

HSSEQ Form RA-046 Borehole drilling	Revision 0
RISK ASSESSMENT & ENVIRONMENTAL IMPACT	



TASK / ACTIVITY	Drilling of boreholes		ASSESSMENT DATE		NEXT REVIEW	25/02/2018	RECORD No	RA-046
		TYPE OF RA	MAIN OPERATIONS <input checked="" type="checkbox"/>		TASK SPECIFIC <input type="checkbox"/>		LOCATION SPECIFIC <input type="checkbox"/>	
LOCATION	All locations	ASSESSOR	Bojana Ivanic	REVIEWER	P. Manolopoulos	MAIN OPER RA AVAILABLE	N/A	
PERSONS AT RISK	Contractor, Subcontractor, Authorized Visitors			PTW REQUIRED	YES <input type="checkbox"/> / NO <input checked="" type="checkbox"/>	SPECIFY	N/A	
ASSOCIATED RAs / SOPs	SOP-046 Borehole drilling							

** To be used with the HSE Impact Matrix (A01-01) & HSE Risk Assessment Impact Flowchart(A01-02)*

No	POTENTIAL HAZARD / ENVIRON. ASPECT	RISK / ENVIRONMENTAL IMPACT	INITIAL RISK	CONTROL MEASURES	RESIDUAL RISK	ACTION BY
01	Movement of machines/ operation of drilling machine	<ul style="list-style-type: none"> Hit by moving machinery/ entrapment Entrapment/ hit by mobile plant Fall of object from height Hazardous manual tasks - musculoskeletal disorder (MSD) 	H6	<ul style="list-style-type: none"> Before moving / operating allow engine to run for sufficient time to reach operational temperature Ensure no persons are in machinery's vicinity before and during operation. Maintain exclusion zone and cease work if approached Follow manufacturer's instructions, specific safe work method statement/site rules Ensure no persons or obstructions in vicinity before start-up Connecting attachments/augers: <ul style="list-style-type: none"> Attach as per manufacturer's 	M4	Safety Engineer On site manager/ Foreman

				<p>instructions</p> <ul style="list-style-type: none"> ○ Attachment must only be used as specified by manufacturer ○ Ensure attachment is on a flat, level surface ○ Connect hydraulic hoses as required. Tighten bolts/cap to proper torque ○ Ensure all locking pins are secured in place <ul style="list-style-type: none"> ● Use of standard helmets (EN 397, EN50365) ● Following Standard Operating Procedures ● Ensure all rig components are regularly inspected and maintained. ● Secure high-risk components with a restraint (e.g. chains, wire slings) ● Plan tasks to minimize the requirement for working at height. ● Identify drop zones and restrict access to them 		
02	Skin exposure	<ul style="list-style-type: none"> ● Temporary or permanent damages ● Skin irritation, burns, redness, dry skin, other 	M3	<ul style="list-style-type: none"> ● Wear all appropriate PPE including face shield or full face mask to avoid skin exposure due to splash. ● For the accurate selection of the correct PPE, use the appendix “A01-03 EN for PPE” along with “SOP-102-Selection of Personal Protective Equipment”. ● Check the integrity of gloves and coverall, replace immediately if damaged ● First aid kit on site including eye wash ● Check connections, hoses of pump before 	L1	On site manager/ Foreman

				<p>commencement of pumping.</p> <ul style="list-style-type: none"> Secure all pumping equipment Check if pump is operating properly before commencement of works, using water for instance. 		
03	Inhalation of vapors	<ul style="list-style-type: none"> Fatigue, headache, nausea, irritating to nose, throat and lungs Retching and shortness of breath Lung damage 	M3	<ul style="list-style-type: none"> Check for possible smell and conduct gas measurements in order to check whether hazardous vapors are present. Ventilate working area prior to entry. For the accurate selection of the correct PPE that is, mask and filters, use the appendix "A01-03 EN for PPE" along with "SOP-102-Selection of Personal Protective Equipment". 	L1	On site manager/ Foreman
04	Ingestion of waste	<ul style="list-style-type: none"> Toxicity May cause nausea, coughing, perforation of esophagus or stomach in case of corrosive substances, choking and/or shortness of breath 	M3	<ul style="list-style-type: none"> Wear all appropriate PPE including face shield or full face mask to avoid possible ingestion due to splash. No eating or drinking at working site Check the integrity of gloves and coverall, replace immediately if damaged Do NOT induce vomiting if waste is swallowed Cleaning/washing facilities on site 	L1	On site manager/ Foreman
05	Injury from fallen objects	<ul style="list-style-type: none"> Injury/death 	M4	<ul style="list-style-type: none"> Always stay 3 meters away from the suspended load Wear Helmet Wear Safety boots 	L2	On site manager/ Foreman

06	Noise High levels of noise caused by breaking, and drilling works	Exposure to noise Occupational hearing loss / Hearing disorders (e.g. headaches, blood pressure)	M4	<ul style="list-style-type: none"> Noise level measurements where deemed necessary Hearing conservation examinations Obligatory use of hearing protection PPE at high noise areas 	L2	On site manager/ Foreman
07	Vibrations Use of impact and/or rotating power tools	Exposure to high frequency vibrations Neural / blood vessel disorders / joint disorders	M4	<ul style="list-style-type: none"> Use of anti-vibrating tools and gloves Keep safe distance from excavation machinery Breaks according to work load 	L2	On site manager/ Foreman
08	Services above or underground (utilities, public lines, etc.)	Electrocution Injury / possible death from pressure lines	H6	<ul style="list-style-type: none"> SOP-010 Lock Out and Tag Out Identify, label and protect/support or remove/bypass all existing underground utilities / public lines accordingly. 	M4	On site manager/ Foreman
09	Vehicle movements, e.g. fork lifts, trucks etc.	Accidental move Crash or struck between Physical injury to all parts of body, possible death Damage to vehicles and structures	H6	<ul style="list-style-type: none"> Licensed drivers only. Vehicles not to enter the work area without prior arrangements by the Supervisor. Banksman to be used when reversing in tight spaces. Erect cones, light, signs, and barriers around work area. Vehicle engines to be switched off when vehicle is not in use. Abide by traffic rules Forklifts. Don't travel with forks up in air or overloaded, consider passers-by. Drive on even ground only. Pedestrians to use footpaths where possible, wear high visibility clothing. Always be aware of moving plant and 	M4	On site manager/ Foreman

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