



ETHEKWINI MUNICIPALITY
Occupational Health & Safety Unit

BASELINE RISK ASSESSMENT

Document Title	Baseline Risk Assessment
Client	EThekweni Municipality – Human settlements Unit
Project	Construction of external works and infrastructure services at Klaarwater CRU, ward 17
Contract Number	1H-27795
Internal reference	BRA21/03/2024
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BASELINE RISK ASSESSMENT

1. INTRODUCTION: In accordance with the Occupational Health and Safety Act, (Act 85 of 1993) the Legislator places specific requirements on an Employer. One of these is prescribed in Section 8(i) of the Act where it requires the Employer to ascertain the risks and dangers which may occur within the workplace or section of the workplace and then goes on to establish working procedures or practices.

2. PURPOSE: This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.

3. SCOPE: This assessment could be approached on a site, regional or national level concerning any facet of the business operation or process or activity.

4. REVIEW AND MONITORING PLAN

The risk assessment form part of the health and safety plan to be applied on the site and must include the following:

- (a) The identification of the risk and hazards to which persons may be exposed.
- (b) An analysis and evaluation of the risk and hazards identified based on a documented method,
- (c) A documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- (d) A monitoring plan; and
- (e) A review plan

5. REFERENCES

- (a) Tender document number 1H – 27795
- (b) Occupational Health & Safety Act and its Regulation

SCOPE OF WORK

Existing services

Site clearing

Site establishment

Concrete work

Excavation/ Earthwork

Construction vehicle and mobile plant

Construction of roads

Construction of appurtenant

Compaction

Construction of storm-water drainage system

Construction of sewer-line system

Soil poisoning

Working in a fall risk positions

Corona virus

1. RISK ESTIMATION AND EVALUATION

RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

Exposure (E) How frequently does the hazardous event occur		Risk level
Continuously		10
Frequently (daily)		6
Occasionally (weekly)		3
Unusually (monthly)		2
Rarely (few a year)		1
Probability (P) The probability of a loss when the hazardous event does occur		Risk level
Frequent (happens often)		10
Probable (quite possible)		6
Occasional (unusual, but possible)		3
Remotely possible (has happened somewhere)		1
Improbable (practically impossible)		0.5
Severity (S) Consequences of the hazardous event		Risk level
Catastrophic many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m		100
Disaster (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m)		40
Very serious (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000		7
Important (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000		3
Noticeable (first aid needed; or interruption of less than 6 hours; damage exceeding R1000)		1
Risk classification (Risk score = E x P x S)		
Risk score		Risk level
Over 400-----5		Very high risk – discontinue operation or activity
200 to 400 ----- 4		High risk – immediate correction needed
70 to 200----- 3		Substantial risk – correction needed
20 to 70----- 2		Possible risk – attention needed
Under 20 ----- 1		Risk accepted

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

	Activity	Hazard	Risk	Risk Evaluation			Risk Score	Risk level
				E	P	S		
1	Existing services							
		<ul style="list-style-type: none"> Improper disconnection and connection; Unforeseen existing services; Electrocutation 	<ul style="list-style-type: none"> Distraction of services in the area; community unrest; Burns; death; 	3	6	7	126	3
2	Site clearing							
	<ul style="list-style-type: none"> Clearing of the site using construction mobile plant and hand tools 	<ul style="list-style-type: none"> Incompetent driver/operator Unsafe construction mobile plant/hand tools Petrol and oil spillages Existing services Noise 	<ul style="list-style-type: none"> Accident/property damage/machinery running out of control Injury to body Environmental contamination Noise induced hearing loss 	3	6	7	126	3
3	Site establishment							

	<ul style="list-style-type: none"> • Manual and mechanical clearing of the land • Off-loading and positioning of containers by mobile crane • Fencing off the site • Installation of temporary water supply, electricity, 	<ul style="list-style-type: none"> • Incompetent construction mobile plant operator • Manual Handling of equipment and materials. • Uneven surfaces • Reckless driving. • Electrocutation • Incorrect/ poor connection of temporary services 	<ul style="list-style-type: none"> • Body injuries/ Accidents • Destruction of services • Burns 	2	6	7	84	3
4	Excavation/ earthworks							
	<ul style="list-style-type: none"> • Manual and mechanical excavation of trenches using construction mobile plants and hand tools 	<ul style="list-style-type: none"> • Collapsing of trenches. • Unsafe access to trench • Unsafe machinery/ hand tools • Unprotected trenches • People exposure to excavations 	<ul style="list-style-type: none"> • Death/ buried/ trauma/ panic attack • Broken bone/ dislocation/ • Accidents/ injuries to hands, • Falling into excavation • Death/ broken bones 	6	6	7	252	4

		<ul style="list-style-type: none"> • Engulfment 						
5	Construction of stormwater drainage system							
	<ul style="list-style-type: none"> • Excavation above 1m deep using and excavator and TLB • Preparation and laying of concrete pipes using a lifting equipment • Construction of above 1m deep manhole using cement, blocks, handtools and concrete manhole rings/ cover • Connection of the stormwater pipes into the existing stormwater drainage system 	<ul style="list-style-type: none"> • Collapsing of trenches. • Unsafe access to trench • Unprotected trenches • People exposure to excavations • Unsafe lifting devices • Incompetent lifting machinery operator • Equipment failure • Overloading of equipment/ machinery • Working/ operating equipment too close to the excavation • Contact with and inhalation of cement dust 	<ul style="list-style-type: none"> • Death/ dislocation/ trauma/ panic attack • Broken borne/ dislocation, • Falling into excavation. • Injury to body/ accidents/ property damage/ noncompliance with DMR/ noncompliance with stipulated safe working load. • Falling into excavation/ property damage. • Respiratory diseases/ skin disease or irritation • Skeletal injuries/ possible of pinch/ Injury to 	6	6	7	252	4

		<ul style="list-style-type: none"> • Manual handling of heavy manhole rings and covers • Incorrect connection of stormwater pipe 	<ul style="list-style-type: none"> • hands and toes. • Destruction or blockage of stormwater drainage system 					
6	Construction of sewerline system							
	<ul style="list-style-type: none"> • Excavation above 1m deep using and excavator and TLB • Preparation and laying of UPVC heavy pipes using a lifting equipment • Construction of above 1m deep manhole using cement, blocks, hand tools and concrete manhole rings/ cover • Connection of UPVC heavy duty sewer pipes into 	<ul style="list-style-type: none"> • Collapsing of trenches. • Unsafe access to trench • Unprotected trenches • People exposure to excavations • Unsafe lifting devices • Incompetent lifting machinery operator • Equipment failure • Overloading of equipment/ machinery • Working/ 	<ul style="list-style-type: none"> • Death/ dislocation/ trauma/ panic attack • Broken borne/ dislocation, • Falling into excavation. • Injury to body/ accidents/ property damage/ noncompliance with DMR/ noncompliance with stipulated safe working load. • Falling into excavation/ property 	6	6	7	252	4

	the existing sewer system	<p>operating equipment too close to the excavation</p> <ul style="list-style-type: none"> • Contact with and inhalation of cement dust • Manual handling of heavy manhole rings and covers • Incorrect connection of UPVC sewer pipes 	<p>damage.</p> <ul style="list-style-type: none"> • Respiratory diseases/ skin disease or irritation • Skeletal injuries/ possible of pinch/ Injury to hands and toes. • Destruction or blockage of stormwater drainage system 						
7	Compaction								
	<ul style="list-style-type: none"> • Operating a bomag roller, wacker etc. 	<ul style="list-style-type: none"> • Incompetent operator, • Noise, • Vibration 	<ul style="list-style-type: none"> • Personal injuries • Noise Induce Hearing loss • Kidney problem/ body or muscular pain 	6	6	3	108	3	
8	Concrete works								
	<ul style="list-style-type: none"> • Concrete works 	<ul style="list-style-type: none"> • Concrete spillage. • Concrete contact with body. 	<ul style="list-style-type: none"> • Soil contamination • Skin problems 	3	3	3	27	2	
9	Soil poisoning								

	<ul style="list-style-type: none"> Applying and safekeeping of chemicals 	<ul style="list-style-type: none"> Contact or inhalation of soil poisoning chemical 	<ul style="list-style-type: none"> Death/ respiratory disease/ skin disease 	3	3	3	27	2
10	Construction of roads							
	<ul style="list-style-type: none"> Clearing, cutting, filling and leveling of the road using construction mobile plants Compaction Asphalting Road marking Installation of signage 	<ul style="list-style-type: none"> Unsafe construction mobile plants Oil/ petrol spillage Incompetent driver/ operator Uneven surface Dust Vibration Noise Contact with hot asphalt Fumes Exposure to hazardous paint Unsafe drilling machine Digging for signage poles 	<ul style="list-style-type: none"> Accidents/ Environmental contamination Accidents/ disablement/ damage to property Capsizing of mobile construction plants/ Jammed construction mobile plants Lung disease, eye irritation Fatigue/ Kidney damage/ Muscle or joint pain Noise induced hearing loss Burns/ skin infections Breathing/ respiratory diseases Injury to hands 	6	6	3	108	3

11	Construction of appurtenant							
	<ul style="list-style-type: none"> • Kerbing and channeling using hand-tools • Retaining structure using wire baskets and stones 	<ul style="list-style-type: none"> • Manual handling of kerbs • Unsafe tools • Ergonomic hazards • Manual handling of stones 	<ul style="list-style-type: none"> • Skeletal injuries/ Injuries to hands and toes • Ergonomic risks 	3	6	3	54	2
12	Working in a fall risk positions							
	<ul style="list-style-type: none"> • Working in a fall risk positions. • Erection and dismantling of scaffolding/ platform. 	<ul style="list-style-type: none"> • Falling into or from. • Unsafe tools/ manual handling of guardrails 	<ul style="list-style-type: none"> • Broken bones/ body injuries • Injury to hands 	6	6	3	108	3
13	Construction mobile plant and vehicles							
	<ul style="list-style-type: none"> • Use of construction vehicles and mobile plants and equipment 	<ul style="list-style-type: none"> • Unsafe construction plants and equipment • Incompetent drivers/ operators • Uneven surface • Running out of control • Noise • Vibration 	<ul style="list-style-type: none"> • Accidents/ property damage/ noncompliance with DMR/ noncompliance with stipulated safe working load/ capsizing of mobile construction plants/ injury to body/ death/ 	6	6	7	252	4

		<ul style="list-style-type: none"> • Oil Spillage • Dust 	<p>loss of limb/ disablement/ noise induced hearing loss/ muscular pains/ kidney damage/ environmental contamination/ lung disease</p>					
14	Corona virus							
	<ul style="list-style-type: none"> • Transportation of employees • Use of site facilities and hand-tools • Preforming construction work • Meeting/ toolbox talks 	<ul style="list-style-type: none"> • Non-compliance with COVID19 Codes of practice • Sharing of facilities and hand tools • Failure to use disinfectants • Virus contaminated vehicle, facilities and tool • Being in an enclosed place • Not using 	<ul style="list-style-type: none"> • Employees could be infected with COVID19 virus, severe illness or death • Could be prosecuted or fined 	3	3	6	54	2

		protective gear <ul style="list-style-type: none"> • Failure to apply distancing 							
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RISK PROFILE:

Construction of external works and infrastructure services at Klaarwater CRU 1H-27795

