PROPOSALS FOR CONDUCTING OCCUPATIONAL HYGIENE SURVEYS AT TRANSNET ENGINEERING (TE) BUSINESSES AT THE KOEDOESPOORT PLANT, COAL NORTH AND NORTH EAST CORRIDORS

1. INTRODUCTION

Transnet Engineering (TE) business strives to conduct its business activities within the framework of a Health and Safety Management system based on ISO 450001, OHS Act, 85 of 1993 as amended and other SHE related legislations, National Railway Safety Regulator Act, 2002 (As amended) including SANS 3000-4:2001 (Human Factor Management) and ISO 14001 and other Environmental related legislations.

TE Koedoespoort comprises of:

- The Plant with approximately Twelve (12) manufacturing- and twelve (12) maintenance and support service businesses.
- The North Coal Corridor consist of one (1) PEMM-, twenty (20) Wagon Maintenance- and nine (9) Locomotive Maintenance depots (inclusive of sub depots).
- The North East Corridor consist of two (2) PEMM-, ten (10) Wagon Maintenance and eight (8) Locomotive Maintenance depots (inclusive of sub depots).

The organisation is dedicated to in-service and out of service maintenance depots (en route maintenance of rolling stock), repair, upgrade, conversion, refurbishment and manufacturing of freight wagons, mainline and suburban coaches, diesel and electric locomotives as well as wheels, rotating machines, rolling stock equipment, castings, foundries, auxiliary equipment and support services.

Some of the activities like spray painting, shot blasting, cleaning of components with chemicals, gas burner operations, steam cleaning will require personal sampling and stack monitoring. AIA should identify such activities and sampling points / areas as well as accessibility to these areas.

TE invites proposals from suitably qualified Approved Inspection Authority (AIA) to conduct Occupational hygiene monitoring at its businesses across the Plant and the three corridors.

The need for this monitoring comes as a result of legislative requirements, SANS requirements, TE policies and code of practices and its commitment to prevention and minimize health hazards in the work environment.

2. LEGAL REQUIREMENTS

TE requires that Occupational Hygiene Surveys be carried out in line with the following, but not limited to, legal requirements:

- Occupational Health & Safety Act, 1993 (Act 85 of 1993) as amended and all applicable regulations incorporated under this Act
- Occupational Health and Safety Act, 1993 (Act 85 of 1993), Ergonomics Regulations, 2019
- SANS 3000-4:2011 Human Factors Management Standard
- Railway safety management standard part 4-1: human factors management – fatigue management.
- Occupational Health and Safety Act, 1993 (Act 85 of 1993), Regulations for Hazardous Chemical Agents, 2021
- Occupational Health and Safety Act, 1993 (Act 85 of 1993), Regulations for Hazardous Biological Agents, 2022
- Occupational Health and Safety Act, 1993 (Act 85 of 1993), Noise Exposure Regulations, 2024
- Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024
- ISO 2631-1:1997 - Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration Standard.
- All applicable South African National Standards (SANS) referred to in the Occupational Health and Safety Act, 1993 (Act 85 of 1993 as amended), as well as Railway Safety Legislation (SANS 3000-4:2011 (Section 5 Physical Environmental factors) and all regulations incorporated under this Act.
- Air Quality Act, 2004 (Act 39 of 2004)
- Air quality regulation: listed activities
- Transnet Engineering SHE IMS Corporate Standards and Policies
- Transnet Integrated Management System (TIMS) procedures.
- Compensation for Occupational Injuries and Diseases Act, 1993 (Act 130 of 1993)
- International standards and Best practices
- TE Ambient Noise standard
- TE Ambient vibration standard
- Occupational Health and Safety Act, 1993 (Act 85 of 1993), Asbestos abatement regulation, 2020
- Waste act 59, 2008 (Act 59 of 2008): Part 8

3. SERVICE PROVIDER COMPETENCY

- The service provider must be certified by the South African National Accreditation System (SANAS) as an Inspection Body in terms of South Afrian National Standards (SANS) 17020 and accredited as an Approved Inspection Authority (Occupational Health and Hygiene) by the Department of Employment and Labour. The valid Certificate of approval must accompany the quotation. TE will require a valid / recent copy of the certificate with each report supplied.
- Personnel involved in the services of the Approved Inspection Authority must be registered with the Southern African Institute of Occupational Hygiene (SAIOH). TE will require copies of the certificates with each report supplied.

- The Approved Inspection Authority must include at least one Occupational Hygienist.
- Assistant Occupational Hygienists must be under the direct supervision of the Occupational Hygienist if they are to conduct monitoring surveys.
- An Occupational Hygiene Technologist must be registered with SAIOH and hold a valid legal competency certificate. TE will require copies of the certificates with each report supplied.
- Ergonomist: Be registered with the Professional Affairs Board of the Ergonomics Society of South Africa. Be a Certified Professional Ergonomist (CPE) linked to the International Ergonomic Association. Hold a master's degree in Ergonomics (Minimum Qualification). Degree must be from a South African University.

- Site inspection by the AIA is imperative before submitting quotations so as to be familiar with the occupational health hazards and risks in the workplace.

4. MONITORING EQUIPMENT REQUIREMENTS

An AIA must:-

- Be in possession of technical equipment required for sampling.
- Be able to provide the valid calibration certificates for each piece of equipment used for sampling. TE will require a valid / recent copy of the equipment calibration certificate with each report supplied.
- Be accountable and responsible for the correct operation and calibration of all equipment used, whether it belongs to them or not.
- Be accountable and responsible for the result obtained if external accredited analytical laboratories (e.g SANAS) are used for sample analysis.
- Instruct the laboratory on specific method of sampling analysis required (in accordance with legislation and SANS codes).
- Certify that the given method was used for the sampling analysis. Any deviation from the sampling method must be recorded and the reason for such deviation must be motivated.
- Give explanation, control measures and recommendations regarding findings and non-conformances as part of his report
- Compile and submit a comprehensive report which shall include, but not limited findings, control measures, non-conformances and recommendations.
- The report must be compiled according to SANS 17020 standard (minimum requirement). Include Drawings/Lay-out Plan indicating survey points, Survey Methodology, etc.

5. SCOPE OF WORK

The following surveys or assessments will need to be conducted:

5.1 Identification and Evaluation of Occupational Health Stressors

Occupational Hygiene Risk Assessment

- Occupational Hygiene Risk Assessment is conducted in order to recognise, identify and anticipate potential health risks associated with environmental factors and stresses such as

physical, chemical, biological, ergonomical and psychological hazards to which employees are exposed to in the workplace.

- An AIA shall condut an Occupational Hygiene Risk Assessment for each Business/Depot/ Sub-depot (Annexure A).
- Must include Exposure Risk Assessment of all agents as per the Occupational Health & Safety Act, 1993 (Act 85 of 1993) as amended and all applicable regulations incorporated under this Act.
- An AIA shall condut an Exposure Risk Assessment for each Business/Depot/ Sub-depot (Annexure A).
- Indicate the different Similar Exposure Groups (SEG) (for each Business/Depot/ Sub-depot.
- Thereafter an Occupational Hygiene Programme must be developed from which occupational hygiene monitoring will be planned.
- Requirements inline with the Occupational Health & Safety Act, 1993 (Act 85 of 1993) as amended and all applicable regulations incorporated under this Act must also be considered for all identified environmental factors and stresses.
- AIA in cooperation with TE shall complete the Occupational Hygiene Programme (Refer to **Annexure C,** attached).

Baseline Process

- Determine the current state of the occupational health risks associated with TE activities.
- Gather information about work and work practices e.g. identify raw products, additives added to the product involved.
- Obtain and avail inventory of Hazardous chemicals and Safety Data Sheets (SDS).
- Compile a list of what Hazardous Chemical Agensts (HCA) must be measured.
- Determine number of employees exposed per stressor.
- Identify control measures in place.
- Determine Likelihood of exposure.
- Determine frequency and duration of exposure.
- Determine potential severity of exposure.
- Provide quantitative ratings.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.

For risk identification, AIA shall list all activities from the start of its process to the end and identify the following stressors:-

5.1.1 Chemical Stressors

- Dust (e.g. Asbestos, Silica, etc)
- Smoke (e.g. Smoke from stacks, Diesel Locomotives, etc)
- Fumes (e.g. Exhaust emissions from Diesel Locomotives, metal fumes, etc)
- Mist (e.g. Spray Painting, during shunting movement and testing of Locomotives during commisioning)
- Gases (e.g. Hazardous chemicals) and
- Vapours (e.g. Lead from soldering processes)
- Conduct air quality monitoring on the five identified asbestos contaminated sites in Koedoespoort Plant.

- Old coaches/cabus

An AIA shall:-

- Conduct **Hazardous Chemical Agent Risk** identification, assessment and recommend control measures, and compile a Risk Register clearly indicating all the identified activities.
- Conduct air monitoring to determine the measurement of the airborne concentrations of the HCS to which employees are exposed and rate these interms of the significance as outlined in the **Regulations for Hazardous Chemical Agents, 2021**. Refer to chemical stressors in 5.1.1 and also consider other chemical substances not mentioned above.
- Silica Dust Monitoring - Conduct assessment to determine area that emit silica dust in accordance with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and monitoring.
- The **Hazardous Chemical Substance risk assessment** section of the assessment shall be undertaken in compliance and with due consideration to Section 8 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and SANS 16001 section.
- All other **Hazardous Chemical Substance** risks of current activities, products and services and new activities (new developments, modified activities, services or new projects, non-routine, emergencies) shall also be identified during these assessments.
- Evaluation should be done in accordance with monitoring strategy Occupational exposure sampling strategy Manual (173-1973).
- Evaluate the exposure of critical grades such as shunters, yard officials, tractor operators and locomotives drives to loco / hunslet/funkey/ tractor exhaust fumes in cab, dust areas, exposure to commodity in wagons and tankers and environment of shunting e.g. move into shot blasting/ spray painting area
- Consider regulation applicable for specific activities e.g. Asbestos, Lead, Silica.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.

5.1.2 Physiscal Stressors

- **Illumination**

Competent person shall:-

- Inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024.
- Measure the illumination level and compare with statutory requirements as per environmental regulation for workplaces as well as Human Factor standard (SANS 3000-4:2011) (e.g. Inside Cabs of shunting equipment such as Traverser, Funkey Locomotives, Whiting, etc) for each activity as well as yards where train activities are conducted, Lighting where coupling takes place, head light of shunting equipment (Tractor/funkey/hunslet/etc.) for visibility of rails, points, cross overs, walk area, etc) and security perimeters.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.

- Schematic drawing indicating workshop layout in comparison to sampling points to be included in the report.

- **Noise**

An AIA shall:-

- Establish: Impulse Noise, 8-hour Rating Level, Peak Noise Level, Noise Rating Limit and Noise Action Level.
- Identify ototoxic chemical agents and whole-body vibration acting synergistically with noise to cause hearing loss.
- Indicate all noise sources and area/zone on relevant maps and attach to the report.
- Take measurements at approximate position of the employee's ear who receives the higher noise level as contemplated in the South African Code of Practice for the measurement and assessment of occupational noise for hearing conservation purposes, SANS 083-1983 (as amended).
- The measured level must be representative of an 8hr work period.
- Provide practical recommendations and appropriate control measures including noise zones, taking into consideration the hierarchy of controls i.e. Elimination, Substitution, Engineering Control, Administrative control and PPE as the last resort.
- Schematic drawing indicating workshop layout in comparison to sampling points to be included in the report as well as Human Factor standard (SANS 3000-4:2011) (e.g. inside Cabs of shunting equipment, employees working in in-service areas between rolling stock in yards, load box testing, exposure of Yard officials and wagon examiners, Tractor drivers, etc.)
- For Human factor standard (SANS 3000-4:2011) Environmental noise that interfere with communication instructions,noise-induced fatigue and negative impact on health and lifestyle.
- Including static and personal dosimetry monitoring, ambient-, Environmental noise and the influence on wanted sounds which include warning signals and verbal commands that have to be audible.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Noise Exposure Regulations, 2024.

- **Thermal Conditions**

An AIA shall:-

- Identify and evaluate thermal stressors in accordance with Environmental regulations for work places 1987 under OHS Act 85 of 1993, as well as Human Factor standard (SANS 3000-4:2011) (e.g. employees exposed to harsh environmental conditions in winter and summer and working outside during shift work when doing train operation duties work especially in in-service yards at places like Ermelo, Vryheid, Komatipoort,etc. as well as inside cabins of shunting equipment). This must be conducted during winter and summer months and during night shift duties.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024.

- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.
- The thermal stress should be done twice to cover both results in two seasons which is during summer and winter (when it is too hot and when it is too cold).

(a) Heat stress

An AIA shall:-

- Identify sources of heat to the body.
- Ensure measurement is carried out in accordance with ISO code of practice 7243 and Environmental Regulations for workplaces OHS Act 85, 1993.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024.
- Provide a calibration certificate of the monitor.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.

(b) Cold Stress

An AIA shall:-

- Determine areas, occupants or tasks that place workers at risk of Hypothermia or cold related incidents.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024.
- Identify and evaluate cold stressors in accordance with Environmental regulations for work places 1987 under OHS Act 85 of 1993.

- **Ventilation and In-door air quality**

An AIA shall:-

- Measure air velocity to determine if the air breathed by employees does not endanger their health as determined by the Occupational Exposure Limit (OEL).
- Take into consideration the carbon dioxide, Carbon monoxide, Nitrogen dioxide, Sulphur dioxide, Formaldehide and Soot content of the air in line with Regulation 5(c) of the Environmental Regulations for Work Places.
- Measure ventilation and efficiency of extractions systems in the spray painting booths, shot blast booths and other similar systems.
- Apply best practices and legislative requirements.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.
- Air monitoring specifically for employees working with manganese in RSE Business.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024.

- **Occupational non-ionising radiation**

An AIA shall:-

- With regards to Non-Ionising radiation, an AIA shall identify sources of radiation i.e. Non-Ionising Radiation from welding activities, laser machines and other sources.
- Take measurements as per physical exposure risk assessment.
- The physical agent exposure monitoring must take into account the source of the occupational non-ionising radiation and the type of occupational non-ionising radiation.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Physical Agents Regulations, 2024.

5.1.3 Ergonomics incl Human Factors in Design and Fatigue

An AIA shall:-

- Conduct assessment to consider human abilities and limitations in relation to work positions and machines as per the latest approved Ergonomics Regulation.
- Identify and evaluate risks , also taking into consideration Human Factor standard (SANS 3000-4:2011) (e.g. Inside Cabs of shunting equipment, Operational equipment such as Point tumblers, Commode handles, Access to shunting equipment, walk ways).
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.

5.1.3.1 Service Provider Competency

The ergonomist that completes the assessment must:

- Be certified with the Professional Affairs Board of the Ergonomics Society of South Africa.
- Be a Certified Professional Ergonomist (CPE) linked to the International Ergonomic Association.
- Hold a master's degree in Ergonomics (Minimum Qualification).

The service provider must:

- Specialise in fatigue risk management programmes.

5.1.3.2 Description of Services Required

The services required should include, but not limited to the following:

Ergonomics Risk Assessment

- A certified ergonomist to conduct an Ergonomic Risk Assessment on all processes, activities and equipment.
- The Ergonomic Risk Assessment must include a complete hazard identification. All ergonomics factors muste be incorporate: Physical, Cognitive and Organisational.
- Quantify the ergonomic risks and provide management a priority list to identify high risk tasks.

- Quantify risks for MMH (Manual Material Handling), WRULD (Work Related Upper Limb Disorder), Push/Pull tasks, Repetitive Motion, Working in Awkward positions, Fatigue, Industrial Ergonomics, Office Ergonomics and Vehicle Ergonomics, etc.
- Consider age and functional capacity for tasks.
- Include requirements included in the Ergonomic Regulations, 2019
- Include cognitive ergonomics.
- Indicate the total amount of employees possibly exposed to ergonomics risks.
- Employees who might be at risk must be identified.
- Identify employees for Ergonomics medical surveillance.
- Similar Exposure Groupings (SEG) of employees according to Grade and activities.
- Ergonomics Recommendations including e.g. relevant preventative and corrective control measure recommendations.
- Ensure incidents caused due to ergonomic risks are assessed.
- Relevant scientifically approved methodology must be used in line with International Safety Standards (ISO), National Institute for Occupational Safety and Health (NIOSH) and Threshold Limit Values (TLV's).

Scope of the Industrial/Operational Ergonomics Risk Assessment

- Comprehensive survey and risk identification of all tasks in all work areas as per Annexure 1 sampled Operational Areas.
- Vibration analysis.
- Employee task and physiological capacity analysis.
- Data reduction with biomechanical and statistical analysis.
- Comprehensive ergonomics report with priority listing.
- Ergonomics recommendations.

Scope of the Office Ergonomics Risk Assessment (Individual Offices)

- Comprehensive measurement and evaluation of office-based employees at their workstation as per Annexure 1 sampled Operational Areas.
- Ergonomic compliance rating with respect to both furniture and current set-up.
- Detailed report including ergonomic recommendations.

Scope of the Vehicle Ergonomics Risk Assessment

- Comprehensive survey and risk identification on vehicles as per Annexure 1 sampled Operational Areas e.g., Bakkies, Breakdown Lorrie, Bulldozer, Shunting Device, Forklifts.

❖ ***Mobile equipment:***

- Ergonomics assessment includes cab ergonomics, visibility and vibration analysis.
- References to the following standards:

❖ ***Ergonomics of the cab:***

- ISO 2860:1992 - Earth moving machinery – minimum access dimensions. (Under review)
- ISO 3411:2007 - Earth moving machinery – Human physical dimensions of operators and minimum operators space envelope. (Current)
- ISO 6682:1986/Amd1:1989 - Earth moving machinery – Zones of comfort and reach for controls. (Current)
- Cab design checklist: Adapted from:
- researchspace.csir.co.za/dspace/bitstream/10204/.../Schutte_2007.pdf

❖ ***Ergonomics of the operator's seat:***

- ISO 11112:1995/SANS 11112:2013 - Earth moving machinery – Operators seat dimensions and requirements. (Current)

❖ ***Visibility field:***

- ISO 5006:2017 - Earth moving machinery – Operator field of view. (Current)

❖ ***Vibration:***

- Qualitative and Quantitative assessment.
- ISO 2631-1:1997 - Evaluation of human exposure to whole-body vibration - Part 1: General requirements. (Current)
- Total exposure limits: 2002/44/EC

Ergonomics Programme

- Compile and assist with the development of an Ergonomics Programme for Transnet Engineering.
- Compile and assist with the development of an Ergonomics Standard Operating Procedure.
- The Ergonomics Programme to incorporate the anticipating, identifying, analysing and controlling of ergonomic risks which should include but not be limited to, ergonomics hazards identification and risk assessment, risk controls, information and training, monitoring, evaluation and medical surveillance.
- Design documents (e.g., checklists, inspection & monitoring lists, training manuals, medical surveillance documents, etc.) required for an effective Ergonomics Programme.

Fatigue Risk Management Assessment Tools

- Conduct Fatigue risk assessments for TE operational businesses as per Rail Safety Regulator Fatigue Risk assessment standard and other applicable legal requirements.
- Identify fatigue risks for the specified areas, evaluate the risks, identify implementable control measures that are specific to risk identified and recommendations regarding findings and non-conformances as part of her/his report.

- Consider the working environment and existing control and give recommendations which are applicable to reduce the exposure level.

Fatigue Risk Management Assessment Process

- Assist and provide guidance on the Fatigue Risk Management System – Systematic approach for identification, assessment, management and mitigation of the risks of fatigue.
- Should include Hazard Identification involving identifying the tasks, work schedules, work practices and individuals that may pose significant fatigue risks.
- Evaluation process should include identifying safety performance indicators to check the extent to which the control measures can be implemented and develop Fatigue Risk Management Plan (FRMP) as part of the control measures.
- Control measures should manage all various causes of fatigue using a range of independent layers of control.
- The various controls and strategies should be brought together in the form of a fatigue risk management plan (FRMP).
- The process of evaluating the extent of the fatigue risk arising from exposure to the hazard and determining the tolerability of that risk considering existing controls, and whether the risk can be reduced by introducing new controls.
- Assist with the development of a Fatigue Risk Management Procedure for Transnet Engineering.

5.1.3.3 Scope of Work

- TE requires services of a competent ergonomist and fatigue risk assessment service provider that will conduct an Ergonomic Risk Assessment and Fatigue Risk Assessment for activities which include shift work and overtime, mentally demanding and physically demanding activities.
- The scope involves a certified ergonomist to conduct an ergonomic risk assessment on all processes, activities and equipment. Quantify the ergonomic risks and provide management a priority list to identify high risk tasks.
- Type of Ergonomics Risk Assessments that need to be conducted:
  Industrial/Operational, Vehicle and Office Ergonomics Risk Assessment.
- Comprehensive survey and risk identification of all tasks and activities in all work areas included but not limited to the Functional Area/Business/Depot/Sub-depot, **Annexure A**.
- **Note**: The following work areas included in **Annexure A** must be **excluded from Ergonomics:**

  - ❑ Koedoespoort Manufacturing Plant, Loco MOP
  - ❑ Koedoespoort Manufacturing Plant, Fabrication Engineering Components (RSE)
  - ❑ Maintenance and Services, North East Corridor, Komatipoort Wagons (Out Service)

- ❑ Maintenance and Services, North East Corridor, Komatipoort Wagons (In Service)
- ❑ Maintenance and Services, North East Corridor, Polokwane Locomotive (Out Service)
- ❑ Maintenance and Services, North East Corridor, Musina Locomotive (In- Service)

- The following reports must be provided separately per business per depot per subdepot: Ergonomics Risk Assessment Reports, Vibration Survey Reports, Fatigue Risk Assessment Reports, Ergonomics Programme and Fatigue Risk Assessment Plan. Recommended action plans should be stipulated on each report.

5.1.3 Environmental Air Quality Survey or Assessment

- Monitoring points shall be determined by the monitoring specialists or service provider however it is recommended that focus on areas of significant air dispersion be prioritised i.e. stacks or largest opening into the atmospheres where stacks are not available.
- All air monitoring points shall be undertaken at the point of emission escape into the atmosphere, where numerous points of escape are available, the point closest to the source of discharge shall take preference as it is assumed more emission will escape from that point.

5.1.4 Biological Agent

An AIA shall:-

- Identify sources of hazardous biological agents.
- Take swabs and analyze to test possible bacterial growth.
- Provide practical recommendations and appropriate control measures, taking into consideration the hierarchy of controls.
- Must be inline with the Occupational Health and Safety Act, 1993 (Act 85 of 1993), Regulations for Hazardous Biological Agents, 2022.
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6. DELIVERABLES

A comprehensive Monitoring reports with clear recommendations as per National Business and per the Plant and three Corridors. Final documents must be submitted in hard copies and also in an electronic format. Reports must be provided separately per business per depot per subdepot. Feedback session summary of all the areas to be done.

7. WORK SCHEDULE:

The Respondents must submit with their proposals a detailed schedule of the work to be undertaken as this will form part of the adjudication criteria. The schedule should also indicate time frames and be accompanied by a detailed budget breakdown per Plant and the three Corridors. The expected delivery date will be discussed with a successful tenderer.

8. GENERAL REQUIREMENTS:

The Respondents must:

- Submittion takes place on the Transnet eTender portal.
- **Clearly set out the proposed methodology for achieving the required objectives**. The detailed schedule/programme to be submitted with the proposal must include but not be limited to e.g.
    - Specific deliverable
    - key milestones;
    - inter-relationships between activities,
    - time for the completion of the entire project, etc

- **Indicate the probable cost and time elements of their proposal.** The costs should be broken down per the Plant and three Corridors and businesses and also costs for travel, accommodation, sampling test, number and type of samples, material and analysis.

- PLEASE Take into Consideration and indicate the Type of Analysis as required, Lab Analysis and Weighing. Refer to example (Below).

Substance	Saldanha	Bellville	Total	Type
VOC	4	6	10	Lab Analysis
Alcohols	1	0	1	Lab Analysis
Diesel Fumes	4	5	9	Lab Analysis
NO_2	1	0	1	Lab Analysis
Resp Dust/Alpha Quarts	21	23	44	Weighing/Lab Analysis
Inhal Dust/Total/PNOC	17	10	27	Weighing
Metal Fumes	2	8	10	Weighing/Lab Analysis
Lead	1	0	1	Weighing/Lab Analysis
Zink	8	0	8	Weighing/Lab Analysis
Copper Sulphate	8	0	8	Weighing/Lab Analysis
Zirkon	8	0	8	Weighing/Lab Analysis
Iron Ore	8	0	8	Weighing/Lab Analysis
Lime	8	8	16	Weighing/Lab Analysis
Gypsum	8	8	16	Weighing/Lab Analysis
Manganese	8	0	8	Weighing/Lab Analysis
Metal Dust	4	6	10	Weighing/Lab Analysis
Silica	3	0	3	Weighing
Coal	0	8	8	Weighing
Soda Ash	0	8	8	Weighing
Grain Dust	0	8	8	Weighing

- Conduct the survey as per legislation and standard. Follow Best Practice.
- Submit an extensive company profile, providing details of similar or associated work done;
- Demonstrate a proven track record Curricula Vitae of all human resources to be deployed in the project; Show clear capacity for delivering adequate services;
- Ergonomics Risk Assessment – Proof of competency: Registration Certificate (Certification with the Professional Affairs Board of the Ergonomics Society of South Africa).
- Ergonomics Risk Assessment – Proof of competency: Registration Certificate (Certified Professional Ergonomist [CPE] linked to the International Ergonomic Association).
- Ergonomics Risk Assessment – Proof of competency: Certificate (master's degree in Ergonomics [Minimum Qualification]).
- Specialise in fatigue risk management programmes.

- Be able to commence work at short notice if successful.
- **On-the-job training for TE Facilities and Infrastructure SHEQ employees.** Allow TE Facilities and Infrastructure SHEQ employees to participate during the entire occupational hygiene process, specifically drawing their attention to critical observations made during surveys.
- Demonstrate to TE Facilities and Infrastructure SHEQ employees how the pre- and post-measuring activities are performed.
- Allow TE Facilities and Infrastructure SHEQ employees to perform pre- and post-measuring activities.
- Allow TE Facilities and Infrastructure SHEQ employees to explain to employees what is being done (under supervision).
- Allow TE Facilities and Infrastructure SHEQ employees to record all the necessary data on field sheets.
- All the activities must not affect or compromise the occupational hygiene services provided by the Service Provider.
- Transnet Engineering promotes Black Economic Empowerment (BEE) and details thereof with Regards to this assignment should be provided. Prospective service providers should supply BBBEE certificate with this proposal.
- Prospective Service Providers will complete all the necessary documents in full and must indicate whether their offer complies with each item of the specification.
- Should there be insufficient space for furnishing full details, Service Providers shall provide the additional details in their covering letter. The additional details shall be numbered in accordance with the applicable clause specified in the specification.
- Prospective Service Providers are considered as experts in their field, they are obliged to identify any shortcomings, such as omissions or sub-standard requirements, to the completeness of this specification. These must be brought to the attention of Transnet Engineering at tendering stage with alternatives to address.
- Prospective Service Providers shall ensure that all reports and documents supplied are of good quality and comply with the specification.

9. ADJUDICATION PROCESS

Transnet Engineering reserves the right to:

- Adjudicate proposals in terms of Transnet procurement procedures;
- To approve sub-contractors or joint venture partners. If deemed necessary, a short presentation and or interview may be required from candidates, for which adequate notice will be given;
- To cancel this project at any time;
- To decide to call for a second round of specific and detailed submissions should it deem appropriate;
- Not accept any proposal in part or in full.

10. ACCEPTANCE OF PROPOSALS

Transnet Engineering does not bind itself to accept lowest cost proposal nor will it furnish any details or enter into any communication relating to the non-acceptance of any or all proposals.

11. AGREEMENT

A formal agreement will be concluded with the successful tenderer as soon as the procurement process has been completed.

12. PENALTIES

Penalties for the late completion of the work will be raised in accordance with Transnet Engineering's Service Agreement, which will be concluded with the successful tenderer.

Note: Refer to Attached **Annexure A** for Transnet Engineering Koedoespoort Plant and three Corridorss businesses to be included into this scope.

Compiled by:	**Approved by:**
Name: Gawie Venter	**Name:** Anne Motau
Designation: Safety Manager: Koedoespoort	**Designation:** Head: SHE - Manufacturing
Date: 2025/07/29	**Date:** 2025/07/30
Signature: _____	**Signature:** _____

ANNEXURE A

1. KOEDOESPOORT PLANT AND TWO CORRIDORS TOTAL COST = R_____

BUSINESSES IN THE MAIN PLANT - MANUFACTURING					
Plant and the Two Corridors	**Functional Area**	**Business / Depot / Sub-depot**	**Number of employees**	**Physical Address**	**Price**
Koedoespoort Manufacturing Plant	Transportation	Locomotive New Build CSR	129	Corner Lynette and Koedoespoort Roads, Koedoespoort, 0187	
		Locomotive New Build GE	35		
		Loco MOP	143		
		Coaches	94		
		Blue Train – Salvokop Depot	12		
	Fabrication	Engineering Components	181		
		Foundry	58		
	Modernisation	Propulsion Traction	126		
		Propulsion Engines	27		
		Traction Systems Electronics	68		
		Wheels & Bogies	112		
	Engineering	Product & Service Development	71		
	Facilities and Infrastructure (FIM)	ICT	3		
		Project Support Office	8		
		SHEQ	68		
		PEMM KDS	131		
		PEMM Diesel Depot	6		
		PEMM Nelspruit	4		
		PEMM Polokwane	7		
		PEMM Ermelo	1		
	People Management	People Management	13		

	Finance	Finance	18		
	Supply Management	Supply Management	29		
	Head Office	Kopanong Building	150		
	Head Office	Office of the CE	20		
	Faculty of Engineering and Pipelines	FoE&P	133		

WAGON MAINTENANCE DEPOTS – Coal North Corridor				
Plant and the three Corridors	**Business / Depot / Sub-depot**	**Number of employees**	**Physical Address**	**Price**
Coal North Corridor	**Welgedacht Out** Service	Total of employees = 96	Boundary Road 1 Welgedacht	
	Welgedacht **In** Service (Yard)		Boundary Road 1 Welgedacht	
	Springs **In** Service (Yard)			
	Saaiwater **In** Service (Yard)			
	Van Dyks Drift **In** Service (Yard)			
	Trichardt In Service (Yard)			
	Trichardt Out Service			
	Volksrust (traveling to Majuba)			
	Rustenburg In Service			
	Thabazimbi In Service			
	Lephalale In Service			
	Ermelo Out Service	Total of employees = 70	Off Amersfoort Road,Locomotive Depot, Ermelo	
	Ermelo In Service GFB Yard			
	Ermelo In Service Coal Export Yard			
	Piet Retief			
	Pyramid South In Service	30		
	LOCOMOTIVES MAINTENANCE DEPOTS – Coal North Corridor			
	Ermelo Out Service (Both Eletrical and Diesel Depot)	Total of employees = 152	OffAmersfoort Road,Locomotive Depot,Ermelo,2350	
	Ermelo In Service (Both Eletrical and Diesel Depot)	Total of employees = 122		
	Middelburg In Service (Both Eletrical and Diesel Depot)			
	Pyramid South Out Service (Both Eletrical and Diesel Depot)	Total of employees = 64	Lavender Road, Old Warmbath Road	
	Thabazimbi Out Service Service (Both Eletrical and Diesel Depot)		TE Station Road Thabazimbi	
	Rustenburg (Diesel Depot)		TE Sandelin Street Rustenburg	

WAGONS MAINTENANCE DEPOTS –North East Corridor				
North East Corridor	**Witbank** Out Service	Total of employees = 47	Nzasm Street Witbank	
	Witbank In Service (Yard) travel to Clewer, Highveld Steel and other sidings		Main Street	
	Belfast In Service (Yard)		Belfast Station	
	Middelburg In Service (Yard)		Uitkyk Station, Middelburg	
	Lydenburg (Yard)		Lydenburg Station	
	Steelpoort In Service (Yard)		Close to Thubatse Coal Mine	
	Komatipoort Out Service -some employees travelling to Maputo and Swaziland	Total of employees = 63	Bonkenburg Street, Komatipoort, Mpumalanga	
	Komatipoort In Service (Yard)		Hutton Street, Komatipoort (Next to Komatipoort Station)	
	Nelspruit In Service (Yard)		Next to Nelspruit Station Waterval Boven Station	
	Waterval Boven In Service (Yard)		Hutton Street, Komatipoort (Next to Komatipoort Station)	
	Phalaborwa In Service (Yard)		Phalaborwa Station Lavender Road, Old Warmbath Road	
	LOCOMOTIVE MAINTENANCE DEPOTS –North East Corridor			
	Nelspruit Out Service (Both Diesel and Electrical) and Clinic	Total of employees = 97	Loko street, Vintonia Ext 2, Nelspruit, 1200 GPS Co-ordinates: S25'27.46 E030'58.076	
	Komatipoort Out Service (Only Diesel)		Bonkenburg Street, Komatipoort	
	Komatipoort In Service (Both Diesel and Electrical)			
	Phalaborwa In Service		Foskor road,	

	(Only Diesel)		Phalaborwa (Station), Limpopo	
	Witbank Out Service (Both Diesel and Electrical)		Cnr Langerman & main Stret, Wibank,1035	
	Witbank In Service (Both Diesel and Electrical)			
	Lydenburg Out Service (Both Diesel and Electrical)		Roussouw Street,Lydenburg, Mpumalanga	
	Polokwane Out Service (Diesel Only)	Total of employees = 34	Witklip street, Ladanna,Polokwane	
	Tzaneen In Service (Diesel Only)			
	Mussina In Service (Diesel Only)			

ANNEXURE B
Asbestos Monitoring

Site/depot	**Area(Ha)**	**Medium**	**Scope**	**Price**
KDS site 1	9.31	Open Land	Monitoring	R
KDS site 2	1.25	Open Land	Monitoring	R
KDS site 3	1.17	Open Land	Monitoring	R
KDS site 4	4.75	Open Land	Monitoring	R
KDS site 5	4.75	Open Land	Monitoring	R
KDS coaches	Approxamitely 10 Coaches	Old coaches/cabus	Monitoring	R
Total				**R**

TOTAL COST (Annex A +Annex B)= R_____

ANNEXURE C

Occupational Hygiene Programme (TRN-IMS-GRP-TMP-017.1)

OCCUPATIONAL HYGIENE PROGRAMME (TRN-IMS-GRP-TMP-017.1)

Province	Operational Division (OD)	Business Unit	Corridor/Plant	Functional Area	Operational Area/ Depot	Sub Depot	OD Contact Person	AIA Representative	Survey Type	Frequency		Previous Survey		New Survey		Next Review Date
										Type	Duration	Date	Report Number	Date	Report Number	

Survey		Type		Duration	Province		Operational Division (OD)	
Hazardous Chemical Agents	HCA	Statutory	S	0	Gauteng	G	Transnet Freight Rail	TFR
Asbestos	A	Ad-Hoc	AH	12	Mpumalanga	MP	Transnet Engineering	TE
Noise	N			24	Limpopo	L	Transnet Property	TP
Occupational Hygiene Risk Asse	OHRA			60	Free State	FS	Transnet Pipelines	TPL
Ergonomics	ERG			72	Kwa-Zulu Natal	KZN	Transnet Port Terminals	TPT
Illumination	ILL			96	North West	NW	Transnet National Ports Authority	TNPA
Indoor Air Quality	IAQ				Eastern Cape	EC	Transnet Corporate Centre	TCC
Ventilation	VEN				Northern Cape	NC		
Hazardous Biological Agents	HBA				Western Cape	WC		
Heat Stress	H							
Cold Stress	C							
Radiation	RAD							
Vibration	VIB							
Lead	L							

Bidder Specification sign off

____

Signature

Company name:

Position:

Date:

NB: Signing off this specification confirms that the bidder agrees with the requirements thereof.