Dispose of this material and its container at hazardous or special waste collection point. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs.

Toxic smoke/fumes in a fire. Dispose of this material **Fire/Explosion** and its container at hazardous or special waste Hazard: collection point.

PROPERTIES



Liquid. Does not mix with water. Floats on water.Combustible.

EMERGENCY



FIRST AID

Swallowed:	Give water (if conscious). Seek medical advice. Do NOT give milk or oil. Do NOT give alcohol.
Eye:	Wash with running water.
Skin:	Remove contaminated clothing. Wash with soap & water.
Inhaled:	Fresh air. Rest, keep warm. If breathing shallow, give oxygen. Medical attention.
Advice To Doctor:	Evaluate for respiratory distress. Consider lavage with cuffed tube. NO adrenalin.
Fire Fighting:	Foam.
Spills and Disposal:	Eliminate ignition sources. Absorb with dry agent. Stop leak if safe to do so. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water and detergent.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



x — Must not be stored together

0 — May be stored together with specific preventions

+ - May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Chemwatch:	5010-72
Print Date:	24/06/2021
Issue Date:	01/11/2019

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Cemex Ready-Mixed Concrete, Mortar And Plaster

INGREDIENTS	CAS NO	%	8HR OEL
limestone	1317-65-3	<=1	4 mg/m3
dolerite	Not Available	<=15	-
basalt	Not Available	<=5	-
chromium(VI) ion	18540-29-9	NotSpec	0,005 mg/m3

C	ЧC
	110

DG

	1
	1
	1
	1
A	1
	1
V	
	1
	1

UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not Applicable Subsidiary Risk: Not Applicable Packing Group: Not Applicable

HEALTH HAZARD INFORMATION

Signal word:	Warn	ing
Hazard	H319	Causes serious eye irritation.
statement(s):	H317	May cause an allergic skin reaction.

PRECAUTIONS FOR USE

Appropriate engineering controls:	Local Exhaust Ventilation recommended.
Glasses:	Consider full face-shield.
Storage and Transportation:	Store in cool, dry, protected area. Dispose of this material and its container at hazardous or special waste collection point. Keep locked up. Keep out of reach of children. Keep away from living quarters.
Fire/Explosion Hazard:	Dispose of this material and its container at hazardous or special waste collection point.

PROPERTIES

Solid.Does not burn.

EMERGENCY



FIRST AID Give water (if conscious). URGENT MEDICAL Swallowed: ATTENTION. Eye: Wash with running water (15 mins). Medical attention. Flood body with water. Remove contaminated clothing. Skin: Wash with water Fresh air. Rest, keep warm. If breathing shallow, give Inhaled: oxygen. Medical attention. Advice To Treat symptomatically. Doctor: **Fire Fighting:** Keep surrounding area cool. Water spray/fog. Avoid dust. Sweep shovel to safe place. Dispose of this material and its container at hazardous or special Spills and waste collection point. This material and its container

 Spills and
 waste collection point. This material and its container

 Disposal:
 must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water and detergent.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



0 — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Chemwatch:	74-3587
Print Date:	24/06/2021
Issue Date:	15/04/2021

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DIESEL

INGREDIENTS	CAS NO	%	8HR OEL
diesel	68334-30-5	>99	-

GHS





DG

UN No: 3082 Hazchem Code: •3Z DG Class: 9 Subsidiary Risk: Not Applicable Packing Group: III

HEALTH HAZARD INFORMATION



 Signal word:
 Warning

 Hazard
 H351
 Suspected of causing cancer.

PRECAUTIONS FOR USE



Appropriate engineering controls:	Local Exhaust Ventilation recommended.
Glasses:	Consider chemical goggles.
Gloves:	1.NITRILE
Respirator:	Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Storage and Transportation:	Store in cool, dry, protected area. Restrictions on Storage apply. Refer to Full Report. Dispose of this material and its container at hazardous or special waste collection point. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs.
Fire/Explosion Hazard:	Vapours/gas heavier than air. Toxic smoke/fumes in a fire. Dispose of this material and its container at hazardous or special waste collection point.

PROPERTIES



Liquid. Does not mix with water. Floats on water.Combustible.

EMERGENCY



FIRST AID

Swallowed:	Give water (if conscious). Seek medical advice. Do NOT give milk or oil. Do NOT give alcohol.
Eye:	Wash with running water.
Skin:	Remove contaminated clothing. Wash with soap & water.
Inhaled:	Fresh air. Rest, keep warm. If breathing shallow, give oxygen. Medical attention.
Advice To Doctor:	Evaluate for respiratory distress. Consider lavage with cuffed tube. NO adrenalin.
Fire Fighting:	Keep containers cool. Foam.
Spills and Disposal:	Eliminate ignition sources. Pollutant. Prevent from entering drains. Contain spillage by any means. Absorb with dry agent. Stop leak if safe to do so. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water and detergent.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



0 — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Chemwatch:	22064
Print Date:	24/06/2021
Issue Date:	04/12/2017

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K 42 Ep Gre	ase				
INGREDIENTS			CAS NO	%	8HR OEL
zinc dialkyl dithio	phosphate		68649-42-3	1-5	-
GHS	DG		PROPERTIES		
UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not		Liquid. Does not mix with water. Floats on water.Combustible.			
		Subsidiary Risk: Not	EMERGENCY		
	\sim	Applicable Packing Group: Not Applicable			
HEALTH HAZ	ARD INFORMATION		FIRST AID		
ES			Swallowed:	Rinse mouth with wate	ər.
			Eye:	Wash with running wa	ter.
Signal word:	Danger		Skin:	Wash with soap	
Hazard	H411 Toxic to aquatic life with	h long lasting effects.	Inhaled:	Fresh air. Rest, keep v	warm.
statement(s):	H318 Causes serious eye da	amage.	Advice To Doctor:	Treat symptomatically.	
PRECAUTION	S FOR USE		Fire Fighting:	Foam.	
			Spills and	Eliminate ignition sour leak if safe to do so. D container at hazardou	ces. Absorb with dry agent. Stop Dispose of this material and its s or special waste collection d its container must be disposed
Appropriate engineering controls:	General Exhaust Ventilation a	dequate.	Disposal: point. This material and its container must re- of in a safe way. To clean the floor and all o contaminated by this material, use water ar detergent.		ean the floor and all objects material, use water and
Glasses: Consider chemical goggles.		SAFE STORA	GE WITH OTHER C	LASSIFIED CHEMICALS	
Gloves:	PVC chemical resistant type.				
Storage and Transportation:	Store in cool, dry, protected an material and its container at he waste collection point. Keep o	ea. Dispose of this azardous or special ut of reach of children.			
Fire/Explosion	Toxic smoke/fumes in a fire. D and its container at hazardous	ispose of this material or special waste	 x — Must not be store 0 — May be stored to 	ed together gether with specific prever	ntions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data

Sheets for each substance or article and risks assessed accordingly.

xplosion Hazard: and its container at hazardous or special waste collection point.

Chemwatch:	40-4386
Print Date:	24/06/2021
Issue Date:	01/11/2019

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Lansdowne Products Prime A Pump

INGREDIENTS	CAS NO	%	8HR OEL
sodium carbonate	497-19-8	30-50	

GHS	DG	
	UN No Hazch DG Cl Applie Subsic Applie Packir Applie	o: Not Applicable eem Code: Not cable ass: Not cable diary Risk: Not cable ng Group: Not cable
HEALTH HAZARD INFO	RMATION	

	└╶═╴		
Sigr	nal word:	Warnir	ng
	Hazard	H319	Causes serious eye irritation.
state	ement(s):	H315	Causes skin irritation.
PREC		S FOR L	JSE
Ap	oropriate		

engineering controls:	General Exhaust Ventilation adequate.
Glasses:	Consider chemical goggles.
Gloves:	1.NATURALRUBBER 2.NITRILE
Respirator:	Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)
Storage and Transportation:	Store in cool, dry, protected area. Use only in well ventilated areas. Dispose of this material and its container at hazardous or special waste collection point. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs.
Fire/Explosion Hazard:	Toxic smoke/fumes in a fire. Use only in well ventilated areas. Dispose of this material and its container at hazardous or special waste collection point

PROPERT	ES
---------	----



Spills and Disposal: Spills and Disposal: Safe place. Use only in well ventilated areas. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water and detergent.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



x — Must not be stored together

0 — May be stored together with specific preventions

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

Mould Oil						
INGREDIENTS			CAS NO	%	8HR OEL	
diesel			68334-30-5	30-60	-	
mineral oil			Not Available	30-60	-	
GHS	DG		PROPERTIES			
	UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not		Liquid. Does not m	H ₂ O	n water.Combustible.	
		Subsidiary Risk: Not	EMERGENCY			
·		Applicable Packing Group: Not Applicable			<u>.</u>	
HEALTH HAZA	ARD INFORMATION		FIRST AID			
X			Swallowed:	Give water (if consci ATTENTION.	ous). URGENT MEDICAL	
Signal word	Warning		Eye:	Wash with running w	rater.	
Hazard	H351 Suspected of causin	ng cancer.	Skin:	Remove contaminate water.	ed clothing. Wash with soap &	
statement(s):	S FOR USE	-	Inhaled:	Fresh air. Rest, keep oxygen. Medical atte	warm. If breathing shallow, give	
	MAA		Advice To Doctor:	Evaluate for respirate cuffed tube. NO adre	ory distress. Consider lavage with enalin.	
			Fire Fighting:	Foam.		
Appropriate engineering controls:	General Exhaust Ventilation adequate.		Spills and	Eliminate ignition sou leak if safe to do so. container at hazardo	urces. Absorb with dry agent. Stop Dispose of this material and its us or special waste collection and its container must be disposed	
Glasses:	Consider chemical goggles.		Disposal:	of in a safe way. To clean the floor and all objects contaminated by this material, use water and		
Gloves:	1.NITRILE					
Respirator:	Type A Filter of sufficient capa 1715, EN 143:2000 & 149:200 equivalent)	acity. (AS/NZS 1716 & 01, ANSI Z88 or national	SAFE STORA	GE WITH OTHER	CLASSIFIED CHEMICALS	
Storage and Transportation:	Store in cool, dry, protected a material and its container at h waste collection point. Keep o Keep away from food, drink a	rea. Dispose of this azardous or special out of reach of children. nd animal feeding stuffs.	+ ×	+ o	* * * *	
Fire/Explosion Hazard:	Toxic smoke/fumes in a fire. I and its container at hazardous collection point.	Dispose of this material s or special waste	 must not be store May be stored to May be stored to May be stored to Note: Depending on ot 	ea together ogether with specific preve ogether her risk factors, compatib	entions ility assessment based on the table	
			above may not be rele	vant to storage situations,	particularly where large volumes of	

dangerous goods are stored and handled. Reference should be made to the Safety Data

Sheets for each substance or article and risks assessed accordingly.

PETROL						
INGREDIENTS			CAS NO	%	8HR OEL	
petrol			Not Available	-	-	
GHS	DG		PROPERTIES			
UN No: 1203 Hazchem Code: 3YE DG Class: 3 Subsidiary Risk: Not		Liquid. Does not mix with water. Floats on water. Highly flammable.				
	3	Packing Group: II	EMERGENCY			
			ŀ ૠ 🗎 🗞	⊨ a (§		
	Μ Σ 📑 🛏		FIRST AID			
	R		Swallowed:	Give water (if conscious) or oil. Do NOT give alcol	. Seek medical advice. Do NOT give milk nol.	
\sim \sim	Ĭ		Eye:	Wash with running water	(15 mins). Medical attention.	
Signal word:	Danger		Skin:	Wipe-off with clean/dry c Wash with water & soap.	loth. Remove contaminated clothing. MEDICAL ATTENTION.	
	H224 Extremely flammable liquid anH301 Toxic if swallowed.	id vapour.	Inhaled:	Fresh air. Rest, keep wa Medical attention.	rm. If breathing shallow, give oxygen.	
	H311 Toxic in contact with skin.		Advice To Doctor:	Evaluate for respiratory on NO adrenalin.	listress. Consider lavage with cuffed tube.	
	H315 Causes skin irritation		Fire Fighting:	Keep containers cool. Fo	am.	
	H320 Causes eve irritation.			Spilled liquid has low boiling temperature and evaporates quickly.		
Hazard	H340 May cause genetic defects.			s. Consider evacuation. Prevent from		
statement(s):	H350 May cause cancer.	H350 May cause cancer		with water spray/ fog. Absorb with dry agent. Stop leak if safe to		
	H360 May damage fertility or the un	born child.	Spills and	do so. Not recommended for interior use on large surface area		
	H336 May cause drowsiness or dizz	ziness.	Disposal.	of this material and its container at hazardous or special waste	intainer at hazardous or special waste	
	H373 May cause damage to organs repeated exposure.	H373 May cause damage to organs through prolonged or repeated exposure.		collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated b		
	H304 May be fatal if swallowed and	enters airways.	this material, use water and detergent.			
H412 Harmful to aquatic life with long lasting effects.			SAFE STORAG	E WITH OTHER CLAS	SIFIED CHEMICALS	

PRECAUTIONS FOR USE

Local Exhaust Ventilation recommended.
Safety Glasses. Consider chemical goggles.
1.PE/EVAL/PE 2.PVA 3.TEFLON
Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Store in cool, dry, protected area. Restrictions on Storage apply. Refer to Full Report. Not recommended for interior use on large surface areas. Take precautionary measures against static discharges. Dispose of this material and its container at hazardous or special waste collection point. Keep locked up. Keep out of reach of children. Keep away from living quarters. Keep container in a well ventilated place. Keep away from food, drink and animal feeding stuffs. Keep away from sources of ignition. No smoking.
HIGHLY FLAMMABLE. Vapours/gas heavier than air. Toxic smoke/fumes in a fire. Not recommended for interior use on large surface areas. Take precautionary measures against static discharges. Dispose of this material and its container at hazardous or special waste collection point. In case of fire and/or explosion, DO NOT BREATHE FUMES.

X — Must not be stored together
 0 — May be stored together with specific preventions

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

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^{+ —} May be stored together

Appendix D – Site Location

Site Address	99 Charlotte Street
Post Code	W1T 4QA
Delivery Restriction Times	8am-6pm unless previously arranged





Appendix E – Plant Details









LDP - Large Diameter Piles - WCS version		
Operating weight c/w 4x10,5 kelly bar	75700 kg	166889.7 lb
Max pile diameter	1750 (2500)* mm	68.9 (98.43)* in
Max pile depth - friction kelly	77 m	252.62 ft
Max pile depth - locking kelly	62,5 m	205 ft
* tool below mast		

Crowd cylinder double positioning



LDP - Large Diameter Piles - CCS version		
Operating weight c/w 4x10,5 kelly bar	74300 kg	163803 lb
Max pile diameter	2000 (2500)* mm	78.3 (98.43)* in
Max pile depth - friction kelly	77 m	252.62 ft
Max pile depth - locking kelly	62,5 m	205 ft
* tool below mast		





Rotary drive - RD250	Single gear version	Single gear version
- Max torque (theoretical - restricted - intermittent)	290 kNm	213889 lbf*ft
- Rated torque (theoretical)	249 kNm	183650 lbf*ft
- Speed of rotation (max)	25,1 rpm	25.1 rpm
- Spin-off speed	130 rpm	130 rpm
- Weight c/w cradle	5050 kg	11133 lb
Rotary drive - RD250G	Multigear version	Multigear version
- Max torque (theoretical - restricted - intermittent)	293 kNm	216102 lbf*ft
- Rated torque (theoretical)	251 kNm	185125 lbf*ft
- Speed of rotation (max)	27,2 rpm	27.2 rpm
- Spin-off speed	106 rpm	106 rpm
- Weight c/w cradle	5120 kg	11288 lb

SR-75 Hydraulic Rotary Rig **TECHNICAL DATA SHEET**

CCS- Cylinder crowd system		
- Crowd force pull (down/up)	201/281 kN	45187/63171 lbf
- Stroke	6500 mm	256 in
- Speed up	10 m/min	61.7 ft/min
- Fast speed down	4,5/11,4 m/min	27.6/61.7 ft/min
WCS - Winch crowd system		
- Crowd force pull (down/up)	408/408 kN	91720/91720 lbf
- Stroke	15800 mm	622 in
- Speed up	18,8 m/min	35.4 ft/min
- Fast speed down	8,4/18,8 m/min	11.5/35.4 ft/min
Main winch	Control descent	Control descent
- Line pull (1st layer)	246 kN	55302 lbf
- Rope diameter/lenght	30 mm	1.18 in
- Line speed (max.)	81 m/min	266 ft/min
Auxiliary winch	Control descent	Control descent
- Line pull (1st layer)	127 kN	28550.7 lbf
- Rope diameter	22 mm	0.87 in
- Line speed (max.)	70 m/min	230 ft/min
Engine	CAT C13	CAT C13
- Rated output ISO 3046-I	328 kW @ 1800 rpm	440 HP @ 1800 rpm
- Engine conforms to Exhaust emission Standard	EU stage III B, US EPA Tier 4i	EU stage III B, US EPA Tier 4i
- Diesel tank capacity	650 I	172 US gal
Hydraulic system		
- Hydraulic pressure	30 Mpa	4851 psi
- Flow rates (main circuits)	2x 304 l/min	2x 80.3 US gal/min
 Hydraulic oil tank capacity 	800 I	211 US gal
Undercarriage	variable gauge, telescoping sides frames	variable gauge, telescoping sides frames
 Overall width of crawlers retracted/extended 	2830/4330 mm	111.4/170.5 in
 Width of triple grouser track shoes 	750 mm	29.6 in
- Overall length of crawlers	5540 mm	218 in
- Traction force	495 kN	111280 lbf
- Travel speed	1,6 km/h	1 mph
Mast inclination (Backward/ Forward/Lateral)	10°/4°/3°	10°/4°/3°

STANDARD EQUIPMENT

- On board lighting set
- On board tool set
- Electric refuelling pump
- High comfort operator's cab
- Protective roof grate (FOPS compliant)
- · Air conditioning system
- · Radio and CD player
- Cat walks
- GSM-GPRS-GPS modem

Biodegradable oil

- Freefall auxiliary winch
- · Swivel for auxiliary rope

- Videocamera set
- Wider triple grouser track shoes (900 mm)
- **OPTIONAL EQUIPMENT**
- Main winch load cell
- Diesel engine EU stage III A; US EPA Tier 3 available

• VTH-1 vibrator

• Swivel for main rope • Service rope parking point

• DMS system electronic monitoring and

· Hoist limit switch on main rope

type with special grooving

- visualization system
- Mast inclination measurement on X/Y axes (digital/analog display)

• Main and auxiliary winch controlled descent

Automatic vertical mast allignment

- Depth measuring device on main winch • Speed measuring device on rotary
- Oscillator attachment brackets
- Central lubrication system
- Emergency mode of operation for engine
- Engine diagnostic system
- Diagnostic panel for hydraulic functions
- Removable counterweight
- Transport securing lugs on crawler units
- Access ladder on upper carriage and guardrails

SR-75 Hydraulic Rotary Rig

KELLY DRILLING SYSTEM



T T	D	rilling								CCS S	SYST	EM		wcs	SYSTEM
	D	epths	Kelly dimensions	De	pth		We	ight	H - k	ow pos		Н-н	nigh pos		Н
			section x m	m	ft	te	on	ton	m	ft		m	ft	m	ft
	S	BL HD	3 x 9	24,0	78,7	3	3,4	3,5	8,5	27,9		10,3	33,8	10,3	33,8
	bart	BL HD	3 x 10,5	29,5	96,8	4	l,2	4,3	8,5	27,9		8,9	29,2	8,9	29,2
	3 3	BL HD	3 x 13,5	37,0	121,4	6	6,7	6,8	4,7	15,4		4,7	15,4	4,7	15,4
		BL HD	3 x 16,5	47,0	154,2	8	8,0	8,1	1,8	5,9		1,8	5,9	1,8	5,9
	(0	BL HD	4 x 10,5	37,0	121,4	5	5,7	5,8	8,5	27,9		8,9	29,2	8,9	29,2
	arts	BL HD	4 x 11,5	41,5	136,2	6	6,2	6,3	6,7	22,0		6,7	22,0	6,7	22,0
0	4 p	BL HD	4 x 13,5	50,1	164,4	7	',1	7,2	4,7	15,4		4,7	15,4	4,7	15,4
		BL HD	4 x 15,5	58,5	191,9	8	3,1	8,2	2,7	8,9		2,7	8,9	2,7	8,9
		BL HD	4 x 16,5	62,5	205,1	8	3,5	8,6	1,8	5,9		1,8	5,9	1,8	5,9
		FR HD	4 x 10,5	37,0	121,4	5	ō,7	5,8	8,5	27,9		8,9	29,2	8,9	29,2
	S	FR HD	4 x 13,5	50,1	164,4	7	',1	7,2	4,7	15,4		4,7	15,4	4,7	15,4
+	barl	FR HD	4 x 15,5	58,5	191,9	8	3,1	8,2	2,7	8,9		2,7	8,9	2,7	8,9
mann	5	FR HD	4 x 16,5	62,5	205,1	8	3,5	8,6	1,8	5,9		1,8	5,9	1,8	5,9
		FR HD	5 x 11,5	51,5	169,0	8	3,4	8,5	7,0	23,0		7,0	23,0	7,0	23,0
		FR HD	5 x 13,5	62,0	203,4	g),7	9,9	4,5	14,8		4,5	14,8	4,5	14,8
		FR HD	5 x 14,5	67,5	221,5	10),3	10,5	3,5	11,5		3,5	11,5	3,5	11,5
		FR HD	5 x 16,5	76,0	249,4	11	,6	11,8	1,5	4,9		1,5	4,9	1,5	4,9

Non self-mountable kelly bar
 ** Rathole dedicated kelly bar

Depth

SR-75 Hydraulic Rotary Rig CFA APPLICATIONS Quick conversion kit



CFA - Continuous Flight Auger - Quick conversion kit		
Max pile diameter	1200 mm	203926 lb
Max pile depth c/w 8 m auger extension	23,4 m	76.7 ft
Max pile depth with auger cleaner, c/w 8 m auger extension	22 m	72 ft
Extraction force	800 kN	179847 lbf
Crowd force on auger (optional)	408 kN	91722 lbf

CFA APPLICATIONS 4° line pull



CFA - Continuous Flight Auger - 4° Line pull		
Operating weight c/w auger ext, w/o auger	71400 kg	157408 lb
Max pile diameter	1200 mm	47.24 in
Max pile depth	25,5 (19,5 + 6) m	83.66 (64 + 19.68)ft
Max pile depth with auger cleaner	24 (18 + 6) m	78.74 (59 + 19.68)ft
Max pile depth c/w mast extension (optional kit)	27 m	89 ft
Extraction force	984 kN	221212 lbf
Extraction force on auger (opt.)	100 kN	108807.5 lbf

SR-75 Hydraulic Rotary Rig CAP/CSP APPLICATIONS 4° line pull



CAP/CSP - Cased Augered & Secant Piles - 4° Line pull		
Max pile diameter	1000 mm	39.37 in
Max pile depth	23 (17 + 6) m	75.5 (55.77 + 19.8) ft
Max pile depth with auger cleaner	22 (16 + 6) m	72.2 (52.49 + 19.8) ft
Max cased depth c/w - w/o auger cleaner	16 / 17 m	52.49 / 55.77 ft
Casing max torque (theoretical - restricted - intermittent)	293 kNm	216102 lbf*ft
Casing rated torque (theoretical)	249 kNm	183650 lbf*ft
Casing speed of rotation (max)	11 rpm	11 rpm
Casing pull up/down	408 kN	108807.5 lbf



DP - Displacement Piles		
Max drilling diameter DP / TCT	600 / 800 mm	23.62 / 31.50 in
Max pile depth c/w 8 m sleeve extension	23,0 m	75.5 ft
Mast extension length available	15,8 m	52 ft
Max pile depth c/w mast extension	30,7 m	101 ft



TJ - Turbojet ®		
Max treatment diameter	1500 mm	59.06 in
Bauma version, max treatment depth c/w 8 m sleeve extension	23 m	75.5 ft
Mast boom extension length	15,8 m	52 ft
Max depth with boom mast extension	30,7 m	101 ft

SR-75 Hydraulic Rotary Rig

TRANSPORT, DIMENSIONS AND WEIGHTS



Transport configuration		
Width	3000 mm	118.2 in
Height	3450 mm	135.8 in
Length w/o rotary	14480 mm	570 in
Weight CCS / WCS	52200 / 56200 kg	115081 / 123899 lb
Min transport weight CCS / WCS	49500 / 55450 kg	109128 / 122246 lb

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Appendix F – CFA Action Plan

Description	Action
Instrument Failure before commencement of pile	Do not commence.
Obstructions are not able to be penetrated by piling rig.	In the very unlikely event that an obstruction is encountered then the Engineer and Client would need to be notified and a course of action to be agreed.
Instrument failure during construction of pile.	Use manual method: Review position of auger at failure Record Time of failure Depth of Failure Time restarted concreting Number of pump strokes per 1.0m pile concreted Time of concrete completion If concrete visible to completion by visual control If concreting has just started, consider rebore
Auger rotates excessively with minimum penetration during digging.	Consider greater target concrete supply and soil disturbance in upper section of pile: Pressure drop should be evident, hold auger until pressure increases. Increase oversupply to 20%
Auger advances excessively with minimal rotation	Increase target supply as above. If significantly greater notify Foreman
Concrete doesn't reach required workability	Return to concrete supplier
Rig/Pump Breakdown	Consider time of delay, cage insertion. Rebore if required
Auger blocks during concreting (a) auger partially withdrawn during concreting. (b) auger totally withdrawn during concreting	Redrill by 0.5m into concrete, & restart Rebore pile to full depth
What if cage wagon is incorrectly slung?	All cages must be delivered pre-slung. Should a cage wagon be incorrectly slung, then it will be dangerous for operatives to unload. Haulier/Supplier should be contacted first thing to prevent this happening again. If no other measures available wagon is to be returned to supplier, however this will only be done once the cage wagon is made safe to enter a highway.



Appendix G – Method Statement Briefing Sheet

Method Statement, Risk & COSHH Assessment Talk Attendance Register							
Project Name	Bedford Passage - Phase 2	MS/RA No	KP-P321-MS-003				
Title	CFA Secant wall						

I hereby acknowledge that I have attended, received and understood the above mentioned Method Statement and Risk Assessment talk.						
No	Print Name	Signature	Date	Briefed by		
1						
2						
3						
4						
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