



**PRAXOS**

**373**

# **Mobeni Reservoir Project Health and Safety Specifications**

**PREAMBLE**

In terms of Construction Regulation 4(1)(a) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), the Client and/or its Agent on its behalf, shall be responsible to prepare Health & Safety Specifications for any intended construction project and provide any Principal Contractor who is making a bid or appointed to perform construction work for the Client and/or its Agent on its behalf with the same.

The Client's further duties are as described in The Act and the Regulations made there-under. The Principal Contractor shall be responsible for the Health & Safety Policy for the site in terms of Section 7 of the Act and in line with Construction Regulation 5 as well as the Health and Safety Plan for the project.

This 'Health and Safety Specifications' document is governed by the "Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), hereinafter referred to as 'The Act'. Notwithstanding this, cognisance should be taken of the fact that no single Act or its set of Regulations can be read in isolation. Furthermore, although the definition of Health and Safety Specifications stipulates 'a documented specification of all health and safety requirements pertaining to associated works on a construction site, so as to ensure the health and safety of persons', it is required that the entire scope of the Labour legislation, including the Basic Conditions of Employment Act be considered as part of the legal compliance system. With reference to this specification document this requirement is limited to all health, safety and environmental issues pertaining to the site of the project as referred to here-in. Despite the foregoing it is reiterated that environmental management shall receive due attention.

Due to the wide scope and definition of construction work, every construction activity and site will be different, and circumstances and conditions may change even on a daily basis. Therefore, due caution is to be taken by the Principal Contractor when drafting the Health and Safety Plan based on these Health and Safety Specifications. Prior to drafting the Health and Safety Plan, and in consideration of the information contained here-in, the contractor shall set up a Risk Assessment Program to identify and determine the scope and details of any risk associated with any hazard at the construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard. This Risk Assessment and the steps identified will be the basis or point of departure for the Health and Safety Plan. The Health and Safety Plan shall include documented 'Methods of Statement' detailing the key activities to be performed in order to reduce as far as practicable, the hazards identified in the Risk Assessment. The Foundation of the risk assessment will be the hazards identified by the client in the baseline risk assessment which will be included with these specifications

The responsibilities the Client, designer and relevant stakeholders have toward its employees and other people present in the facilities or on the sites stems from both moral, civil and a variety of legal obligations. The Principal Contractor/sub contractor is to take due cognisance of the above statement.

## HEALTH & SAFETY SPECIFICATIONS

Every effort has been made to ensure that this specification document is accurate and adequate in all respects. Should it however, contain any errors or omissions they may not be considered as grounds for claims under the contract for additional reimbursement or extension of time, or relieve the Principal/Sub Contractor from his responsibilities and accountability in respect of the project to which this specification document pertains. Any such inaccuracies, inconsistencies and/or inadequacies must immediately be brought to the attention of the Agent and/or Client.

These Specifications should be read in conjunction with the Act, the Construction Regulations and all other Regulations and Safety Standards which were or will be promulgated under the Act or incorporated into the Act and be in force or come into force during the effective duration of the project. The stipulations in this specification, as well as those contained in all other documentation pertaining to the project, including contract documentation and technical specifications shall not be interpreted, in any way whatsoever, to countermand or nullify any stipulation of the Act, Regulations and Safety Standards which are promulgated under, or incorporated into the Act.

**DEFINITIONS** - The most important definitions in the Act and Regulations pertaining to this specification document are hereby extracted.

“Purpose of the Act” –

To provide for the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

“Agent” –

means any person who acts as a representative for a client;

“Client” –

means any person for whom construction work is performed;

“Construction Work” is defined as any work in connection with –

- (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- (b) the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

## HEALTH & SAFETY SPECIFICATIONS

### “Contractor” –

means an employer, as defined in Section 1 of the Act, who performs construction work and includes Principal Contractors;

### “Health and Safety File” –

means a file, or other record in permanent form, containing the information required a contemplated in the regulations;

### “Health and Safety Plan” –

means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

### “Health and Safety Specification” –

means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

### “Method Statement” –

means a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

### “Principal Contractor” –

means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

### “Risk Assessment” –

means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.

**OCCUPATIONAL HEALTH & SAFETY MANAGEMENT****SCOPE OF WORK**

**These specifications are applicable to the specific scope of work pertaining to the above-mentioned project as detailed in the tender documents, this amongst all includes-**

**THE REINSTATEMENT OF THE MOBENI 2 RESERVOIR****Overall Supervision and Responsibility for OH&S**

The Client and/or its Agent on its behalf to ensure that the Principal Contractor, appointed in terms of Construction Regulation 4(1)(c), implements and maintains the agreed and approved H&S Plan. Failure on the part of the Client or Agent to comply with this requirement will not relieve the Principal Contractor from any one or more of his/her duties under the Act and Regulations.

The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that the Employer (as defined in the Act) complies with the Act. The pro forma Legal Compliance Audit may be used for this purpose by the Principal Contractor or his/her appointed contractor.

All OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal Contractor to become part of site records (Health & Safety File).

The Construction Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 6 to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal Contractor to become part of site records (Health & Safety File).

All Health and Safety Representatives (SHE-Reps) shall act and report as per Section 18 of the Act.

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### **Introduction**

The Client is obligated to implement measures to ensure the health and safety of all people and properties affected under its custodianship or contractual commitments and is further obligated to monitor that these measures are structured and applied according to the requirements of these Health and Safety Specifications. The Mobeni Reservoir forms part of the above obligation.

The purpose of this specification document is to provide the relevant Principal Contractor (and his /her contractor) with any information other than the standard conditions pertaining to construction sites which might affect the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; and to protect persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work during the carrying out of construction work

These specifications will for the duration of the project which is situated at Mobeni Reservoir, and it is expected that the contractor complies. Non-compliance will be deemed as a breach of contract leading to application of fines, work stop cards and site closure.

These site specific specifications serve to ensure that the Principal/Sub Contractor (and his /her contractor) is fully aware of what is expected from him/her with regard to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Regulations made there-under including the applicable safety standards, and in particular in terms of Section 8 of the Act.

It must be noted that Praxos373 the appointed Health and Safety consultant may stop any contractor from executing construction work, which is not in accordance with the contractor's Health and Safety Plan for the project or which poses a threat to the health and safety of any person.

Notwithstanding the above, the following requirements of Praxos373 should be met:

1. That all contractors on site comply with the relevant legislation.
2. That risks are assessed and as far as reasonably practicable, safe methods of work, safe working conditions and a healthy work environment are provided on site.
3. That structured health and safety arrangements are provided which will include planning, organization, competent supervision, control, monitoring and implementation.
4. Contractors must ensure, as far as reasonably practicable, the co-operation, co-ordination, and exchange of information between sub-contractor(s) under his control.
5. Health and Safety assistance is provided where necessary.
6. Emergency and other procedures are established to handle any possible emergency.
7. Means of consultation on Health and Safety matters are established.
8. Health and Safety training, instruction and information is provided.
9. A suitable Health and Safety Policy is developed and communicated with employees.

## HEALTH & SAFETY SPECIFICATIONS

### 1. SPECIFICATION: HEALTH AND SAFETY PLAN

Construction Regulation 5(3)(g) determines that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process. The Principal Contractor shall on tendering make provision for the cost of health and safety measures in terms of his/her documented Health and Safety Plan and measures based on these Health and Safety Specifications during the period of the project. The cost shall be duly quantified and clearly identified for such identifiable purpose.

The Client and/or its Agent on its behalf will be conducting Periodic Audits at times agreed with the Principal Contractor Audit to comply with Construction Regulation 4(1)(d) to ensure that the principal Contractor has implemented, is adhering to and is maintaining the agreed and approved OH&S Plan.

The Client and/or its Agent on its behalf reserves the right to conduct any other ad hoc audits and inspections as it and/or its Agent on its behalf deem necessary.

A representative of the Principal Contractor and the relevant Health and Safety Representative(s) (SHE-Reps) must accompany the Client and/or its Agent on its behalf on all Audits and Inspections and may conduct their own audit/inspection at the same time.

The contractor must provide a suitable and sufficiently documented Health and Safety Plan, based upon these Health and Safety specifications issued by Praxos373.

The Health and Safety Plan must be discussed and negotiated with Praxos373 or the appointed Agent and there after approved for implementation by The Principal Contractor. **Periodic Audits** – Praxos373 will take the necessary steps to ensure that the approved Health and Safety Plan is implemented by the contractor, and in agreement with the contractor, carry out periodic documented audits once per month and weekly visual inspections. The site Safety Officer will conduct an audit monthly on the site to ensure the site is legally compliant. The Safety consultant of Praxos373 will do legal compliance audits as appointed.

Copies of such audits will be made available to within 7 working days to allow for any contraventions to be rectified.

### 2. SPECIFICATION: LEGISLATION

2.1. A copy of the following must be readily available on site.

- Occupation Health and Safety Act 85 of 1993.
- Construction Regulation, 2014.
- General Machinery Regulations, 1998.
- General Safety Regulations.
- Asbestos regulations 2020
- Electrical Machinery Regulations, 2011.
- Noise Induced Hearing Loss Regulations.
- General Administrative Regulations.

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- Environmental Regulations for Workplaces, 1987.
- Facilities Regulations, 2004.
- Driven Machinery Regulations, 2015.

### 2.2. NOTIFICATION OF CONSTRUCTION WORK AND NOTIFICATION OF ASBESTOS WORK

A contractor who intends to carry out any construction work other than work contemplated in regulation 3(1), must at least 7 days before that work is to be carried out notify the provincial director in writing in the form of an Annexure 2 if the intended construction work will:

- Asbestos work.
- Include excavation work.
- Include working at a height where there is risk of falling.
- Include the demolition of a structure; or
- Include the use of explosives to perform construction work. (if required)

### 3. SPECIAL SAFETY SPECIFICATIONS:

3.1. The appointment of a full-time health and safety officer registered with SACPCMP must be made to ensure continuity in legal compliance.

3.2. A selected and appointed part time Safety Representative must be available on site if 20 or more employees are on site.  
(Ratio: At least one Safety Representative per 50 employees or part thereof)

3.3. Qualified First Aider(s) with their first aid box(es) must be available on site.  
(Ratio: One first aider for every 50 employees or part thereof)

- First aid sign and name of person in charge displayed.

Contractor must ensure that all employees, before commencing any work on site, are accurately inducted regarding health and safety, the requirements and all possible risk / hazards that may exist on site.

- Proof of such induction must be kept on file.
- Proof of induction must be carried on every employee's person whilst working on site.
- Sub-contractors must form part of these induction requirements.
- The professional team and other persons involved in the project must be instructed regarding the safety requirements and hazards / risks that may exist on the site.

3.5. Contractor must provide a Health & Safety File with all the necessary legal documentation and inspection registers for use to comply with the provisions of the regulations.

3.6. Contractor must ensure that all persons employed to carry out work on this project are competent and accurately inducted, instructed, and trained.

3.7. Contractor must ensure that each employee, ID copy, job description and medical certificate is available on site.



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- 3.8. Contractor must report each reportable incident as per Section 24 of the Act, to Praxos373 as soon as possible, provided that in the case of a very serious incident or fatality, the report will be done immediately.
- 3.9. Contractors must ensure that a list of emergency telephone numbers is placed in a conspicuous place on site.
- 3.10. Contractor must do proper planning and must arrange **for rubble removal and dust suppression during operations**. Housekeeping to be done on a regular basis as determined by site management.
- 3.11. Contractor must ensure that entry to the site is refused to any person or employee(s) who appear unfit through alcohol and/or drug use. Drugs and/or alcohol shall not be permitted on site.

### 4. SPECIFICATIONS: MANAGEMENT AND SUPERVISON

- 4.1. Contractor must appoint in writing competent persons to manage and supervise construction work on this project.
- 4.2. Contractor must ensure that any construction work on the project is always carried out under the supervision of a competent person.
- 4.3. All appointments must be done in writing and kept in the health and safety file on site.
- 4.4. Any afterhours – or weekend work must be carried out under competent supervision and Praxos373 to be informed.

### 5. SPECIFICATIONS: ASBESTOS WORK

The Principal Contractor shall comply with Asbestos regulations 2020 but not limited to the requirements below:

- 5.1 The plan of work to be submitted to the client for review and approval prior work commences
- 5.2 The asbestos zone shall be designated.
- 5.3 Competency of asbestos workers and agent registered with department of labour.
- 5.4 The interim storage of asbestos waste material shall be in a skip where the material shall be fully covered and kept sealed to prevent any possible asbestos airborne.
- 5.5 The requirements of the disposal certificate being obtained the asbestos disposal site in a period of 7 working days after disposal.
- 5.6 The asbestos Zone shall be clearly demarcated with no unauthorized person being permitted to enter, entry only permitted, on instruction from AIA being given that normal

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work may proceed in the area.

- 5.7 Hazardous materials such as asbestos may not be included in general rubble and need to be disposed of as per applicable legislative requirements.

### 6. SPECIFICATIONS: SECURITY ARRANGEMENTS, PUBLIC SAFETY, HOARDING AND FENCING

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees shall at all times be provided with fulltime supervision while on site. The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period.

- 6.1. Contractor must ensure that suitable fencing is maintained around the construction/ demolition area.
- 6.2. All employees working on site and plant operators shall be issued a reflective vest free of charge to ensure visibility.
- 6.3. The necessary warning and safety signs to be displayed at the gate i.e. No Unauthorized Entry; Danger Construction Work in Progress; Hard Hat; Lifting Operations, Visitors to Report to Site Office, Safety Harnesses, and Safety shoes, On Site, People Working Above ETC.
- 6.4. Contractor to ensure that entry to the site is controlled during the construction/ demolition operations.
- 6.5. **Dust control** to be implemented on ongoing basis during construction operations.

### 7. SPECIFICATIONS: RISK ASSESSMENTS

The Principal Contractor is required to develop Risk Assessments, Standard Working Procedures (SWP) and Method Statements for each activity executed in the contract or project.

Although the client has provided a baseline risk assessment the contractor must carry out risk assessments before the commencement of any construction work on the project.

- 6.1.1. The identification of all risks and hazards to which persons might be exposed to on the project.

**NOTE:** Public Liability risks must form part of these assessments.

- 6.1.2. All risks and hazards must be appropriately analysed and evaluated.
- 6.1.3. A documented plan of safe work procedures must be drawn up indicating how these risks are to be mitigated, reduced, controlled, and managed.
- 6.8.4 Contractor must have a copy of these risk assessments readily available on site.

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- 6.8.5 Contractor must ensure that safe work procedures, established through risk assessments, are properly communicated to those employees concerned.

### 8. SPECIFICATIONS: FALL PROTECTION

- 8.1. Contractor must designate a competent person, responsible for the preparation of a Fall Protection Plan.
- 8.2. Contractor must ensure that the Fall Protection Plan identifies all the possible situations on the project where persons are exposed to the possibility of falling whilst carrying out their work.

NOTE: Pay special attention to the following:

- Work involving demolishing of structure.
  - Support & Form work edges.
  - All roof work.
  - All unprotected openings / edges.
  - Stair ways.
  - Outside area of the building where persons will have to perform work at heights.
- 8.3. Contractor must ensure that :
- All identified unsafe conditions are adequately guarded, fenced, or barricaded and that proper means are implemented to prevent falling.
  - No person works in an elevated position unless such work is performed safely as if working from a scaffold or a ladder.
  - Fall prevention and fall equipment is issued to persons working in elevated positions and is suitable and of sufficient strength for the purpose for which it is to be used, and securely attached whilst work is carried out.
  - Workers who must work in elevated positions undergo a process of evaluating their physical and psychological fitness to carry out such work and records kept.
  - All workers working at heights to undergo a medical fitness test to ensure that they are mentally / physically fit to work at heights. No person will be allowed to work at heights if such proof is not supplied to Praxos373.
  - Contractor is to ensure that all their employees undergo a medical examination.

### 9. SPECIFICATIONS: FACILITIES

- 9.1. Contractor must ensure that depending on the number of workers, provision is made for the following facilities: -
- At least one sanitary facility for every 30 workers.
  - Changing facilities for each sex.
  - Sheltered, clean eating areas.
- 9.2. Facilities to be always kept clean and hygienic and documented records are filed.

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### 10. SPECIFICATIONS: EXCAVATIONS

- 10.1. Contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.
- 10.2. Contractor shall ensure that:
  - Suitable steps are taken to prevent any person from being buried or trapped by a fall or dislodgement.
  - Excavations are adequately shored or braced, and safe access is provided by ladder or any other safe means.
  - All shallow excavations up to One Meter will be barricaded off and treated the same way as a deep excavation except that it will not be shored and only Chevron Tape or Scaffolding to be used to prevent people from falling in. All excavations to be fully barricaded off at the end of shift daily.
- 10.3. The competent person shall do daily inspections of all excavations and record his finding in a register.
- 10.4. Safe means of getting into, and out of, any excavation must be provided.
- 9.5. Excavations must be kept free from toxic or explosive gases.
- 9.6. Ensure that excavations are always properly ventilated, naturally or otherwise.

### 10 SPECIFICATIONS: STACKING AND STORAGE ON SITE

- 10.1. Contractor to ensure that adequate storage areas are available.
- 10.2. Contractor to ensure that storage areas are kept neat, barricaded and under control under the supervision of an appointed person.
- 10.3. The delivery, offloading and loading of equipment and materials must be properly co-ordinated in view of the heavy traffic and public presence.

### 11 SPECIFICATIONS: STORARE OF FLAMMABLE SUBSTANCES

- 11.1. All flammables to be stored separately and the necessary precautions are taken to prevent a fire or explosion. Fire extinguishers, no smoking signs and housekeeping to be implemented and monitored.
- 11.2. Contractor must ensure where flammables are to be used, applied, or stored on the site that it is done in a manner which would cause no fire or explosion and that the storage area is effectively ventilated.
- 11.3. Contractor must ensure that an adequate amount of fire – fighting equipment is installed at suitable locations around the area where flammable liquids are stored.

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- 11.4 Contractor must ensure that all containers holding flammable liquids are labelled and kept tightly closed when not in use and after their contents have been used, to be removed from the construction site.
- 11.5 Contractor must ensure that no material such as cotton waste, paper, plastics, cleaning rags or similar materials is stored together with flammable liquids.

### 12 SPECIFICATIONS: HAZARDOUS CHEMICAL SUBSTANCES

- 12.1 Contractor must identify what hazardous chemical substances will be used during the construction process.
- 12.2 Contractor must have a hazardous chemical substance register on site.
- 12.3 Contractor must ensure that employees are adequately and comprehensively informed and trained regarding the danger of exposure to such hazardous chemical substances.
- 12.4 Contractor must ascertain himself with the requirements of the Hazardous Chemical Regulations.

**NOTE:** Exposure to dust by employees must be limited by:

- Providing dust masks to such employees
- Water as far as possible rubble before removal
- Demarcating loading areas
- Ensuring minimum spillage and proper storage areas

### 13 SPECIFICATIONS: FIRE PRECAUTIONS

- 13.1 Contractor must ensure that:
  - Appropriate measures are taken to avoid the risk of fire.
  - Sufficient, safe, and suitable storage is provided for flammable liquids and gasses.
  - Smoking if prohibited and notices to this regard are displayed.
  - No open fires are allowed on site.
  - Sufficient number of persons on site are trained in the use of fire extinguishing equipment.
  - Fire equipment must be inspected by a competent person, who has been appointed in writing and findings recorded in a register.
  - There is an effective evacuation plan in place.
  - A siren is available/installed and sounded in event of a fire.

### 14 SPECIFICATIONS: EMERGENCY PROCEDURES

- 14.1 Contractor must draw up a plan for evacuation in case of an emergency.
- 14.2 Contractor to co-ordinate this plan with all employees and role players.

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14.3 A safe emergency assembly point must be established on site.

21.4 The emergency procedures must be communicated to all employees, sub-contractors, and the professional team during induction.

### 15 SPECIFICATIONS: ELECTRICAL INSTALLATIONS AND MACHINERY

15.1 Contractor must ensure that before construction commences on the project that adequate measure is taken to ascertain the presence of a guard against danger to workers from an electrical cable or apparatus which under over or on the site.

15.2 Contractor must ensure that temporary electrical installations are inspected at least once per week by a competent person.

15.3 Contractor must ensure that all electrical machinery is inspected, daily before use, by a competent person.

15.4 Contractor must ensure that the control of all temporary electrical installations on the construction site is designated to a competent person.

15.5 Contractor must ensure that all distribution boards are safely located and regularly checked by the electrician. Findings must be recorded in a register kept in the Health and Safety File.

### 16. SPECIFICATIONS: HANDTOOLS

- All tools should be kept in safe working condition and checked daily by an appointed person.
- All damaged or worn tools must be repaired or replaced.
- Use the right tool for the job.
- When necessary, use eye protection i.e., chisel work.
- No homemade tools must be used on site.

### 17. SPECIFICATIONS: LADDERS

The following safety rules for the safe use of ladders will apply on site:

- Be soundly constructed and material of adequate strength and suited to the purpose.
- Fitted with non-skid devices at bottom and top extremities or lashed / held / secured at bottom and top.
- The maximum length not exceeding nine (9) m (extension ladders excluded).
- Ladders with broken / missing rungs or hinges, must be repaired before further use.
- In certain cases, ladders must be provided with a hook.
- Place the ladder so that its feet are a quarter of its length to the top support from the object it is resting against.
- Unless the ladder is securely tied at the top, it should always be held in position by another person at the bottom whilst in use.
- Wherever possible a ladder should extend one meter above the landing.
- Do not use ladders as horizontal walkways or as scaffolding.

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- Use the correct ladder for the job, do not overreach when working from a ladder.
- Only one person should use a ladder at a time.
- Use both hands for climbing.
- Never leave a ladder where it may fall and do not use a ladder behind a closed door unless the door is locked.
- Do not leave tools or equipment on top of a ladder as they may fall and injure a fellow employee.
- Do not attempt to reach too far from your working position or to “jump” the ladder along the wall.
- When moving or carrying a ladder, care must be taken for what might be overhead – in particular the danger of live electrical wires and cables especially when using metal ladders.
- When using a step ladder for work close to an open edge or other opening a safety belt must be used whilst working in such a position.
- When not in use keep ladders under cover and properly stored.
- Use both hands to climb. Wear a tool belt. Pull materials up from below to your workstation.
- Monthly inspection of ladders used in construction work is recommended.

LADDER	DUTY RATINGS	
MADE	TYPE	DUTY RATING *
Household	III	90kg
Commercial	II	100kg
Industrial heavy duty	I	115kg
Industrial extra heavy duty	IA	136kg
* Duty Rating represents maximum weight of fully clothed user plus tools and materials.		

### 18. SPECIFICATIONS: PORTABLE ELECTRICAL EQUIPMENT

When circumstances demand the use of portable electrical equipment such as an angle grinder, the following safety measurements will apply:

- All electrical equipment to be inspected daily prior to use by a competent person appointed in writing.
- Extension heads in good order and properly earthed.
- Plugs in good condition.
- Guard in place and not loose.
- Correct disc for the job.
- Eye protection issued and used.
- Electrical connection of tool in good order.
- The operator trained and competent to use tool.

### 19 SPECIFICATIONS: CONSTRUCTION VEHICLE and MOBILE PLANT

- 19.1 Contractor must make sure that where Construction Vehicles and Mobile Plant are used on the construction site, they are:

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- Maintained in good working order.
- Operated by persons who have received appropriate training and are certified competent by an accredited **Construction CETA assessor for earthmoving equipment** and are authorized in writing to operate such machine(s).
- Operated by persons who are certified by an **Occupational Health practitioner** to be medically fit to operate such machinery.
- Safely operated on the site and measures taken to prevent machinery from falling into excavations or openings.
- Equipment with signalling device and / or reversing alarm system.
- Provided with a canopy that will protect the operator.
- Inspected daily, prior to use, by a competent person, appointed in writing and record of inspections kept.

19.2 Contractor shall also ensure that:

- Unsafe riding by persons on the construction vehicle are not allowed.
- Where vehicles must be repaired on site, the necessary precautions are taken to prevent injury to persons carrying out such repair work.
- Where vehicles are used to transport employees, firm, secure seating is provided for the number of employees to be transported.

## 20 SPECIFICATIONS: REPORT OF INCIDENTS

The Principal Contractor shall report all incidents where an employee is injured on duty to the extent that he/she:

- \* Dies
- \* Becomes unconscious
- \* Loses a limb or part of a limb
- \* Is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

- \* a major incident occurred
- \* The health or safety of any person was endangered
- \* Where a dangerous substance was spilled
- \* The uncontrolled release of any substance under pressure took place
- \* Machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- \* Machinery ran out of control,

to the Provincial Director of the Department of Labour within seven days and at the same time to the Client and/or its Agent on its behalf.

20.1 Sub-Contractors shall cause all incidents occurring on site and arising out of or in connection



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with the activities of persons at work, or in connection with the use of plant or machinery, be reported to the inspector as required by Section 24 of the OSH Act.

20.2 Notification shall be in the form of WCL 1 or WCL 2.

20.3 Fatalities or very serious incidents must immediately be reported to the inspectorate and to Praxos373.

**NOTE:** In the case of fatalities, the SAPS must also be notified.

### 21 SPECIFICATIONS: RECORDING & INVESTIGATION OF INCIDENTS

21.1 Contractor shall cause every incident to be investigated by himself or a person appointed by him.

21.2 The recording of this incident shall be in the form of Annexure 1 and be completed within seven days of the incident and finalized as soon as reasonably practicable.

21.3 Contractor is responsible for the investigation of all accidents relating to the construction site and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

21.4 Copies of reports and records must also be submitted to Praxos373 as soon as possible.

### 22 SPECIFICATIONS: PERSONAL PROTECTIVE EQUIPMENT

22.1 Considering the nature of the hazard to which a worker is exposed, the appointed contractor must issue suitable PPE and ensure that employees receive such personal protective equipment free of charge.

22.2 Contractor must instruct his employees in the proper use, maintenance and limitations of the safety equipment and facilities provided.

22.3 Considering the nature of the construction activities that will take place on this project, the personal protective equipment that should be available on site are:

- Hard hats, eye protection, gloves, overalls, reflector vests, safety harnesses, welding helmets, dust masks, earmuffs, and ear plugs.

### 23 SPECIFICATIONS: SIGNS

Contractor must ensure that the following signs which are applicable are placed correctly in conspicuous areas.

- No unauthorized entry.
- Danger construction work.
- Danger workman above.
- Danger overhead lifting.

## HEALTH & SAFETY SPECIFICATIONS

- Visitors to report to site office.
- Site office directional.
- Hard hat area.
- First aid.
- Noise zone.
- Dust masks.
- Electrical hazard.
- Fire extinguisher.
- No smoking.
- Schedule D to be displayed on all notice boards in the case where machinery is used on site.

### 24 SPECIFICATIONS: DEMOLITION WORK

- Competent person/s appointed in writing to supervise and control demolition work  
Proof of Competence of the appointee must be available on site.
- A risk assessment must be carried out.
- Engineering survey and Method Statement must be available and on site before the commencement of work.
- Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register must be kept.

### 25 SPECIFICATIONS: CONSTRUCTION VEHICLES AND MOBILE PLANT

- 25.1 All Construction Plant and vehicle shall comply with the requirement of Construction Regulation 23.
- 25.2 All Construction Plant and vehicle shall be operated and inspected by a person who has received appropriate training, is certified competent and in possession of proof of competency and is appointed in writing.
- 25.3 All earthmoving equipment shall be operated in accordance with good safety practice so as to protect the safety of the operator and other workers or persons in the area.
- 25.4 All earthmoving equipment shall be equipped with a reverse siren.

### 26 SPECIFICATIONS: RECORDS AND REGISTERS

#### 26.1 Documentation

- Contractor will maintain the necessary documentation, registers and records required for compliance with regulatory and statutory requirements.
- During safety inspections these records will be available for viewing.
- At the project's completion these documents, registers and records will be

## HEALTH & SAFETY SPECIFICATIONS

incorporated into the consolidated health and safety file.

### 27 SPECIFICATIONS: HEALTH AND SAFETY

The Principal Contractor must, in terms of Construction Regulation 5(7), keep a Health & Safety File on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done.

The Health and Safety File will remain the property of the Client and/or its Agent on its behalf throughout the period of the project and shall be consolidated and handed over to the Client and/or its Agent on its behalf at the time of completion of the project.

- 27.1 A health and safety file shall be maintained on site by the appointed Contractor and each sub-contractor appointed by them.
- 27.2 The contents and arrangements of the file will be discussed and agreed upon with Praxos373 at the beginning of the contract.
- 27.3 When the contractor completes his part of the project, the Contract Manager and the sub-contractor's site management will review the completed health and safety file prior to their leaving the site.
- 27.4 At the end of the contract, the Contract Manager will consolidate the health and safety file to ensure completeness and then hand the file over to Praxos373.
- 27.5 Contents of the health and safety file:

- Copy of the Occupational Health and Safety Act and Regulations.
- Client's Safety Specification.
- Risk Assessments including safe working procedures and method statements.
- Fall Protection Plan.
- SHE plan and policies.
- Legal appointment letters.
- Letter of good standing and applicable insurances.
- Checklist and registers.
- Applicable notifications/ permits.
- Medical certificate.
- Incident/ accident reports.
- List of employees and plant utilized for the duration of the project.
- Any other legal documents required by the OHS act and relevant regulations.
- Asbestos Management plan

### APPOINTMENTS

- Appointment by Client
- Appointment of Manager

## HEALTH & SAFETY SPECIFICATIONS

- Construction supervisor
- Assistance Const. Sup
- Contractor (sub)
- Risk Assessor
- Fall Protection Planner
- First Aider
- Construction Safety Officer
- Incident Investigator
- Health and Safety Representative
- Health and Safety Committee member
- Electrical installation Supervisor
- Fire Equipment Inspector
- Construction Vehicle Operator/Inspector
- Stacking Supervisor
- Supervisor of demolition work
- Excavation Supervisor
- Appointment of AIA for asbestos

### RECORDS

- Risk Assessments
- Fall Protection Plan
- Demolition plan
- OHS inductions.
- Agreement with mandatory
- Safety induction of employees/others
- Persons working at Elevated positions.
- Incident recording and investigation
- Asbestos removal by competent asbestos contractor
- Disposal of products containing asbestos
- Incident reports
- Health and safety Rep. Inspections
- Issue of PPE
- Safety meeting minutes
- Letter of good standing from FEM or WCC
- Safety toolbox talks
- First Aid Box Contents
- First Aid treatments
- Training / Medical Certificates

### REGISTERS

- Portable electrical equipment
- Hand tools
- Construction vehicle
- Fire Extinguishers

## HEALTH & SAFETY SPECIFICATIONS

- Construction vehicles and mobile equipment
- Demolition checklist
- Ladders
- Excavators

### INTERPRETATION

The Occupational Health and Safety Act and all its Regulations, with the exception of the Construction Regulations, distinguish between the roles, responsibilities and functions of employers and employees respectively. It views consultants and contractors as employees of the “owner” of a construction or operational project, the “owner” being regarded as the employer. Only if formally agreed to by way of the written agreement in this regard between the “owner(s)” and consultant and /or between the “owner(s)” and the contractor(s), will these assumptions be relinquished in favour of the position agreed upon between the relevant parties.

The position taken by the Construction Regulations is that the “owner”, in terms of its instructions, operates (has to operate) in the role of client as per relevant definition. The contractors working for the “client” are seen to be in two categories, i.e. the Principal Contractor and Contractors. The Principal Contractor has to take full responsibility for the health and safety on the site of the relevant project / contract. This includes monitoring health and safety conditions and overseeing administrative measures required by the Construction Regulations from all contractors on the project site. (Ordinary / sub) Contractors are required to operate under the scrutiny and control (in terms of all health and safety measures which are covered in the Construction Regulations) of the Principal Contractor. Where, for the work the Principal Contractor will have to execute himself, practical health and safety measures are applicable, he will also be subject to the relevant requirements with which (ordinary / sub) Contractors have to comply. The Principal Contractor will, however, not have to actually fulfill such requirements in respect of any of the work / functions of any (ordinary / sub) Contractors on the site for which he has been appointed as Principal Contractor. However, he has to monitor / oversee such processes, ensuring that the requirements are complied with and that the required appointments / evaluations / inspections / assessments and tests are done and that the records are duly generated and kept as prescribed in the Construction Regulations. This has to feature clearly in the Principal Contractor’s Health and Safety Plan.



# MOBENI RESERVOIR 2 - BASELINE RISK ASSESSMENT

Record Keeping | Project HSE File, Supervisor, HSE Officer, Archive, Client and Consultants.

## Hazard, Risk, Environmental & Ergonomically Assessment

PRAXOS 373 (PTY) LTD	Task to be Performed	Risk Assessment Information	Baseline Risk Assessment Information
List Risk Assessment Team Names	Training Required	Risk Assessment No.	RA001
Paresh Narsai	General Induction	Revision No.	1
Hamish Williams	Site Specific Risk Assessments	Date of original issue	01-Feb-25
Jean-Paul Erasmus	Toolbox Talks	Date revised	01-Mar-26

## Assessment Matrix

Probability of Occurrence (P)	INJURY SEVERITY POTENTIAL (IS)	DAMAGE / LOSS SEVERITY (DS)	DURATION OF EXPOSURE (ED)	ERGONOMICS / ENVIRONMENT (E)	HEALTH (H)	Probability of Occurrence (P)	INJURY SEVERITY POTENTIAL (IS)	DAMAGE / LOSS SEVERITY (DS)	DURATION OF EXPOSURE (ED)	ERGONOMICS / ENVIRONMENT (E)	HEALTH (H)	Consequence (C)
Common Occurrence	Multiple Fatalities OR PERMANENT DISABILITIES	More than R 1 500 000	1<10> Days	Major	Major	5	5	5	5	5	5	30
Has Happened before	Fatal / Permanent Disability	R 300 000 to R 1 500 000	6<10> Hours	Serious	Serious	4	4	4	4	4	4	24
Could Occur	Moderate / Serious Injury	R 150 000 to R 300 000	3<6> Hours	Medium	Medium	3	3	3	3	3	3	18
Not likely	Lost Time Injury	R 15 000 to R 150 000	1<3> Hour	Minor	Minor	2	2	2	2	2	2	12
Practically Impossible	Minor injury – No Lost Time	Less than R 15 000	< 1 Hour	None	None	1	1	1	1	1	1	6

CURRENT RISK										REMEDIAL
TASKS STEPS	HAZARD IDENTIFIED	RISK ASSOCIATED WITH HAZARD	P	IS	DS	ED	E	H	C	HOW IS HAZARD TO BE DEALT WITH
1. Site establishment & clearing and grubbing of the area/site	Off-site transportation accidents	Project completion, disruption, fatalities and property damage	4	4	4	5	4	4	25	Adhere to speedlimits and National road standards
	No notice of arrivals on-site	Delays, resulting with loss of production time	3	2	2	2	2	2	13	Comply to all company rules, regulations, procedures and standards
	Incorrect loading & off-loading	Injuries / Unsafe work practices	4	4	4	3	5	4	24	Comply to all company rules, regulations, procedures and standards
	Use of unsafe lifting equipment resulting to equipment failure	Death, injury and damage to property	4	5	4	2	5	4	24	Comply to all company rules, regulations, procedures and standards
	Unsafe stacking and storage practices	Damage to property, injury to people	4	2	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Conducting work activities on poor ground conditions	Damage to property, injury to people	3	3	3	2	3	3	17	Ensure stability of ground
	Hoarding and Barricading public access	Public Liability	4	2	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Speeding and movement of vehicles on poor ground conditions	Damage to property, injury to people	5	3	3	3	4	4	22	Adhere to speedlimits and and drive according to road/weather conditions
	Vehicles in substandard conditions	Property damage, damage to surroundings and personnel injuries	3	3	4	2	2	3	17	Comply to all company rules, regulations, procedures and standards
	Unsafe/Unsecured storage of equipment and materials	Property damage, disruption	3	2	2	3	3	3	16	Comply to all company rules, regulations, procedures and standards
	Provision of inadequate/substandard ablution facilities and disposal of sewerage	Spillages, unhygienic conditions resulting in disease	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Provision of inadequate facilities (sheltered eating areas, lockers, etc.)	Poor facility management	3	2	2	1	2	2	12	Comply to all company rules, regulations, procedures and standards

	Disposal of cleared vegetation, rocks, boulders, etc.	Environmental degradation	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
2. Boundary & Access Control / Public Liability Exposure	Unauthorized access to construction site	Fatality, Injury to people	5	4	3	3	4	3	22	Comply to all company rules, regulations, procedures and standards
	Unaccompanied visitors/persons moving on construction site	Fatality, Injury to people	5	4	4	4	4	3	24	Comply to all company rules, regulations, procedures and standards
3. Surveying	Wrong Co-ordinates	Cost implications	3	3	2	1	3	2	14	Comply to all company rules, regulations, procedures and standards
	Equipment not calibrated	Cost implications	3	3	1	1	2	2	12	Comply to all company rules, regulations, procedures and standards
	Not wearing proper P PE	Injury to people	3	2	1	1	2	3	12	Comply to all company rules, regulations, procedures and standards
	Run over by vehicles or plant	Fatality, injury to people	4	4	3	4	2	2	19	Comply to all company rules, regulations, procedures and standards
	Slip, trip and fall ( uneven surfaces ) and holes in tall grass.	Injury to people	3	2	3	3	2	2	15	Comply to all company rules, regulations, procedures and standards
	Snakes, Spiders ect. In tall grass.	Fatality, injury to people	4	4	3	4	3	4	22	Comply to all company rules, regulations, procedures and standards
	Asst. knocking peg in ground with large hammer	Injury to people	3	2	3	2	3	2	15	Comply to all company rules, regulations, procedures and standards
	Standing in sun	Sun burn	3	3	1	2	2	2	13	Comply to all company rules, regulations, procedures and standards
	Drop surveying equipment	Damage to equipment	3	2	2	2	2	2	13	Comply to all company rules, regulations, procedures and standards
	Tri - Pod falling over	Damage to equipment	3	2	3	2	2	2	14	Comply to all company rules, regulations, procedures and standards



	Pegs not barricaded or marked	Injury to people	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
4. Reservoir 2 platform work	No permit to work	Fall from height, Fatal	4	4	3	4	3	3	21	Comply to all company rules, regulations, procedures and standards
	Incompetent workers	Fall from height, Fatal	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	No safe access and egress	Fall from height, Fatal	5	4	3	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Not checking roof structural integrity	Fall from height, Fatal	5	5	5	5	3	3	26	Comply to all company rules, regulations, procedures and standards
	Environmental conditions at the work site, rain, wind, lightning, gas, dust, housekeeping ect.	Slip and fall, Fatal	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Distance to walk to or work near an unprotected edge	Fall from height, Fatal	5	5	5	3	4	3	25	Comply to all company rules, regulations, procedures and standards
	No emergency response and rescue capabilities	Fatalities	4	2	2	1	4	3	16	Comply to all company rules, regulations, procedures and standards
	No barriers and signs to control access	Fall from height, Fatal	5	5	5	2	4	3	24	Comply to all company rules, regulations, procedures and standards
	Tools not secured to structure or hand	Fall from height, Fatal, injury to people	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
5. Dealing with and identification of existing services	Major power/water services failure	Loss of production time	4	2	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Unidentified existing infrastructure	Injuries and damage to property	4	2	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Bursting pipe	Flooding	4	2	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards

	Electrical cables	Electrocutions, Power outage, Public interference,	4	2	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Subsiding surfaces	Injury to people and damage to property	4	2	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
6. Work in the vicinity of truck yards, buildings, shops or other affected parties	Damage to surrounding property as a result of construction activities	Injury to people and damage to property	4	3	4	3	3	3	20	Comply to all company rules, regulations, procedures and standards
	Ecological disturbance as a result of dust and other Total Solid Particle emissions depositing on adjacent properties	Air & Soil pollution	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Noise pollution as a result of construction activities	Noise pollution	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Contaminated storm-water runoff from site onto adjacent properties	Surface water and soil pollution	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Dumping of wastes and other materials on surrounding land uses. Visual disturbances.	Waste generation & disposal	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Uncontrolled access of other parties to construction premises	Injury to people	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
7. Temporary earthworks and stockpiling	Unauthorized access to earthwork area	Injury to people	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Usage of incorrect or no PPE when in earthwork area	Injury to people	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
	Slippery, uneven surfaces and tripping hazards	injury to people	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
	Subsidences, cavings and inundation	Injury to People	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Operators of machinery not aware of workers, public and or affected people in area	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards

8. Earthworks - Excavations, Trenching & Working in trenches.	Employees not visible to operators/moving machinery	Accidents resulting in death or injury	5	5	5	1	5	3	24	Comply to all company rules, regulations, procedures and standards
	Excavations conducted without supervision of competent person	Injury to people, damage to property	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Inadequate shoring or bracing of excavation works	Sliding of ground resulting in death or injury	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Unsafe usage of hand tools (picks, shovels) when conducting excavation work	Injury to other workers as a result of overcrowding	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Access in and out of trenches not provided with ladders, etc.	Escape routes not available in the event of an emergency	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Presence of overhanging rocks or poor soil conditions	Collapsing of walls, falling objects resulting in injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Presence and/or operation of vibrating machinery close to trenches	Collapsing of walls resulting in injury to people	3	2	2	2	2	3	14	Comply to all company rules, regulations, procedures and standards
	Overcrowding of workers in trenches	Injury to other workers as a result of overcrowding	4	2	2	3	2	3	16	Comply to all company rules, regulations, procedures and standards
	Excavations not adequately barricaded	Employees falling and vehicles driving into excavations resulting in injury or damage to property	4	2	1	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Failure to comply with SHE specifications	Damage to property and rework	4	3	3	2	3	3	18	Comply to all company rules, regulations, procedures and standards
	Handling, Placing and lifting/lowering Heavy concrete stormwater pipe.	Injury to people, damage to property	5	5	5	3	4	4	26	Comply to all company rules, regulations, procedures and standards
	Confined space	Inundation, Fatality	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Spoil and back fill ground.	Injury to workers. Slipping and Falling	5	2	1	2	2	2	14	Comply to all company rules, regulations, procedures and standards

	Slippery, uneven surfaces and tripping hazards	Injury to workers. Slipping and Falling	4	3	2	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Nuclear testing of compaction by Troxler	Radiation	3	1	2	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Inadequate barricading of excavations, unauthorized access to excavations	Injury to people	4	3	2	2	3	3	17	Comply to all company rules, regulations, procedures and standards
9. Backfilling in trenches	Wearing of inadequate and incorrect PPE during operations	Injury to people	3	2	2	3	2	2	14	Comply to all company rules, regulations, procedures and standards
	Collapsing of trenches during backfilling operations	Death, falling, injury to people	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Trenches not cleared and unmanned before backfilling commences	Death, injury to people as a result of being buried	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Presence and/or operation of vibrating machinery close to trenches	Collapsing of walls resulting in injury to people	4	5	4	4	4	3	24	Comply to all company rules, regulations, procedures and standards
	Presence of overhanging rocks or poor soil conditions	Collapsing of walls, falling objects resulting in injury to people	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Access in and out of trenches not provided with ladders, etc.	Escape routes not available in the event of an emergency	4	2	1	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Hand tools damaged, splintered, unmaintained and not inspected	Injury to hands, e.g. splinters and body as a result of damaged hand tools	5	2	2	1	3	4	17	Comply to all company rules, regulations, procedures and standards
	Overcrowding of workers in trenches	Injury to other workers as a result of overcrowding	4	2	1	2	2	3	14	Comply to all company rules, regulations, procedures and standards
	Employee census not conducted when working in trenches	Not extracting buried persons in time due to not knowing where they worked.	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
10. Steel reinforcing	Protruding reinforcing blocking walkways	Injuries to people	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards

	Sharp edges and cutting ends.	Injury to people	4	2	1	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Unsafe stacking and storage practices of steel	Damage to property, injury to people	4	2	1	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Incorrect loading & off-loading by untrained personnel	Injuries to people	4	4	3	2	3	3	19	Comply to all company rules, regulations, procedures and standards
11. Concreting. Placing and pumping.	No or incorrect PPE use	Foreign body in eyes	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Concrete spills due to poor housekeeping practices	Injuries to personnel and environmental pollution	4	2	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Incorrect handling of concrete bucket	Injuries to hands	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	High Pressure Pumping columns	High Pressure injuries, damage	3	2	1	3	3	3	15	Comply to all company rules, regulations, procedures and standards
	Incorrect handling of concrete chute, Pump nozzle hose.	Severe injuries to hands	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
12. Work in elevated positions	Unsafe access resulting in personnel falling from heights	Fatalities and property damage	4	5	4	3	4	4	24	Comply to all company rules, regulations, procedures and standards
	No fall protection plan	Non Conformance. Legal action.	5	5	5	2	4	3	24	Comply to all company rules, regulations, procedures and standards
	Personnel falling from heights due to opening in floors, edges. Unsafe barriers, barricading and edge protection	Fatalities and property damage	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Inadequate emergency , recovery plan.	Fatalities and property damage	5	5	2	2	4	3	21	Comply to all company rules, regulations, procedures and standards
	Personnel not using safety equipment (Untrained, poor quality, wrong application, negligent, fall arrest equipment, unsecured)	Fatalities and property damage	3	4	4	5	4	4	24	Comply to all company rules, regulations, procedures and standards

13. Scaffolding. Erecting, dismantelling, accessing	Scaffolding collapsing are a result of inadequate design/erection	Fatalities, serious injuries and damage to property	3	5	2	2	3	3	18	Comply to all company rules, regulations, procedures and standards
	Using substandard scaffolding and untrained personnel falling from heights	Fatalities and damage to property	5	2	5	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Unskilled erectors, inspectors. Lack of planning.	Fatalities, serious injuries and damage to property	3	5	2	2	3	3	18	Comply to all company rules, regulations, procedures and standards
	Faulty, damaged and poor quality formwork material	Fatalities, serious injuries and damage to property	5	5	4	3	4	3	24	Comply to all company rules, regulations, procedures and standards
	Unsafe inadequate access.	Fatalities, serious injuries and damage to property	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Equipment, material falling from scaffolds	Fatalities, serious injuries and damage to property	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Inadequate/ unsafe edge protection	Fatalities, serious injuries and damage to property	5	5	5	2	4	3	24	Comply to all company rules, regulations, procedures and standards
	Inadequate safety signs and notices	Injuries and damage to property	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
14. Suspended Platforms	No approved design	Injury to people, Fatalities and Legal applications	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	No inspections	Injury to people, Fatalities	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Maximum mass load exceeded	Injury to people, Fatalities	3	2	1	1	3	3	13	Comply to all company rules, regulations, procedures and standards
	No performance test before installation	Injury to people, Fatalities	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Incompetent person	Injury to people, Fatalities	4	2	1	1	3	3	14	Comply to all company rules, regulations, procedures and standards

	Structure to which platform is install not thoroughly examined	Injury to people, Fatalities	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	No medical fitness certificate / workers / operator	Injury to people, Fatalities	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Not isolated after completion of shift	Injury to people, Fatalities	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	No proper P PE	Injury to people, Fatalities	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
15. Formwork and support work	Formwork and support work not according to specification, including unsafe access, open edges and unsafe edge protection	Fatalities and property damage, Falling from heights	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Collapsing of structures	Fatalities and property damage	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Unsafe / inadequate design.	Fatalities and property damage	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Unskilled erectors, inspectors. Lack of planning.	Fatalities and property damage	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Faulty, damaged and poor quality formwork material	Fatalities and property damage	3	3	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Equipment falling from heights as a result of not being adequately secured	Injuries and damage to property and falling from heights	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
16. Confined spaces	Permit to work is not issued before commencement of activity	Injury to people	3	3	3	3	3	4	19	Comply to all company rules, regulations, procedures and standards
	Activity is not conducted under supervision of competent person	Injury to people	3	2	2	2	2	3	14	Comply to all company rules, regulations, procedures and standards
	Lock-out system is not in place and controlled	Injury to people	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards

	Air quality is not tested before entering confined space	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Inadequate ventilation conditions	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Inadequate artificial illumination	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Breathing apparatus is not maintained, in good working order and correctly used	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	"Buddy-system" is not implemented when necessary	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Confined space is not certified to be safe before entering	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
	Confined space is not evacuated on completion of work activities	Injury to people	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
17. Health hazards, Hazardous Chemicals, Paints, thinners, etc.	Exposure to people, insects, bees, snakes, rats etc.	Bites, stings, etc.	3	3	2	3	3	2	16	Comply to all company rules, regulations, procedures and standards
	Exposure to gases and fumes in working environment	Inhalation resulting in breathing problems	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Exposure to extreme temperatures in working environment	Dehydration, cold	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Exposure to noise	Noise induced hearing loss	3	3	3	2	3	2	16	Comply to all company rules, regulations, procedures and standards
	Exposure to dust and total solid particles	Inhalation resulting in breathing problems	3	3	3	2	3	2	16	Comply to all company rules, regulations, procedures and standards
	Exposure to vapors or explosions	Inhalation resulting in breathing problems. Explosions resulting in death, injury to people & excessive damage to Property.	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards



	Exposure to vibration	Injury to people	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Ergonomic hazards from manual handling & mechanical operations	Back strains, backaches, spasms, etc.	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
18. Movement of and working with construction vehicles	Usage of unsafe, unmaintained vehicles	Injury to people, damage to property	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Pedestrian accidents and collisions of vehicles	Injury to people, damage to property	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Speeding of construction vehicles on site	Injury to people, damage to property	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Passengers falling from truck	Injury to people	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Driving for prolonged hours (10 hours)	Injury to people, damage to property as a result of falling a sleep	3	2	1	2	3	3	14	Comply to all company rules, regulations, procedures and standards
	Unauthorized driving / operating of vehicles	Accidents, collisions, injury to people, damage to property	3	3	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Unskilled/ trained operators	Accidents, collisions, injury to people, damage to property	3	3	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Overloading of vehicles	Accidents, collisions, injury to people, damage to property	4	3	1	2	3	3	16	Comply to all company rules, regulations, procedures and standards
19. Loading & Off-loading of trucks / Aggregate/Sand and other materials delivery	Movement of vehicles and pedestrians on construction site	Accidents, injury to people as a result of moving traffic onsite	3	3	2	3	2	3	16	Comply to all company rules, regulations, procedures and standards
	Inadequate directional and traffic signs	Accidents, injury to people and damage to property as a result of inadequate directional and traffic signs	3	2	2	2	2	3	14	Comply to all company rules, regulations, procedures and standards
	Inadequate warning systems in place when reversing and off-loading	Accidents, injury to people and damage to property as a result of poor warning systems	3	3	2	3	2	3	16	Comply to all company rules, regulations, procedures and standards

	Collision with skips and other equipment	Injury to people, damage to property	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Load throws as a result of poor driving	Injury to people, damage to property and loss of raw materials	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Load throws as a result of poor road conditions	Injury to people, damage to property and loss of raw materials	3	3	1	2	3	2	14	Comply to all company rules, regulations, procedures and standards
	Unsafe Stacking and Storage	Accidents, injury to people and damage to property as a result of poor stacking and storage discipline systems	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Spillages from materials	Waste generation & disposal	3	2	3	3	2	3	16	Comply to all company rules, regulations, procedures and standards
20. Installation & maintenance of temporary construction electrical supply, lighting and equipment	Conducting of unauthorized electrical work	Electrocution and burn	3	3	3	2	2	3	16	Comply to all company rules, regulations, procedures and standards
	Appropriate circuit breakers and electrical supply not switched off	Electrocution and burns	3	2	2	3	2	3	15	Comply to all company rules, regulations, procedures and standards
	Unsafe cabling and electrical supply system, earth leakages inadequate	Electrocution, disruption in electrical supply, fire, etc.	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
21. Usage of electricity	Locked-out procedure not followed resulting in electrocution	Fatalities, serious injuries	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Test equipment not available, faulty testing equipment, failure to test for zero energy	Fatalities, serious injuries	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
22. Usage of hand tools	Usage of substandard/broken hand tools	Injuries and damage to property	4	2	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Misuse of hand tools by untrained personnel	Injuries and damage to property	4	2	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Tools falling from heights as a result of not being adequately secured	Injuries and damage to property	4	2	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards

23. Usage of portable electrical equipment: Electrical drilling machine, angle grinder, skill saw etc.	Portable electrical equipment damaged or electrical wiring exposed	Injury to people due to failure in portable electrical equipment	3	3	3	2	2	3	16	Comply to all company rules, regulations, procedures and standards
	Plug and electrical cord damaged, uncovered or incorrectly wired	Electrical shock	3	2	3	2	2	3	15	Comply to all company rules, regulations, procedures and standards
	Connecting portable electrical equipment to electricity supply while switched on	Uncontrolled operation of portable electrical equipment resulting in injury to people and/or damage to property	3	2	3	2	2	3	15	Comply to all company rules, regulations, procedures and standards
	Consumption of electricity for energy purposes	Depletion / Use of natural resources	3	3	2	2	2	3	15	Comply to all company rules, regulations, procedures and standards
	Operating portable electrical equipment close to water or other conducting environments	Electrical shock from electrical current	3	3	1	1	2	2	12	Comply to all company rules, regulations, procedures and standards
	Usage of wrong drill bits for the type of material to be drilled	Breaking of drill bits resulting in uncontrolled flying objects resulting in injury to people and/or damage to property	3	2	1	1	2	2	11	Comply to all company rules, regulations, procedures and standards
	Long extension cords lying around operator while using portable electrical equipment	Cluttered working environment causing tripping or falling	3	2	3	2	2	2	14	Comply to all company rules, regulations, procedures and standards
	Dust and other solid particles emitted/flying into surrounding atmosphere	Inhalation of excessive dust, particle emissions by operator	3	2	3	2	3	2	15	Comply to all company rules, regulations, procedures and standards
	Noise generated by drilling operations	Excessive noise emissions resulting in decline of hearing ability (Noise induced hearing loss)	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
	Operator operating portable electrical equipment without or with wrong PPE.	Injury to eyes, hands and feet	3	2	3	2	2	3	15	Comply to all company rules, regulations, procedures and standards
	Drilling in hard to reach (narrow, high) places requiring crouching or stretching	Excessive repetitive crouching and stretching resulting in permanent back muscle injury	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
24. Fuel storage & supply	Fuelling of engines while running	Sparks, explosion causing injury to people	3	3	1	3	3	3	16	Comply to all company rules, regulations, procedures and standards
	Spillages of fuel during refueling operations	Environmental pollution	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards

	Smoking or fires during refueling operations or at fuel storage tanks	Open flames, explosion causing injury to people & damage to property	3	3	2	3	3	2	16	Comply to all company rules, regulations, procedures and standards
	Fuel storage tanks not properly earthed	Lightning, electricity, sparks, explosions	3	3	1	3	3	2	15	Comply to all company rules, regulations, procedures and standards
	Inadequate containment space within bund wall	Environmental pollution	3	3	2	3	3	3	17	Comply to all company rules, regulations, procedures and standards
25. Flammable, oil & paint storage areas	Inadequate access control into flammable storage areas	Fire risk, injury to people & damage to property	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Storage and transportation of flammable/hazardous chemicals & products	Fire risk, injury to people & damage to property	3	3	2	2	2	2	14	Comply to all company rules, regulations, procedures and standards
	Accumulation of waste and debris in areas	Waste generation & disposal	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
	Provision of inadequate ventilation system	Fire risk, injury to people & damage to property	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Inadequate Symbolic safety signs & notices	Ensure adequate symbolic safety signs & notices are displayed	3	3	2	2	2	2	14	Comply to all company rules, regulations, procedures and standards
	Fire fighting equipment, systems, etc. not inspected and maintained	Fire fighting equipments, systems, etc. not inspected and maintained	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Spillages from paints. chemicals & wastes	Surface water pollution	3	3	3	1	3	2	15	Comply to all company rules, regulations, procedures and standards
	Chemical gas and fume emissions from chemicals, oils & paints	Injury to people	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Incorrect usage of Personal Protective Equipment. No MSDS.	Injury to people	3	2	2	3	2	3	15	Comply to all company rules, regulations, procedures and standards
	Poor housekeeping practices in area	Fire risk, injury to people & damage to property	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards

26. Emergency, Fire fighting and prevention	Inadequate fire fighting equipment provided of suitable capacity and located at suitable locations	Fires burning out of control resulting in injury to people and/or damage to property	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Fire fighting equipment not maintained and serviced	Death and/or injury to people due to failure of fire fighting equipment	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Fire fighting equipment not accessible and unobstructed	Death and/or injury to people due to inaccessibility of fire fighting equipment	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Application of incorrect type of fire fighting equipment on various type of fires	Electrocution, increased spreading of fires, explosions, etc.	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Inadequate symbolic safety signs and notices indicating location of fire fighting equipment	Death and/or injury to people due to inaccessibility of fire fighting equipment	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Misuse or damaging of fire fighting equipment by employees	Death and/or injury to people due to failure of fire fighting equipment	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Emergency exists not kept clear, unobstructed and able to open in an emergency situation	Death and/or injury to people due to blocking of escape routes	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Emergency alarm system not present and in operation	Death and/or injury to people as a result of poor warning system	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Fire team members untrained, unfamiliar with emergency procedures and alert	Slow response from fire fighting team resulting in deaths, injury to people and excessive damage to property	3	2	2	2	3	3	15	Comply to all company rules, regulations, procedures and standards
	Entering buildings, etc. with diminishing structural integrity	Failure in structural integrity resulting in injury to people	3	2	2	2	2	3	14	Comply to all company rules, regulations, procedures and standards
	Excessive smoke emissions from fires	Smoke inhalation resulting in suffocation	3	3	3	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Excessive smoke emissions from fires	Air pollution	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Excessive heat emissions from fires	Death, burns, injury to people & damage to property	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards

	Disposal of waste, ash and coal after fire is extinguished	Waste generation & disposal	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Usage of water from hydrant during fire fighting operations	Depletion / Use of natural resources	3	3	3	2	3	3	17	Comply to all company rules, regulations, procedures and standards
	Contaminated water runoff from emergency scene	Surface water & soil pollution	3	3	3	2	4	3	18	Comply to all company rules, regulations, procedures and standards
	Fire fighting done without or with incorrect PPE	Death, burns, injury to people	3	3	3	2	3	4	18	Comply to all company rules, regulations, procedures and standards
	Stress, trauma during fire fighting operations	Psychological effect on fire fighters, e.g. depression	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Explosion of combustible or flammable materials during emergency situations	Explosions, deaths, injury to people & excessive damage to property	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Starting of fires as a result of smoking and burning cigarette butts on site	Starting of fires as a result of poor smoking management	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Inadequate emergency exits and passageways to ensure safe egress from buildings and structures	Death and/or injury to people due to inadequate emergency exits and passageways	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Overcrowding of assembly points	Falling, tripping, panic due to overcrowding of assembly points	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Hysteria due to panic state during fire emergency situation as a result of lack of emergency drills	Long-term psychological effects on employees, e.g. depression, fear as a result of emergency situation	3	3	1	2	3	3	15	Comply to all company rules, regulations, procedures and standards
27. Lifting equipment.	Failure in lifting equipment due to poor maintenance and inspections	Failure in equipment resulting in injury to people and damage to property	5	5	4	4	3	3	24	Comply to all company rules, regulations, procedures and standards
	Wrong lifting equipment used	Injury to people, damage to property	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Rigger not competent	Injury to people, damage to property	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards

	Not wearing correct P PE	Injury to people.	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
28. Fabricate and modifying piping.	Nip points.	Injury to people	3	2	2	2	3	2	14	Comply to all company rules, regulations, procedures and standards
	Incorrect and unsafe material handling.	Damage to property, injuries to people	3	2	2	2	2	3	14	Comply to all company rules, regulations, procedures and standards
	Poor communication.	Damage to property, injuries to people	3	3	2	2	2	2	14	Comply to all company rules, regulations, procedures and standards
	Restricted access.	Damage to property, injuries to people	3	3	2	2	2	2	14	Comply to all company rules, regulations, procedures and standards
	Substandard house keeping, tripping and slipping hazard.	Injury to people	3	2	2	3	2	2	14	Comply to all company rules, regulations, procedures and standards
	Unsafe stacking of material.	Injury to people	3	2	2	1	2	2	12	Comply to all company rules, regulations, procedures and standards
	No pipe supports ( Trestles )	Damage to property, injuries to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
29. Rigg and lifting work	Task area not barricaded ( Unauthorised persons in task area ).	Injury to people	4	4	2	4	3	3	20	Comply to all company rules, regulations, procedures and standards
	Overhead lifting.	Injury to people	4	3	2	1	4	3	17	Comply to all company rules, regulations, procedures and standards
	No guide ropes.	Damage to property, injury to people	4	5	4	4	4	3	24	Comply to all company rules, regulations, procedures and standards
	Sub - standard working conditions - Wet, slippery, windy, dustywork conditions.	Damage to property, injury to people	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Poor lighting.	Damage to property, injury to people	3	2	1	1	2	3	12	Comply to all company rules, regulations, procedures and standards

	Rigger not competent.	Damage to property, injury to people	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Wrong or defective rigging equipment used. ( Not inspected and on register )	Damage to property, injury to people	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
30. Piling	Piling	Damage to property, injury to people, Delay in process	3	3	3	2	2	3	16	Comply to all company rules, regulations, procedures and standards
	Drilling into underground services	Damage to property, injury to people, Delay in process	4	2	3	3	4	3	19	Comply to all company rules, regulations, procedures and standards
	Unskilled/ trained operators	Damage to property, injury to people, Delay in process	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Drilling at wrong position, direction, dimensions.	Flooding	3	2	2	2	2	2	13	Comply to all company rules, regulations, procedures and standards
	Noise/Dust and pollution	Occupational diseases	4	2	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
	Moving Rotating and spinning machinery/ parts.	Injury to people	3	3	2	2	3	3	16	Comply to all company rules, regulations, procedures and standards
31. Install piping	Unsafe material handling practices.	Damage to property, injury to people	3	2	1	1	2	3	12	Comply to all company rules, regulations, procedures and standards
	Nip points	Injury to people	3	2	1	1	2	3	12	Comply to all company rules, regulations, procedures and standards
	Poor communication between workers.	Damage to property, injury to people	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Pipes falling from position ( not secured )	Damage to property, injury to people	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Overhead work	Damage to property, injury to people	3	3	1	1	3	3	14	Comply to all company rules, regulations, procedures and standards



	Substandard, incorrect and faulty lifting tackle and equipment.	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Incorrect use of lifting tackle and equipment	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Incompetent people performing task	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Unsafe lifting practices.	Damage to property, injury to people	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
32. Tie into existing services	No permit to work	Damage to property, injury to people	4	3	2	1	2	3	15	Comply to all company rules, regulations, procedures and standards
	No lock out procedures followed	Damage to property, injury to people	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Unsafe material handling practices	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Nip Points	Injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Poor communication between workers.	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Pipes falling from position ( not secured )	Damage to property, injury to people	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Contaminating liquid leaks out of existing ( old ) services Lines not purged	Injury to people, environmental	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Tie in into wrong services	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Not wearing proper P PE	Injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards

33. Commissioning, clean area and equipment	Working on live pipe lines, valves, pumps and machinery	Damage to equipment, injury to people	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Lock out procedures not followed	Damage to equipment, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Incompetent workers	Damage to equipment, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Not wearing proper P PE	Injury to people	2	2	2	1	2	3	12	Comply to all company rules, regulations, procedures and standards
34. Pressure Testing.	Incompetent workers	Damage to property, injury to people	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	No safe work procedure and method statement	Damage to property, injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Faulty pressure testing equipment	Damage to property, injury to people	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Not wearing proper P PE	Injury to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
35. Water Management	Incompetent person to identify potential drowning ares ( No Plan )	Drowning	4	5	3	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Working in water without assistance	Drowning	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	People working in water that can not swim	Drowning	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Slip, trip and fall on slippery surfaces when working in water	Drowning	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Confined spaces containing water	Drowning	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards

	Vehicle accidents into water	Drowning	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	No life savings equipment, life jackets ect.	Drowning	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Wrong P PE	Drowning	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Storms, floods	Drowning	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Mud/Slurry	Suffocate	4	2	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	In rushes	Drowning, Suffocate	4	3	2	1	2	3	15	Comply to all company rules, regulations, procedures and standards
	Electricity	Electrocution	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
36. Demolitioning	Incompetent workers	Fatalities, injuries to people	4	4	3	5	4	4	24	Comply to all company rules, regulations, procedures and standards
	Sub-standard equipment	Fatalities, injuries to people	4	5	5	5	2	3	24	Comply to all company rules, regulations, procedures and standards
	Working at heights	Fatalities, injuries to people	4	5	4	4	4	3	24	Comply to all company rules, regulations, procedures and standards
	No barriers to keep unauthorized people out	Fatalities, injuries to people	3	4	4	4	4	4	23	Comply to all company rules, regulations, procedures and standards
	No signs	Fatalities, injuries to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	No permit to work	Fatalities, injuries to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards

	No method statement	Fatalities, injuries to people	4	5	4	5	4	4	26	Comply to all company rules, regulations, procedures and standards
	Not checking the structural integrity at intervals	Fatalities, injuries to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Floor, roof and other parts of structure is overload with debris or material	Collapse, Fatalities, injuries to people	5	5	5	5	2	3	25	Comply to all company rules, regulations, procedures and standards
	No adequate shoring or such other means to prevent the collapse of adjoining structure	Collapse, Fatalities, injuries to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Services not isolated	Fatalities, injuries to people	5	5	5	5	5	3	28	Comply to all company rules, regulations, procedures and standards
	Substandard chutes for removing debris or material from floor level to ground level	Collapse, Fatalities, injuries to people	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
37. Pressure vessels / Compressors	Incompetent workers	Injury to people	4	2	2	1	3	4	16	Comply to all company rules, regulations, procedures and standards
	Not wearing proper P PE	Injury to people	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	No valid test certificate	Explosion, Fatalities	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Max pressure not marked on guage	Explosion, Fatalities	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Hoses/Pipes in poor condition	Burst, injury to people	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	No fire extinguisher	Fire, injury to people	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Substandard equipment	Injury to people	4	2	2	1	4	3	16	Comply to all company rules, regulations, procedures and standards

	Vibration	Injury to people	4	2	2	1	4	3	16	Comply to all company rules, regulations, procedures and standards
	Ergonomics / wrong body position	Injury to people	3	2	1	1	3	3	13	Comply to all company rules, regulations, procedures and standards
	Noise	Possible deaf	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	No pre-use inspection	Injury to people	3	2	1	1	3	3	13	Comply to all company rules, regulations, procedures and standards
	No whiplash slings attached to hoses	Injury to people	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
38. Asphalting of gravel access road	Not wearing proper P PE	Burns	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Fumes	Inhaling fumes	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Contact with burners and tack coat	Burns	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Run over by vehicle	Fatality	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Entering area between the two units of plant may be struck down and run over	Fatality	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Moving parts not guarded	Injury to people	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	Hot material	Burns	4	2	1	4	2	3	16	Comply to all company rules, regulations, procedures and standards
	Incompetent workers	Injury to people	3	2	3	1	3	3	15	Comply to all company rules, regulations, procedures and standards

39. Night work	Inadequate illumination to perform work activities	Injury to people, damage to property	3	2	1	3	3	3	15	Comply to all company rules, regulations, procedures and standards
	Fatigue	Injury to people, damage to property	4	4	4	4	4	4	24	Comply to all company rules, regulations, procedures and standards
	Lack of supervision	Injury to people, damage to property	3	3	2	4	3	3	18	Comply to all company rules, regulations, procedures and standards
	Security	Security uncontrolled access. Theft, Sabotage, Damage to property. Personal injury. Liability claims	3	2	1	1	3	3	13	Comply to all company rules, regulations, procedures and standards
40. Management of change to Engineering process, Operating and design, Quality, Operating personnel, External personnel, Regulations, Standards, COP's, Organisational structures, Suppliers, Community, Client/users or Other.	Not informing relevant people of any changes on project.	Damage to property, injuries to people and fatalities	3	2	2	1	2	3	13	Comply to all company rules, regulations, procedures and standards
41. Adjacent land uses/Surrounding property exposures	Damage to surrounding property as a result of construction activities	Injury to people and damage to property	3	3	2	1	2	3	14	Comply to all company rules, regulations, procedures and standards
	Ecological disturbance as a result of dust and other Total Solid Particle emissions depositing on adjacent properties	Air & Soil pollution	3	3	2	2	2	3	15	Comply to all company rules, regulations, procedures and standards
	Noise pollution as a result of construction activities	Noise pollution	3	2	1	1	2	3	12	Comply to all company rules, regulations, procedures and standards
	Contaminated storm-water runoff from site onto adjacent properties	Surface water and soil pollution	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Dumping of wastes and other materials on surrounding land uses	Waste generation & disposal	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
	No acceptance documentation for borrow pit	Legal action against company	3	2	2	1	2	2	12	Comply to all company rules, regulations, procedures and standards
	No acceptance documentation for Hostel	Legal action against company	3	2	3	2	2	2	14	Comply to all company rules, regulations, procedures and standards

	No rehabilitation of area	Legal action against company	3	3	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
42. Contractor interface	No communication	Damage to property, injuries to people and fatalities	4	2	1	1	2	3	13	Comply to all company rules, regulations, procedures and standards
	Overhead work	Damage to property, injuries to people and fatalities	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Openings in walkways and floors	Injury to people	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	Lifting and slewing	Damage to property, injuries to people and fatalities	4	3	2	1	3	3	16	Comply to all company rules, regulations, procedures and standards
	Portable electric equipment	Electrocution	4	2	2	1	3	3	15	Comply to all company rules, regulations, procedures and standards
	No handover and acceptance documentation in place	Damage to property, injuries to people and fatalities	3	2	2	1	3	3	14	Comply to all company rules, regulations, procedures and standards
43 Asbestos Work	No notification to DoEL	Unauthorised Hazardous Work No Environmental Monitoring Of Asbestos Fibres - Maybe Required	3	4	2	3	3	3	18	Comply to all company rules, regulations, procedures and standards
	No Authorised work permit	Wrong Work Wrong. Work Area Language Barrier. No Asbestos Work Permit. No Hygienist Report	4	4	3	2	2	3	18	Comply to all company rules, regulations, procedures and standards
	No pre-checks before work is undertaken	Unsuitable equipment. Untrained workers. No medicals. No documentation for task. No dsti open and close. No proper ppe for asbestos work. No suitable showers and eating facilities. No suitable hazardous waste disposal facilities available for asbestos waste.	4	4	3	3	3	3	20	Comply to all company rules, regulations, procedures and standards
	No Demarcation /Barricading:	Unauthorised entry, injury/harm to trespassers. workers unaware of hazardous work operation because of no signage or language barrier	3	4	2	4	3	2	18	Comply to all company rules, regulations, procedures and standards
	Removal of asbestos	No safe work procedure. No authorisation. Workers unaware of job function and hazards involved. Worker's incompetent to do job. Untrained workers. No suitable tools. Forcing the sheets away from housing.	4	4	3	4	2	3	20	Comply to all company rules, regulations, procedures and standards