

## C3: Scope of Work: Service Information

### Definitions:

In this Scope of Work:-

- 1) **“access-delayed time”** means the time taken from arrival on the *Site / Affected Property* by the *Contractor*, his sub-contractor or specialist-contractor and requesting access to the *Site / Affected Property* from the *Employer* or his Tenant until the time access is given.
- 2) **“ad hoc works”** also known as **“minor new works”** means any repair (s), replacement (s) of component (s) or additions/alterations of the installations other than inspection, repairs, servicing, or replacement listed in this contract.
- 3) **“affected property”** shall mean the commercial premises / sites that includes building within Mpumalanga province around the Employer’s office or any other building / structure / premises within the geographical area applicable to this Contract.
- 4) **“break-down”** means a specific type of failure, where an item of an installation or equipment is completely unable to function.
- 5) **“call-out”** means an installation or related failure, requiring the Contractor to visit the Site / Affected Property outside of the scheduled maintenance period.
- 6) **“chargeable items”** mean the cost of replacement components or repairs required to maintain a reliable and safe Installation (excluding consumable items) and which are not covered under this Contract.
- 7) **“Contractor”** means the successful tenderer that has been awarded the Service for the period stipulated
- 8)
- 9) **“corrective maintenance’ (CM)”** means any maintenance activity which is required to correct a failure that has occurred or is in the process of occurring. This activity may consist of repair, restoration or replacement of components.
- 10) **“documentation”** means and includes any drawings, diagrams, calculations, designs and documents which are to be supplied to the Employer by the Contractor in terms of this Contract, together with any modifications to such documents as may from time to time be approved in writing by the Employer.
- 11) **“down-time”** the time that an item of equipment is out of service, as a result of equipment failure. The time that an item of equipment is available, but not utilized is generally not included in the calculation of downtime.
- 12) **“drawings / diagrams”** means drawings / diagrams referred to in the Specification and any modification of such drawings / diagrams approved in writing by the Employer and such other drawings / diagrams as from time to time may be furnished or approved in writing by the Employer.
- 13) **“emergency maintenance (EM)”** means maintenance work carried out in order to avert an imminent risk of human injury or death, human suffering, serious business disruption that could not have been reasonably foreseen, interruption of essential services, suffering damage to property or financial loss, suffering or death of livestock or other animals and serious environmental damage or degradation.
- 14) **“installation”** means the affected property water treatment and all related equipment on / in the Site / Affected Property.

- 15) **“licences”** means the licences used / issued or deemed to be issued to the Service Provider from time to time in terms of applicable Act(s).
- 16) **“maintenance”** or **“check”** shall mean the efficient and effective examination, inspection, recording, deduction or calculation, service, repair and or replacement of components and parts of a unit / system / installation so that the unit / system / installation complies with the manufacturers, design and commissioning operational specifications and statutory / Employer requirements. This includes the cleaning, removal of components and waste, correct adjustment and setting, tightening, testing, fixing, refill, lubrication, balancing, rust prevention and touch up paint of the unit / system / installation.
- 17) **“maintenance plan”** will bear the same meaning as Contractors Plan.
- 18) **“non-inclusive contract”** will mean that Plant and Equipment (material) is excluded except that refer to in equipment of this scope of work below. The cost and quantity of spares and material is uncertain and therefore excluded.
- 19) **“normal working-hours”** means office hours, from 07h30 to 16h00 Monday to Friday excluding Public Holidays in South Africa.
- 20) **“person”** includes, a natural person, a partnership, a business trust, a foundation, any company or close corporation incorporated or registered in terms of any law, and other body of persons corporate or unincorporated.
- 21) **“preventative maintenance (PM)”** means the maintenance carried out at pre-determined intervals or corresponding to criteria and intended to reduce the probability of failure or the performance degradation of an Installation or equipment.
- 22) **“property”** means any movable, immovable or intellectual property or any right to such property.
- 23) **“repair”** means put into good condition after damage or wear, any component that forms part of the Installation or Equipment.
- 24) **“scheduled maintenance (SM)”** means the systematic inspection, cleaning, making of minor adjustments, testing, calibrating, measuring and recording, replacing of minor parts, and any other similar measures necessary to prevent deterioration, to assure reliability and availability.
- 25) **“scope of work”** will bear the same meaning as Service Information.
- 26) **“sensitive security area”** refers to computer centres, personnel records, cashiers, archives, top management office areas and all other areas indicated to the Contractor.
- 27) **“services”** means the work, functions, tasks, services, and / or goods to be performed, rendered and or supplied by the Contractor, including any subsequent variations or changes to such work, functions, tasks, services, or goods as may be agreed in terms of this Scope of Work.
- 28) **“service manager”** – means the building- / centre- / lodge- / hostel manager or representative of the Employer responsible for the management of a specific Site / Affected Property
- 29) **“shut-down maintenance”** means maintenance that can only be performed while equipment is shut down (equipment is turned off).
- 30) **“site”** means any site, place regardless of whether it is or form part of any temporary or permanent structure, building which is the property of, or is occupied or used by, or is under the control and / or management of the Employer.
- 31) **“specifications”** the document to which is referred in this Scope of Work, in which the method and standards applicable to the rendering of the Service, as well as the materials to be provided and used, are described.

- 32) **“supervisor”** means a competent person appointed by the Contractor to be on-site and responsible for the management of the Contractor’s staff and Service provided in terms of this Scope of Work.
- 33) **“technical information”** means and includes all information provided in the Specification, together with all drawings, diagrams, calculations, designs, Specification and other pertinent documents as may from time to time be furnished in writing by the Employer to the Contractor in connection with the Contractor’s Services.
- 34) **“tenant”** means any Person (including BU’s of Transnet other than Transnet Property) with his staff, client’s and service providers with whom the Employer has entered into a lease agreement for the whole or a portion of the Site / Affected Property.
- 35) **“tenant installation”** means all services, equipment and or installations paid for and owned by Other and not specifically describe as part of this Contract.
- 36) **“Transnet Property”** means – a division of Transnet (SOC) LTD, a State Owned Company duly incorporated in accordance with the laws of South Africa with registration number 1990/000900/30, duly represented herein by the Group Executive Officer and or his duly appointed delegate, who warrants that he is duly authorised hereto;
- 37) **“South African National Standards” (SANS)** refers to specifications and procedures for inspection, test, and examination for machinery in use.
- 38) Expressions defined in this Scope of Work shall bear the same meanings in the specifications, schedule or annexure to this Scope of Work which do not themselves contain their own definitions;
- 39) Schedules and/or annexures to this Scope of Work shall be deemed to be incorporated into and form part of this Scope of Work and as such each reference herein to “the Scope of Work” shall be deemed to include a reference to all such schedules and/or annexures.

## 1. Employer’s objectives

- 1.1. The *Employer’s* objective is to enter into a term service contract with the *Contractor* to provide preventative, corrective and emergency maintenance plus minor new works for electrical, HVAC, general building and plumbing services plus minor new works for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis, for building/property/site owned, managed or leased by the Transnet Property within for a period of 24 months to ensure compliance with legislative requirements relating to the Occupational Health and Safety Act, 1993, (Act No 85 of 1993).

## 2. Executive overview

- 2.1. The Employer is desirous that its Employees and Tenants receive the Services to ensure that the improvements, installation(s) and equipment in or on the *Site / Affected Property* will comply with all relevant regulations and standards through the conclusion of this Term Service Contract with the Contractor.
- 2.2. This Service covers the preventative-, corrective- and emergency maintenance, replacement of faulty / blocked components / equipment, all in situ and on a planned basis including minor new works to the Electrical Lights and Power installation, Electrical substations, storm water/installation, building infrastructure, roofs, sewer network/installation, etc. on / in the Site / Affected Property as described in the applicable Activity Schedules annexure’s and any other documents attached to this Scope of Work, or any other work arising out of or incidental to the above or required of the Contractor for the proper completion of the Service in accordance to the true meaning and intent of this Service Specification.
- 2.3. Comprehensive preventative, corrective and emergency maintenance shall be provided to the commercial and office areas building/precincts.

- 2.4. Maintenance to the residential properties shall be provided for on Task Order/"As and when basis".
- 2.5. The Service shall be executed in accordance with the latest edition / amendment of the following inter alia:
- 2.5.1. The Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and the regulations promulgated in terms of the Act.
  - 2.5.2. Electrical Wiring Regulations SANS 10142-1 & 2
  - 2.5.3. National Building Regulations SANS 10400.
  - 2.5.4. The Regulations and By-laws of the Local Authority.
  - 2.5.5. The local Fire Department Regulations.
  - 2.5.6. Basic Conditions of Employment Act 75 of 1997 (latest edition / amendment)
  - 2.5.7. Hazardous substance act 15 of 1973 (latest edition / amendment)
  - 2.5.8. National water act 36 of 1998
  - 2.5.9. The Occupational Health and Safety Act, 1993
  - 2.5.10. The Construction Industry Development Board Act No. 38 of 2000 and amendments
  - 2.5.11. All relevant Laws, Legislation and Regulations applicable to the works, which will include the requirements of the Employer.
- 2.6. The above documentation shall be always kept on site by the Contractor, inclusive of the Contractor's Safety file.

### **3. Description of the service**

- 3.1. The Service shall include:
- 3.1.1. All planned/scheduled maintenance, these shall include the management, maintenance and repairing/replacement of all equipment covered within this Scope of work including but not limited to:
    - 3.1.1.1. Maintenance of a complete domestic water installation/network and supply including storage tanks, valves, pumps, hydro-boils and heat-pumps.
    - 3.1.1.2. Clean storm / rainwater installation / network including full-bores, sumps, pits (up to 1 meter deep), and storm water pipes of up to 250mm in diameter between sumps.
    - 3.1.1.3. Clean storm water drains and catch pits/sumps over 1 meter to 2 meters deep and storm water pipes over 250mm up to 500mm diameter between sumps.
    - 3.1.1.4. Service gate valves of water mains up to 250mm, gland packings to ensure easy turning when required to shut off water supply.
    - 3.1.1.5. Maintenance of complete sewer and waste water installation / network including sumps, valves, oil / grease traps, pumps etc.

- 3.1.1.6. Maintenance of complete hot water installation / network and supply including storage tanks, lagging, valves and pumps.
- 3.1.1.7. Refilling of JoJo tanks and water supply of 5 litre bottled water
- 3.1.1.8. Maintenance of complete plumbing installation/reticulation.
- 3.1.1.9. Maintenance of structure and roofs, cleaning of asbestos/galvanised gutter up to 300mm wide including downpipes.
- 3.1.1.10. Maintenance of exterior and interior building fabrics; roads, paving, minor brick works, partitioning, tiling, ceilings, flooring, Ironmongery, glazing, painting etc.
- 3.1.1.11. Servicing of ablution facilities, including but not limited to inspecting/servicing/replacing of flush masters, urinals, taps, water closets set, water leaks, clean service ducts, toilet doors including locking mechanism, worn-out 100 mm butt hinges type etc.
- 3.1.1.12. Servicing of eyebolts for safe working condition for assailers to allow for the cleaning of the windows.
- 3.1.1.13. Servicing and repairs of steel roller shutter doors size up to 5 meters high and 6 meters wide.
- 3.1.1.14. Remove and replace damaged steel palisade fence panels including cutting of rails to size, fitting brackets to posts and bolting of pales to rails with bolts & nuts.
- 3.1.1.15. General repairs (e.g. carpentry & joinery),
- 3.1.1.16. Painting of traffic lines, parking bay structural steels, roof timbers, roofs, ceilings, walls, doorframes, moulds, rain water goods, etc.
- 3.1.1.17. Applying 1 coat of traffic paint to the following direction arrows up to 4 meters long: straight only, right only, left only, curved right & curved left.
- 3.1.1.18. Painting of numerals and letters up to 300mm highx40mm stroke on rough tarmac or concrete surfaces including setting out, marking out, cleaning and barricading.
- 3.1.1.19. Replacing loose/damaged road kerbing, remove damage concrete footing, recast concrete and replace back in position, align and grout joints.
- 3.1.1.20. Replacement of faulty / worn out components of pumps and adjustments, all in situ and on a planned basis or any other work arising out of or incidental to the above or required of the Contractor for the proper completion of the Service in accordance to the true meaning and intent of this Contract
- 3.1.1.21. Annual inspection, servicing, emptying, cleaning, and maintenance of sewer pumps
- 3.1.1.22. Annual inspection of pump control panel and associated parts to ensure optimal operation.
- 3.1.1.23. Servicing of non-return valves.
- 3.1.1.24. Quarterly Servicing of the boom gates
- 3.1.1.25. Unblocking of all types of drains using jet vacuuming equipment.
- 3.1.1.26. Emergency Call-Out service.

- 3.1.1.27. The cleaning, removal of components and waste deposits, correct adjustment and setting, tightening, testing, fixing, refill, lubrication, balancing, rust prevention and touch up paint of the unit / system / installation.
- 3.1.1.28. Furnishing a completed activity schedule following each inspection and / or emergency call, incorporating a description of the malfunction and action taken.
- 3.1.1.29. Complete Heating Ventilation and Air Conditioning (HVAC) installation,
- 3.1.1.30. Maintenance for HVAC shall be provided on a planned (As per Activity Schedule attached in Annexure 2.3 of this Scope of Work), ad-hoc and emergency call outs only,
- 3.1.1.31. Repairing all interconnecting pipework if required.
- 3.1.1.32. Adjusting, maintaining, and repairing all supply and return air grilles and diffusers, fire dampers, opposed blade dampers and damper operators.
- 3.1.1.33. Repairing all ductwork, sound attenuators and supporting equipment.
- 3.1.1.34. Adjusting, maintaining, repairing and replacing fuses, circuit breakers, isolators, starter switches, pilot lights, amp and volt meters and electric wiring from main incoming isolator.
- 3.1.1.35. Maintenance and service of electrical kiosks.
- 3.1.1.36. Maintenance and service of distribution boards.
- 3.1.1.37. Maintain all plant / transformer rooms and or service ducts in a clean, neat and tidy condition and remove all debris and surplus materials from the Site / Affected Property.
- 3.1.1.38. Maintenance and service on lighting and extra low voltage lighting installation.
- 3.1.1.39. Maintenance and service of electrical control box/panels.
- 3.1.1.40. Maintenance and service of substation equipment.
- 3.1.1.41. Annual maintenance and service report of substation equipment
- 3.1.1.42. Annual testing of medium and high voltage substation equipment.
- 3.1.1.43. Testing of medium and high voltage transformers
- 3.1.1.44. Maintenance and service on power skirting installation
- 3.1.1.45. Monthly, Quarterly and Annual maintenance and service of UPS equipment.
- 3.1.1.46. Monthly maintenance and service report of standby generator set.
- 3.1.1.47. The inspection of Electrical reticulation, Distribution boards, Cable ducts, trenches and other wire ways, Lighting, and power points
- 3.1.1.48. Ensured that live electrical equipment is inaccessible, that electric circuits are protected and that lighting and power systems are operational.
- 3.1.1.49. Conduct the condition assessment of all the Installation and provide a comprehensive report to the Employer with a detailed and fully motivated quotation for work requiring immediate attention to bring the Installation into a maintainable condition.

- 3.1.1.49.1. This estimate shall be submitted to the Employer for his consideration and decision as to the necessity for the work.
- 3.1.1.49.2. Failure to comply with this requirement after having made his first visit to the Affected Site shall imply that the Contractor accepts the Installation as being in sound working order, a satisfactory state of repair and compliant with all applicable statutory requirements at the commencement of his Contract.
- 3.1.1.49.3. The estimate must be received within three (3) months of the starting date of the Contract.
- 3.1.1.50. Examining thoroughly validity of the existing Certificate of Compliance (CoC). Certificates will be checked by each newly appointed Contractor to ensure compliance of the certificates.
  - 3.1.1.50.1. If the installation / certificate has any defects the Contractor shall compile a defect report, which shall be handed to the Service Manager. If the Employer agrees with the defect / need for a certificate a Task Order will be issued and the Contractor will repair the defects and issue a certificate of compliance.
  - 3.1.1.50.2. If there are no compliance certificates available for an existing Installation on a specific Affected Property, the Contractor shall compile a defect report that will be handed to the Service Manager for his direction.
  - 3.1.1.50.3. In the event of amendments to the existing installation by the Contractor, the Contractor shall provide the Employer with compliance certificates at his costs for all alterations or extensions that the Contractor undertakes once work has been completed and before being commissioned.
  - 3.1.1.50.4. The certificate shall not exclude any part of the installation but shall cover the installation.
- 3.1.1.51. Compliance of the Installation shall include but not be limited to the following:
  - 3.1.1.51.1. **Sockets and light circuits**
    - a. All plug circuits shall be appropriately labelled at both the source (DB) and outlet ends.
    - b. All new plug circuits shall not have more than 8 plugs per circuit. Where an existing plug circuit already has 8 or more plugs no additional plugs will be allowed on the same circuit.
    - c. Earth leakage tests shall be done on plugs to ensure that they are correctly connected and that there are no signs of a floating earth current.
    - d. Replacement of plugs should be of the same type and rating.
    - e. All new light circuits shall not have more than 14 lights per circuit. Where an existing light circuit already has 14 or more lights no additional lights will be allowed on the same circuit.
    - f. All light circuits shall be labelled and depicted on drawings indicating the circuits. A copy of the drawings shall be handed to the Employer.
    - g. All lamps and ancillary equipment that are replaced should be replaced with equipment of the correct rating, make, type, model and wattage. All spent lamps shall be disposed of in accordance with statutory requirements.

- h. All plugs that are intended for luminaires only, shall not exceed a rating of 6 amps. These plugs shall only supply one luminaire per plug.

**3.1.1.51.2. Distribution boards / control panel and boxes**

- a. Shall indicate where they are being fed from and the KA rating.
- b. Shall have a danger notice fixed to them instructing if leakage current or inadvertent contact should occur the main switch should be switched off.
- c. The equipment mounted into it shall be so positioned to allow any conductor to be removed without any obstruction.
- d. All unoccupied spaces shall be fitted with blank covers.
- e. Permanent labelling shall identify both incoming and outgoing circuits.
- f. Series connected cascaded systems shall have a notice fixed to them indicating that this is a cascaded system and unless otherwise recommended shall not be fitted with any other breaker, except for those identical in the system. In the case that the identical circuit breaker is not available, the manufacturer of the replacement circuit breaker shall confirm in writing that the circuit breaker can be used in this cascading system. This shall also be approved by the Employer's competent technical Person, in writing, before installation.

**3.1.1.51.3. Earth leakage protection**

- a. Earth leakage devices shall disconnect both phase and neutral.
- b. Earth leakage units that are not provided with over current protection shall be fully rated short circuit protective device.

**3.1.1.51.4. Earthing**

- a. Each earth conductor connected to the main earthing terminal shall be able to disconnect individually.
- b. The secondary winding of the transformer shall also be earthed.
- c. Earth continuity conductors should consist of compatible conductors.
- d. If the earth continuity conductor forms part of a flexible cable it shall be the same size as the largest phase conductor.
- e. Connections of earth continuity conductors shall not rely on twisting of the conductor or the strands of the conductor but be crimp-ferruled, lugged or soldered.
- f. Earth continuity conductor shall not be used to carry any currents other than fault current.

**3.1.1.51.5. Bonding**

- a. The bonding conductor shall at least be of an area equal to 2.5mm<sup>2</sup> or more.
- b. All metallic roofs, downpipes, gutters, hot and cold-water pipes and antennas should be bonded, and the earth continuity path shall not exceed 0.2  $\Omega$  (ohms).



**3.1.1.51.6. Extra low voltage lighting**

- a. Rated output current of safety transformer used for low voltage lighting should not exceed 25 A (amps).
- b. When installing low voltage supplies the length of the conductor should be considered to accommodate the voltage drop that will occur. The conductors used shall have a steady current rating to accommodate the high currents associated with low voltage lights.
- c. The conductor size of low voltage supply shall not be less than 1,5mm<sup>2</sup>.
- d. The sum of current ratings of the secondary circuits should not exceed 90% of the transformer's rating.

**3.1.1.52. Provision of an inventory list to the Service Manager.**

- 3.1.1.52.1. If there is no inventory list available for an existing Installation on a specific Affected Property, the Contractor shall compile the inventory list and hand it to the Service Manager.
- 3.1.1.52.2. Where there is existing inventory list, there Contractor shall check the completeness and or correctness to update this information.
- 3.1.1.52.3. The responsibility for accuracy of the text and quantities of the above documents remains with the Contractor who updates the documents. The Contractor will provide the Employer on a monthly basis with any changes to these documents.

**3.1.1.53. Check correctness and or relevance of all Activity Schedules and where needed provide the Employer with the proposed amendments.**

- 3.1.1.53.1. The Contractor shall use these set of Activity Schedules per Site as directed that will be neatly bound to serve as an Installation Logbook for the Affected Property.
- 3.1.1.53.2. Checks / maintenance / inspection / tests etc. will also include those specified by the supplier or manufacturer in the components of the Installation. The Contractor shall be responsible to incorporate these in the applicable Planned Maintenance list.
- 3.1.1.53.3. The Contractor shall maintain the Installation logbooks / bound activity schedules on the Affected Property. Upon completion of each service, repair or call out; he shall enter remarks, date and sign in the logbook. Failing to update the logbook will cause the Installation to be seen as not having been serviced. Refer to Contract Data (Part one) Option X17 (Performance Index Table).
- 3.1.1.53.4. Planning of all normal services must ensure that there will be minimal disruption to the Installation.

**3.1.2. The Contractor shall at all times upon arrival on the Affected Property for each inspection / service or call-out, report to the Service Manager in order to ascertain the reason for the call-out, and / or to obtain information with regard to any problems with the Service and or Installation on the Affected Property.**

- 3.1.2.1. Failing to report to the Service Manager will cause the Installation to be seen as not being serviced and an amount will be deducted from the Contractor's monthly invoice. Refer to Contract Data (Part one) Option X17 (Service level table).

3.1.3. The Contractor shall assist the lift maintenance Contractor, where applicable, to thoroughly test the lift emergency power operation by simulating a power failure.

3.1.4. The process / procedures for working on medium and high voltage equipment shall be as follows:

3.1.4.1. Access to High voltage installations is not permitted unless accompanied by Transnet's competent person or person authorised to perform/access any work in the area.

3.1.4.2. All personnel or Subcontractors of the Contractor that have to perform duties on HT equipment must be trained and certified on medium and high voltage equipment. As per Transnet Training/Occupational Regulations on High Voltage Systems (ORHVS) or equivalent.

3.1.4.3. The Service Manager must be notified five (5) working days in advance of all work that must be performed on HT equipment to facilitate necessary arrangements and the issuing of permits, etc. Especially for substation that form part of the TFR ring feed.

3.1.5. Within two (2) months of notification of acceptance of the tender, the Contractor shall submit to the Employer for his approval and acceptance a Contractors Plan / Maintenance Plan.

3.1.5.1. No deviation from programmed dates will be allowed once agreed between the Employer and the Contractor. The first payment certificate will not be passed for payment until this program has been lodged and approved by the Employer.

3.1.5.2. Acceptance of the Contractors Plan / Maintenance Plan by the Employer shall not limit in any way the Contractor's responsibility to undertake whatever Service that is required during the Contract period to ensure safe operation of the Installations. The Plan shall be structured and implemented so as to ensure a maximum Installation operation and minimise downtime.

3.1.5.3. The Employer may order alterations, extras, additions to or omissions from the Services however it will not be of any force or effect unless reduced to writing. The Contractor shall carry out or give effect to such orders from the Employer. The rates for such work shall be agreed between the Contractor and the Employer, where rates are not quoted for in the Price List / Rates.

3.1.5.4. The contractor shall work in accordance with the compiled plan indicated above.

3.2. The Contractor shall:

3.2.1. Ensure that he/she has adequate equipment to carry-out the activities as specified in this scope of work. Employer shall not purchase/hire the equipment for the contractor to perform any activity included in this scope of work.

3.2.2. Provide the Employer with at least two digital photographs (before and after) of all equipment that has been repaired, replaced or on which any other work has been performed to prove that the Service has been provided in accordance with the schedule or as instructed by the Service Manager.

3.2.2.1. Such "before and after" photographs must be taken from the same vantage point and shall clearly illustrate the identity and condition of the installation before and after the service.

3.2.2.2. The minimum specification for the camera or other imaging device shall be that the images produced shall be sufficiently clear, defined and illuminated to enable the viewer to verify the identity and authenticity thereof. Low-light conditions are prevalent and an adequate source of illumination is required for photography.

- 3.2.2.3. These photographs are an essential part of the supporting documentation required in this contract
- 3.2.3. Touch-up paint on equipment to minimise deterioration and to keep in an acceptable and neat condition.
- 3.2.4. Complete the applicable Activity schedule following each inspection and / or emergency call, incorporating a description of the malfunction and action taken.
- 3.2.5. Attend management meetings (Clause 4.2) from time to time with the Employer in order to discuss any technical matters that require clarification or action and progress, as and when required by the Employer or his representative.
- 3.2.6. Forward copies of the log sheets, complaints received and service sheets on a monthly basis to the Employer or his representative.
- 3.2.7. Direct and monitor specialist subcontractors to ensure efficient and timely execution of the work in co-operation with the Service Manager.
- 3.2.8. All workspace, surfaces and items covered by this contract must appear clean and neat each day in accordance with the discretion of the Employer.
- 3.2.9. In the event of emergency repairs being required, the need for such repairs shall be reported immediately to the Employer or his representative for further instructions.
- 3.2.10. The results and dates of all tests shall be recorded in the site maintenance register. The Employer shall be informed at least thirty (30) days prior to the tests.
- 3.2.11. Be responsible for making arrangements with the Employer or his representative regarding the availability of the Installation for the purpose of servicing and / or repairs.
- 3.2.12. In the event of repairs or replacements becoming necessary, the Contractor shall submit an estimate of the cost of the work concerned to the Employer or his representative and there after shall proceed in accordance with the Employer's instructions.
- 3.2.12.1. In the event of **ad-hoc or minor new works**, submit a detailed estimate for such additional work to the Service Manager and obtain approval from the Employer before attending to the additional repairs or replacements.
- 3.2.12.2. **Ad-hock or minor new works** shall be identified and priced in terms of the Price List /Labour Rates (Part C2) for labour and mark-up of materials as per this Contract.
- 3.2.12.3. Where the Price (material or labour, or material and labour) is not stipulated in the Price List / Labour Rates the cost will be based on a fixed labour price as per Price List / Labour Rates (during normal working hours) plus material content based on proven cost (Supplier/s quotations with deductions for all discounts, rebates and taxes which can be recovered) plus an agreed percentage Fee. Refer to Price List / labour Rates (Part C2).
- 3.2.12.4. The Employer may order alterations, extras, additions to or omissions from the Service. However, these will not be of any force or effect unless reduced to writing. The Contractor shall carry out or give effect to such orders from the Employer. The rates for such work shall be agreed between the Contractor and Employer, where rates are not quoted for in the Price List / Labour Rates (Part C2).
- 3.2.13. Be responsible for overall management and supervision of the contracted personnel performing duties at the Premises in accordance with the provisions of this Contract.

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

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- 3.2.14. It is expected from the Contractor to ensure that all duties and tasks to be performed on site are adhered to.
- 3.2.15. Exercise adequate skill, care and diligence in the rendering of the services and the performance of its obligations to the Employer.
- 3.2.16. Inform the Employer in writing prior to carrying out of any modification to the existing Installation, even if this modification may benefit the Installation or if the cost of this modification is for the Contractor's account.
- 3.2.17. Inform the Employer of all improvements or revisions related to the Installation. These notifications shall take the form of technical notices or sales releases under a covering letter from the Contractor.
- 3.2.18. Approval given by the Employer shall not relieve the Contractor from responsibility for due performance of this Contract and adherence to Technical Information provided by the Employer.
- 3.2.19. Protect the Employer and Employer's employees against all losses, expenses, demands, errors or omissions, including faulty design and / or detailing of the Contractor, its subcontractors, agents or employees in the provision of any documentation under the terms of the Contract. To this end, it shall be the Contractor's responsibility to arrange professional indemnity cover through an insurance company acceptable to the Employer, the limits of such cover to be determined by the Employer in relation to the Service.
- 3.2.20. Carry out the various service activities as detailed in the maintenance plan. The schedules clearly state the frequencies at which these services are to be performed i.e., on a weekly, monthly, quarterly, six monthly etc. basis. The maintenance plan shall not limit in any way the Contractor's responsibility to undertake whatever tasks are required during this Contract period to ensure achievement of the maintenance objectives on receipt of request from Employer.
  - 3.2.20.1. Systematically inspect and check the Installation in accordance with the Accepted Plan/Maintenance Plan.
- 3.2.21. Ensure that the Installation at all times comply with provisions of all Laws, Provincial Ordinances, Local Authority Bylaws and all relevant Regulations applicable to the specific Installation.
- 3.2.22. Take adequate precaution against damage to the Site/Affected Property, Installations, equipment, protect the public, the property of the public, the property and workmen of the Employer and all other persons, from injury or damage during the course of the Service. The Contractor or any of its employees, sub-contractors or agents will be held responsible for any damage to the Site / Affected Property or the contents thereof or for indirect loss, caused by him, either as a result of his actions or failure to act, whether it was done during the normal performance of their duties or not, and a claim for damages may be instituted against the Contractor accordingly.
- 3.2.23. Be entitled to use such supplies of electricity and water as may be available on the Site / Affected Property for the purpose of the Service, and at his own expense shall provide any apparatus necessary for such use.
- 3.2.24. Inspect the *Site / Affected Property* on an on-going basis to identify non-compliances and determine necessary cleaning and repairs.
- 3.2.25. Replace all parts timeously, thereby limiting the incidence of breakdowns, unplanned maintenance or repair and consequently maintain maximum network and equipment operation.
- 3.2.26. Ensure that the downtime does not exceed the maximum allowable downtime as specified in this Scope of Work.

- 3.2.27. Updating of equipment lists, registers and data sheets of all equipment and equipment changes, replacement or upgrade.

3.3. The *Employer* shall:

- 3.3.1. Report to the Contractor any irregular performance of or defect in, or damage to any items covered under this Contract.
- 3.3.2. Use the items covered under this Contract in a normal and proper manner, including preventing a material change in the use or usage or the overloading thereof.
- 3.3.3. Protect the items covered under this Contract against vandalism, abuse or misuse and accidental damage.
- 3.3.4. Ensure that the Site / Affected Property with regards to the equipment spaces comply with the applicable regulations and local bylaws.
- 3.3.5. At the request of the Contractor, shall arrange for necessary shutdowns of services and equipment to facilitate the execution of the Service wherever possible during normal working hours.
- 3.3.6. Any disruptions which are deemed to be beyond the Contractor's control and which result in the Contractor's workmen having to leave an area in or on the Site / Affected Property shall be logged in the applicable report book.

3.4. Emergency Call Out Service and Downtime Of Equipment

- 3.4.1. The Contractor shall for the period of this Contract provide and maintain an 24-7 emergency call-out service, enabling a qualified technician (competent person) being called upon by the Service Manager to undertake any repairs or emergency service within the time as shown.
- 3.4.2. Emergency service may be executed without receipt of an official order number and solely on the request from the Employer. The Contractor must however ensure that the official from the Employer signs the job card. The Contractor must also ensure that he obtains an official order number from the Employer the following working day.
- 3.4.3. The Contractor shall inform the Employer verbally and act immediately on any potentially hazard or undesirable situation which may cause harm to persons or which may damage or reduce the life expectancy of the equipment, even if the hazardous or undesirable situation does not form part of the Service.
- 3.4.4. Only breakdowns which affect public health and safety or the operation and safety of sensitive equipment, shall be treated as emergency repairs. Breakdowns involving personal comfort shall not be considered as emergency repairs unless authorized by the Employer.
- 3.4.5. The response time for call-outs (i.e. from the Contractor's receipt of an official request, to his attendance on Site / Affected Property) shall be as follow:
- 3.4.6. Emergency call-outs shall not exceed:
  - 3.4.6.1. One (1) hour within the twenty-five (25) kilometre radius from the Employer's office,
  - 3.4.6.2. Two (2) hours within a fifty (50) kilometres radius from the Employer's office,
  - 3.4.6.3. Three (3) hours further than fifty (50) kilometres from the Employer's office.
- 3.4.7. Normal breakdown calls shall not exceed:
  - 3.4.7.1. Two (2) hours within twenty-five (25) kilometres radius from Employer's office,

3.4.7.2. Four (4) hours within twenty-five (50) kilometres radius from Employer's office,

3.4.7.3. Six (6) hours further than fifty (50) kilometres radius from Employer's office,

3.4.8. Allowed downtimes for the equipment on / in the Site / Affected Property shall be as follow:

3.4.8.1. Minor failures / problems, (such as external repairs to the chillers or pump-sets not requiring stripping or replacement of components readily available) shall not exceed the normal breakdown call time plus one (1) hour.

3.4.8.2. Major failures / problems, mechanical failures, requiring stripping and rebuilding or machining shall not exceed five (5) days.

3.4.8.3. Repairs to any water leaks shall not exceed one (1) day.

3.4.9. Should repairs not be possible within the downtime as indicated in this clause, Emergency call out services and downtime of equipment, above it will be the responsibility of the Contractor to obtain extension of time. The request must describe the breakdown, the cause of it, and state clearly all the reasons for the extension and the actual extension required in regard to the repair.

3.4.10. No extra payment will be made for the standby service availability and attendance to breakdowns or other emergencies whether or not during or after normal working hours and the costs thereof shall be included in the Price list/ Rate.

3.4.11. All breakdowns shall be analysed by the Contractor and relevant action shall be taken. The fault analysis (call-out rate) shall be compiled by the Contractor and shall be recorded. This history shall be kept for at least three (3) years.

3.4.12. Failure of the Contractor to meet the response-time or downtimes under normal circumstances may indicate the Contractor's inability to provide the required Service and may invoke termination of this Contract.

3.4.13. The Contractor shall ensure that the Service Manager is at all times in possession of such telephone numbers and contact addresses as may be necessary to enable the Employer to make emergency calls / call-outs. Adequate communication equipment shall be provided by the Contractor to ensure a minimum delay in the response to emergency calls.

## **4 Management structures**

### **4.1. Performances Measures**

4.1.1. It is recorded and agreed that, in the event that the Contractor fails to deliver goods or render Services stipulated in this Scope of Work, Transnet Property shall be entitled to impose penalties on the Contractor as indicated in Table 1 below.

4.1.2. Transnet Property's right to impose penalties shall not in any way detract from Transnet Property's right to claim damages instead of penalties in the event of a breach by the Contractor of any or all of the terms and conditions of this Agreement.

Key Performance Area	Key Performance Indicator	Key Performance Target	Penalties
PM Schedule Compliance	% Compliance to escalation timeframes/scheduling timeframes/completion dates	100%	<ul style="list-style-type: none"> <li>5 % of the monthly invoice, amount payable the following month</li> <li>3 consecutive non-conformances will result in termination of contract</li> </ul>
Statutory Inspection Compliance	Maintaining statutory (OHS Act and other Regulations) compliance of the premises and meeting the requirements	100%	<ul style="list-style-type: none"> <li>No non-compliances will be tolerated.</li> <li>Immediate termination of contract for any non-compliance</li> </ul>
Key Plant Availability	$\frac{\text{Total man – hours per month – Down Time (Job Cards)}}{\text{Total Time}}$	95%	<ul style="list-style-type: none"> <li>5 % of the monthly invoice, amount payable the following month</li> </ul>
Safety	Life Threatening Incidents	<0: Hours without LTI	<ul style="list-style-type: none"> <li>No non-compliances will be tolerated.</li> <li>Immediate termination of contract for any non-compliance</li> </ul>
Time to Quote	Average number of business days to Obtain a quote from the supplier	2 days (Dependant on nature and extent of works).	<ul style="list-style-type: none"> <li>5 % of the monthly invoice, amount payable the following month</li> <li>2 days (Dependant on nature and extent of works).</li> </ul>
Skills base and Staff compliment	As per skills list in the pricing data/SOW requirements.	Full compliance on any inspection day (non- compliance will result in termination of contract)	<ul style="list-style-type: none"> <li>Deduction of the rate for the skill not found plus 20 % of the monthly invoice, amount payable the following month</li> <li>2 consecutive non-conformances will result in termination of contract</li> </ul>

Environmental Contraventions	Environmental standards are regularly monitored, reviewed and maintained in accordance with all legal and regulatory requirements  Number of notices issued.	0	<ul style="list-style-type: none"> <li>No non-compliances will be tolerated.</li> <li>Immediate termination of contract for any non-compliance</li> </ul>
Emergency call-outs Response Time	Emergency call-outs (from the Contractor's receipt of an official request, to his attendance on Site / Affected Property)	<ul style="list-style-type: none"> <li>Within twenty five (25) km radius from the Employer's office shall not exceed one (1) hour</li> <li>Within fifty (50) km radius from the Employer's office shall not exceed Two (2) hours</li> <li>Further than fifty (50) km radius from the Employer's office shall not exceed Six (6) hours</li> </ul>	<ul style="list-style-type: none"> <li>5 % of the monthly invoice, amount payable the following month</li> </ul>
	Normal break-down calls (from the Contractor's receipt of an official request, to his attendance on Site / Affected Property)	<ul style="list-style-type: none"> <li>Within twenty five (25) km radius from the Employer's office shall not exceed Two (2) hour</li> <li>Within fifty (50) km radius from the Employer's office shall not exceed four (4) hours</li> <li>Further than fifty (50) km radius from the Employer's office shall not exceed Six (6) hours</li> </ul>	<ul style="list-style-type: none"> <li>5 % of the monthly invoice, amount payable the following month</li> </ul>
Downtime of equipment	Allowed downtimes for the equipment on / in the <i>Site / Affected Property</i>	<ul style="list-style-type: none"> <li>Minor failures / problems, (such as external repairs not requiring stripping or replacement of components readily available) shall not exceed normal breakdown plus one (1) hour</li> <li>Major failures / problems, mechanical failures, requiring stripping and rebuilding or</li> </ul>	<ul style="list-style-type: none"> <li>5 % of the monthly invoice, amount payable the following month</li> </ul>



Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

		<p>machining will not exceed five (5) days.</p> <ul style="list-style-type: none"><li>Repairs to any water leaks will not exceed one (1) day.</li></ul>	
Sub-Contracting	Allowed sub-contracting	<ul style="list-style-type: none"><li>Sub-contracted minimum CIDB grade 1 CE/EB, BBBEE level 2</li><li>Minimum sub-contracting of 10% and maximum of 25%</li></ul>	<ul style="list-style-type: none"><li>(Sub-contracting agreed) % of the monthly invoice, amount payable the following month</li><li>3 consecutive non-conformances will result in termination of contract</li></ul>

**Table 1: Performance Indicators**

#### 4.2. Management meetings

- 4.2.1. The Contractor or its duly authorised representative on the Site/Affected Property shall be required to attend monthly (as needed) Maintenance Co-ordination/Risk Reduction meetings with the Employer or his delegate at the Site/Affected Property to discuss the provision of Services, and the Contractor warrants that any representative who attends such Maintenance Co-ordination/Risk Reduction meetings on its behalf shall be duly authorised to do and to bind the Contractor vis-a-vis all decisions taken and agreements reached. Minutes and records of such Maintenance Co-ordination/Risk Reduction meetings shall be the responsibility of the Employer. Minutes will be made available to the Contractor within seven (7) working days.
- 4.2.2. The Contractor must present a monthly written report on the Services rendered by it, in respect of the Site/Affected Property. Unless the Employer prescribes otherwise, this report shall include the following:
- 4.2.2.1. Name, address and telephone number of the Contractor.
  - 4.2.2.2. Date of report and reporting period.
  - 4.2.2.3. Detail on the results of each examination, including any faults analysis, modification, replacement and repair work, adjustment and test carried out.
  - 4.2.2.4. Results of tests on safety devices.
  - 4.2.2.5. Incidents/events.
  - 4.2.2.6. Problems, including administrative problems with the Employer experienced during reporting period.
  - 4.2.2.7. Any factors that affect, or may affect, the safety of the Site / Affected Property or Installation, people and equipment.
- 4.2.3. The Employer may request supplementary and interim written reports from the Contractor.
- 4.2.4. The Contractor shall provide on request of the Employer, computer generated reports detailing a history of call-outs, repairs and breakdown repairs etc.

#### 4.3. Contractor's Management, Supervision and Key People

- 4.3.1. The Contractor shall appoint on the Site / Affected Property a "competent" person in charge. Any instruction to him / her by the Employer shall be deemed to have been issued to the Contractor. Whenever the representative (supervisor) is absent from the Site / Affected Property a suitable person shall be appointed to act as his / her deputy.
- 4.3.2. The Contractor shall ensure that at all times there is sufficient suitably qualified and experienced personnel to provide the Service. The Service covered in this Contract must be executed under direct supervision of a qualified technician who is registered in accordance with the relevant statutory regulations where applicable.
- 4.3.3. The Contractor shall ensure that maintenance work of a technical nature shall be performed by "Competent" persons as defined in the Occupational Health and Safety Act who are qualified artisans experienced and skilled in maintaining equipment similar to that which is to be maintained.
- 4.3.4. All employees provided by the Contractor in terms of this Contract shall at all times be neat and properly clothed to the satisfaction of the Employer, the Employer reserves the right to request such employees to wear a uniform or overall of a type, cut and design approved by the Employer and purchased by the Contractor. Employees must be identifiable as employees of the Contractor by means of their uniforms:
- 4.3.4.1. The Contractor, or any agent or employee of his, must wear protective clothing where necessary. The Contractor must supply the relevant protective clothing at his own cost and included in the pricing of the Service.

4.3.5. Personal hygiene must be maintained by the Contractor's employees and agents at all times.

4.3.6. The Contractor and its employees will maintain silence within reasonable bounds on the Site / Affected Property.

4.3.7. The salaries or wages paid by the Contractor to his employees must at all times comply with the applicable statutory requirements in respect of minimum wages.

4.3.8. All training and evaluation costs as provided for in terms of this Contract shall be borne by the Contractor.

4.3.9. It is the intention of both Parties that employees provided in terms hereof shall, as far as practically possible, not fail to carry out their duties as a result of any form of intimidation. Should intimidation of employees be suspected, the Contractor shall take prompt action in conjunction with the South African Police Service to remedy the situation.

4.3.9.1. Such action shall, if deemed necessary by the Employer, include immediate replacement of the employees involved.

4.3.9.2. The Contractor shall forthwith notify the Service Manager of any form of intimidation its employees may be subjected to.

4.3.10. Should the Employer at any time during the term of this Contract make any facility available to the Contractor, the Contractor shall, at its own cost maintain and keep such facility during the term of this Contract in a clean, tidy and sanitary condition and shall at the termination of this Contract for whatsoever reason, reinstate any such facility to the same condition in which it was when handed to the Contractor, fair wear and tear excepted. The Contractor will be liable for all electricity cost.

4.3.11. The Contractor shall make his own arrangements in respect of the installation and provision of telephones at the Site / Affected Property at his own cost, should the Contractor deem it necessary.

4.3.12. The employees of the Contractor may only use toilet facilities that have been pointed out to them.

4.3.13. The employees of the Contractor may use rest-room facilities that have been pointed out to the Contractor (if available). However, it is not the duty of the Employer to make such rest-room facilities available.

4.3.14. The Contractor shall further ensure that all workmen are fully aware of the conditions and requirements of this Contract and shall furnish all workmen with copies of all relevant Standard Specifications and Regulations.

4.3.15. If the Employer requires any information regarding any of the employees of the Contractor who are involved in the rendering of the Service in terms of this Contract, the Contractor will furnish such available information immediately.

#### 4.4. Deliverables

4.4.1. The service contractors shall submit the following reports, attached to all invoices:

4.4.1.1. Report on services delivered/performed;

4.4.1.2. Service delivered performance;

4.4.1.3. Chemicals used;

4.4.1.4. Completed checklist where applicable;

4.4.1.5. Ad hoc services requested where applicable;

4.4.1.6. Any and all staff and labour issues that can affect service delivery to Transnet;

4.4.1.7. Incident report summary as compiled. All incidents shall be reported as soon as they occur and a flash/notice report generated within the same shift. A detailed investigative report with

corrective and preventative detail shall be submitted within 48 hours from the occurrence of the incident.

- 4.4.2. The weekly and monthly reports shall have a summary of key issues affecting the plant, major breakdowns etc. The Employer reserves the right to alter the format and information required on this report.

#### 4.5. Documentation Control

- 4.5.1. The Employer will provide the Contractor at the appropriate times with the Technical Information necessary to enable the Contractor to complete the Services in accordance with the Accepted Plan and schedules. All Technical Information shall be and remains the property of the Employer and on demand and on termination of the Contract shall be returned to the Employer.
- 4.5.2. During the progress of the Services/Task and prior to their completion, the Contractor will submit to the Employer any Documentation as requiring submission to the Employer prior to completion of the Contract/Task.
- 4.5.3. If it is agreed between the Employer and the Contractor that modifications to any such Documentation are necessary, then such modifications shall be incorporated in the relevant Documentation by the Contractor and the Documentation, thus modified will be re-submitted to the Employer prior to the completion of the Contract/Task.
- 4.5.4. Where applicable, the Documentation to be supplied to the Employer in terms of this Contract will include updated copies of the Documentation, duly modified where necessary to cover the Contractor's Services.
- 4.5.5. The Employer may from time to time during the progress of the Contract instruct the Contractor to submit for approval, perusal or prior to the completion of the Contract/Task such additional Documentation as the Employer may require.
- 4.5.6. The times for submission of the Documentation shall be as stipulated in the Scope of Works or where not so stipulated, then on dates to be mutually agreed between the Employer and the Contractor, but generally as soon as possible after such Documentation is completed by the Contractor.
- 4.5.7. The Contractor will maintain an up-to-date schedule of all Documentation showing the date of all such Documentation, which schedule shall be supplied to the Employer by the Contractor at agreed intervals.
- 4.5.8. The Employer will have the right at all reasonable times to inspect the Documentation of the Contractor or any Sub-contractor.
- 4.5.9. All Documentation shall become and remain the property of the Employer. Title to all information, know how, inventions and improvements disclosed to the Employer by the Contractor under the Contract will become the property of the Employer.
- 4.5.10. Approval given by the Employer shall not relieve the Contractor from responsibility for due performance of this Contract and adherence to Technical Information provided by the Employer. The Contractor shall protect and save harmless the Employer and Employer's employees against all losses, expenses, demands, errors or omissions, including faulty design and / or detailing of the Contractor, its sub-contractors, agents or employees in the provision of any Documentation under the terms of the Contract. To this end, it shall be the Contractor's responsibility to arrange professional indemnity cover through an insurance company acceptable to the Employer, the limits of such cover to be determined by the Employer in relation to the Service.

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4.5.11. The Contractor shall inform the Employer in writing prior to carrying out of any modification to the existing Installation by the Contractor, even if this modification may benefit the Installation or if the cost of this modification is for the Contractor's account.

4.5.12. The Contractor shall inform the Employer of all improvements or revisions related to the Installation. These notifications shall take the form of technical notices or sales releases under a covering letter from the Contractor.

4.5.13. The Contractor shall on a monthly basis provide the Employer with all records related to this Contract/Service.

4.5.14. The Contractor shall provide maintenance site registers located in the plant rooms and maintain accurate records of all service procedures, site visits, stoppages, breakdowns, planned repairs and safety related equipment operational tests and checks.

#### 4.6. Invoicing and Payment

4.6.1. When making a claim for payment, the Contractor shall submit to the Service Manager or appointed Employer representative a complete and correct pro-forma invoice with all relevant service reports / sheets, log sheets, invoices, time sheets for any authorised additional work, schedules and reports properly complete setting out details of Services / Tasks carried out and recommendations for any additional work required to enhance and maintain the performance and reliability of the Installation for scrutiny and verification of the correctness. Thereafter, inspections will be carried out by the Service Manager or appointed Employer representative, to affect quality assurance. If the Service has been completed to his satisfaction, only upon agreement being reached on the amount to be included in the payment certificate shall the Contractor provide the Employer with a VAT invoice.

4.6.2. The following information shall be reflected on the pro-forma invoices and or VAT invoices:

4.6.2.1. Full description of Service / Task performed. (In respect of emergency call-outs, the time and date and name of the person who called the Contractor must be indicated).

4.6.2.2. Fixed monthly contracted services performed.

4.6.2.3. Detailed list of materials / spare parts used showing unit prices, Contractor's mark-up, and sub-total.

4.6.2.4. Copies of all applicable invoices with the applicable Installation inventory number (invoices without order numbers will not be processed for payment).

4.6.2.5. V.A.T.

4.6.2.6. Grand Total.

4.6.3. Supporting documentation must be furnished in respect of all materials / spare parts and sub-contract service bought out in the form of copies of supplier/s invoices or copies of priced delivery notes. Notwithstanding the foregoing, the Service Manager or appointed Employer representative shall have the right to call for invoices rendered by suppliers to the Contractor in respect of spares and materials purchased for repairs and service to Installations and shall be entitled to withhold the issuing of the payment certificate to the Contractor until such information / documentation have been furnished to the Employer, provided that, in respect of additional documentation required by the Employer, the Employer's instruction shall have been given to the Contractor in sufficient time before any such payments certificate became due. This must include date stamped before and after photos of the work conducted. Photos to be taken using a digital camera with a minimum of 12 Mega pixels resolution as well as the signed off job card by client / tenant.

4.6.4. No payment for the labour portion of this contract will be considered without supporting documentation verifying the activity schedule execution against the approved maintenance plan for the applicable period.

4.6.5. Payment will be made thirty (30) days from the date of receipt of the Contractor's signed invoice and credit notes.

4.6.6. In the event that any emergency service / work / task order or overtime is provided at the Employers request and subsequent inspection does not reveal any defect for which the Contractor is responsible the Contractor reserves the right to charge the Employer, in accordance with the agreed day work rates plus all travelling.

#### 4.7. Training Workshops and Technology Transfer

4.7.1. All training and evaluation costs as provided for in terms of this Contract shall be borne by the Contractor.

#### 4.8. Design and Supply of Equipment

4.8.1. The Contractor ensures that the design is fit for the purpose intended. As far as applicable to maintenance and operations, the design will be in accordance with the mutually agreed specifications.

#### 4.9. Things Provided at the End of the Service Period for the Employer's Use

##### 4.9.1. Equipment

4.9.1.1. The inventory materials and spares that were purchased by the Employer during the tenure of the contract should be returned provided the contractor still holds some in stock.

##### 4.9.2. Information

4.9.2.1. The drawings/diagrams will remain in the sole custody of the Employer. Two copies thereof will be furnished to the Contractor free of cost, but any further copies shall be paid for by the Contractor. The Contractor shall give reasonable notice in writing to the Service Manager of any further drawing/diagrams or specification that may be required for the execution of the Service.

4.9.2.2. The Employer will provide the Contractor at the appropriate times with the Technical Information necessary to enable the Contractor to complete the Services in accordance with the Accepted Plan and schedules. All Technical Information shall be and remains the property of the Employer and on demand and on termination of the Contract shall be returned to the Employer.

#### 4.10. Management of Work Done by Task Order

4.10.1. The Contractor shall in the event of **ad hoc or minor new work** become necessary, submit a minimum of two (2) quotations (dependant on the nature of works) for such work to the Service Manager and obtain approval from the Employer's designated person or *Service Manager* before attending to the work.

4.10.2. Quotations must be submitted to the Employer's designated person or Service Manager two (2) days from the day requested.

4.10.3. No work will be done by the Contractor without a Task Order issued to the Contractor by the Service Manager or Employer's designated person. This Task Order will refer to a complaint number and details regarding the work that must be attended to by the Contractor in writing.

4.10.4. Should the Contractor in the course of performance of the Service become aware of the necessity for any emergency repair, such emergency will forthwith be reported to the Service Manager or any Employer's designated person for further instructions, provided that nothing herein contained will preclude the Contractor or relieve the Contractor from the obligation of taking all such immediate

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and reasonable steps as may in the circumstances be necessary for the proper maintenance and upkeep of the Installations and the safety of the user(s).

- 4.10.5. The Contractor shall at all times, follow and implement the specified and mandatory safety procedures.
- 4.10.6. The Contractor will not be entitled to preferential consideration in respect of new work in or the site/ Affected Property or installation. The Employer reserves the right to employ other contractors on an open tender basis where maintenance or new works are done on a project basis and not be a Term Service Contract.
- 4.10.7. The Employer reserves the right to execute any maintenance or repair work covered under this Contract with his own employees.
- 4.10.8. Where the Price (material or labour, or material and labour) is not stipulated in the Price List/Labour Rates or is not of a similar nature the cost will be based on a fixed labour price as per Price List / Labour Rates (during normal working hours) plus material content (excluding that in the Equipment clause) based on proven cost (Supplier/s quotations with deductions for all discounts, rebates and taxes which can be recovered) plus an agreed percentage mark-ups.
- 4.10.9. The Contractor must provide his job cards specifying detail of repairs, this Task Order (official order number(s)) and breakdown of cost into labour (for work done after normal working hours) and material (for non-Activity Schedule work) and signed-off by the Service Manager or Employer's designated person. In addition to the original completed job card submitted with his account / invoice, the Contractor must submit a copy of the job card to the Service Manager for audit purposes and retain a third copy for his official records. The Contractor shall also conduct and submit a Root Cause Analysis within 48 hours of completing the activity.
- 4.10.10. Upon completion of the works, the supplier must attach Work Requests and signed –off invoice/payment certificate.

## **5 Health and Safety, Environment and Quality Assurance**

### **5.1. Health and safety, Risk, Environmental Constraints and Management**

- 5.1.1. The Contractor must, for the duration of this Contract, comply with the terms of any Act of Parliament and with the regulations and rules of any local or other authority with regard to the Service, and he must at all times notify such an authority when notice is required and pay all fees to the authority that are payable with regard to the Service. The Contractor undertakes to indemnify the Employer against all losses, costs, damage or expenses caused by the Contractor's failure to comply with the requirements of any such local legislation or Act of Parliament, regulations and rules. Should such fees not be paid by the Contractor, the Employer may, although it is not obliged to do so, directly make the payment. Such payment and any expenses incurred by directly making the payment and arrangements with regard thereto shall be deducted from the payment due to the Contractor, or it shall be recovered from him.
- 5.1.2. The Contractor shall comply with the Occupational Injuries and Diseases Act. (Act 130 of 1993) and any amendments thereof: The Contractor shall produce proof of his registration and good standing with the Compensation Commissioner in terms of the Act.
- 5.1.3. The Contractor shall comply with the Occupational Health and Safety Act (Act No. 85 of 1993). The Contractor is, in terms of section 37(2) of the Act deemed to be an employer in his own right with duties as prescribed in the Act and agrees to ensure that all work will be performed or machinery or plant will be used in accordance with the provisions of the Act, that all persons in his employ, other persons at the place of any work performed by him and under his control and other persons who may be directly affected by his activities are not exposed to hazards to their health and safety, with particular reference to both the performance of the Service and the safety of the Installation

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

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maintained in terms of this Contract. This Contract and all documents attached or referred to, form an integral part of this Contract and procedures mentioned in the aforementioned section of the Act.

- 5.1.4. The Contractor shall at his own costs at all time comply with the provisions of all such Laws, Provincial Ordinances, Local Authority Bylaws and all relevant Regulations framed there under which are applicable to the Service to be undertaken.

## 5.2. Quality assurance requirements

- 5.2.1. All work must be executed in accordance with prevailing industry norms and standards relating to quality. In this regard, the Contractor will be expected to draft quality plans for the Service Manager from time to time. Emphasis must be on improving system reliability and on ensuring that rostered maintenance work is indeed performed as and when required.

- 5.2.2. All new parts should be replaced with Original Equipment Manufacturer (OEM) prescribed parts and the quality should be in accordance with South African Bureau of Standards (SABS), South African National Standards (SANS), American National Standard Institute (ANSI) standards.

## 6 Procurement

### 6.1. Plant and Materials

- 6.1.1. The Employer reserves the right to obtain his own supplier/s quotations for the same (quality, standard etc. included) material used by the Contractor. The Contractor shall take into account lowest price quotation and availability plus a fee for costing the work.
- 6.1.2. The supply of Plant and Material not covered in this Contract will be charged at nett cost plus a Fee as recorded in this Contract.
- 6.1.3. The Contractor shall ensure that any and all material procured by the Contractor for this Contract, are obtained at least at rates that are available to the Employer for similar material. Should the Contractor obtain material at a premium and should the Employer be able to prove that the Contractor did not endeavour to minimise the higher rate/s, the Employer may select not to reimburse the Contractor for the portion of the price for which the Contractor paid a premium. A minimum of 3 competitive quotes shall be sourced by the Contractor for such material to be supplied.
- 6.1.4. The Employer may supply Plant and Material for the Service on a free issue basis which means that the Fee will not be applicable on these items. Should the Employer provide or make available any Plant and Material, the Contractor shall be responsible for proper and economical transport, storage and use thereof. The cost of any loss or damage to the Employer's plant and material other than through normal wear and tear, and any uneconomical use or loss of Plant and Material provided by the Employer, will be recovered from the Contractor.
- 6.1.5. Only Plant and Material of the best quality and approved by SANS and or satisfying the manufacturer's requirements are to be used in the execution of the Service and the Service is to be performed in a proper workmanlike manner to the full satisfaction of the Employer or any statutory institution.
- 6.1.6. Replacement parts, Plant and Materials used must meet the original manufacture's requirements. Only parts that are correctly designed, manufactured and suitable in all respects shall be used. Any alternative replacement needs to be approved by the Employer and conform to SANS specifications and must where possible carry an appropriate mark of approval.
- 6.1.7. The Contractor shall inform the Employer in writing with all documents and drawings at least forty-eight (48) hours prior to carrying out any modification to existing Installation/Equipment deemed necessary by the Contractor.



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- 6.1.8. The Contractor shall provide and keep or have access to a national or international inventory of all wearing parts in respect of the Installation. The Employer reserves the right to inspect the spares inventory at any time during the term of this Contract.
- 6.1.9. No existing equipment, apparatus, appliance or parts of the Installation will be replaced, re-sited, refurbished or be declared redundant without the written consent of the Employer. Replaced or redundant parts remain the property of the Employer and shall be delivered to the Employer to be scrapped where after the Contractor will remove it unless otherwise decided by the Employer.
- 6.1.10. The Contractor shall inform the Employer at least one (1) week prior to commencing planned repairs, which may necessitate the Installation / Equipment being removed from service for periods exceeding two (2) hours.
- 6.1.11. Risk of loss of, or damage to any goods supplied shall remain with the Contractor until such goods supplied have been installed by the Contractor, approved and taken over by the Service Manager.
- 6.1.12. The Contractor undertakes to renew the guarantees of any item in whole or in part which may become defective or faulty during the guarantee period and extend the guarantee for a further term related to the original guarantee. Any such item shall be repaired, replaced or re-instated by the Contractor free of charge to the Employer. Should any item forming part of the Installation and which has been repaired, overhauled, refurbished, serviced or worked on by the Contractor in terms of this Contract, become defective or faulty, during guarantee period (a reasonable time) such items shall be repaired, replaced or re-instated by the Contractor free of charge.
- 6.1.13. No Plant, Material and Equipment shall be shipped or delivered to Site/Affected Property until permission has been obtained by the Contractor from the Employer that these may be delivered. The Contractor shall be responsible for the reception at the Site/Affected Property of all plant and Contractor's equipment delivered for the purpose of this Contract.
- 6.1.14. Except where specifically stated otherwise, the transport to, off-loading, positioning, stacking and storing on the Site/Affected Property of all plant, material, machinery etc. used in connection with the Works by the Contractor shall be the responsibility of the Contractor, including all necessary supervision, labour and equipment for this purpose, and the cost thereof shall be included in the bill of activity schedules.
- 6.1.15. All Plant and Material stored on Site/Affected Property must be suitably protected and secured against deterioration through any cause whatsoever, including damage or loss by theft or otherwise. The Contractor shall remain fully responsible for all material and plant etc. until the completed Works are handed over to, or have been officially accepted by the Employer.
- 6.1.16. The Contractor shall cede to the Employer any suppliers or factory guarantees of repaired or replaced components and ensure that such guarantees are not jeopardized in any way. All workmanship and repairs shall be guaranteed for twelve (12) months and so stated on all invoices (failure to do so will delay payment).
- 6.1.17. All plant, parts, machinery etc., removed from Site / Affected Property for repair purposes shall be signed for by the Contractor if it is removed from the Site. The appropriate receipt form (model number, serial number, part etc.) shall be in duplicate form and available for inspection at any time at either the Service Manager or called for from the Contractor.
- 6.1.18. The Contractor shall be responsible for the provisioning of all material, products, consumables (disposable materials, grease, oils, hacksaw blades, insulation tape required, cleaning materials etc.), replacement of nuts, bolts, washers, self-tapping screws etc. plus Equipment (including but not be limited to ladders, scaffolding or specialised tools) that might be needed in order to render an efficient Service at his own cost and included in the Price List / Rates.
- 6.1.19. The Employer reserves the right to take samples of any consumables and or material supplied by the Contractor for analysis if deemed necessary

## 6.2. Correction of defects

- 6.2.1. If the Employer decide that any work done by the Contractor or any subcontractor is defective or not in accordance with the Contract or does not fulfil the requirements of the Contract and as soon as reasonably practicable give to the Contractor notice in writing of such decision giving particulars of the alleged defect, the Contractor shall with all speed make good the defects so specified.
- 6.2.2. The cost of making good such defects shall form part of the Contract Bill of schedule, including where a defect is due to negligence or failure of the Contractor, his servants, agents or subcontractors, to exercise good faith or the standard or care which would normally be exercised by duly qualified persons engaged in the business of the Contractor.
- 6.2.3. Should the Contractor fail to fulfil any of its obligations in terms of this Contract or should such Service not be completed with due diligence and in a proper and workmanlike manner to the satisfaction of the Employer and should the Contractor fail to remedy such breach within the timeframe from the date of written notice from the Employer calling upon to do so, the Employer shall have the right without prejudice in terms of this Contract or at law, without further notice to the Contractor.
  - 6.2.3.1. Appoint another person other than the Contractor to complete the Service in question and to recover from the Contractor all cost to complete the work in question plus an administration costs of twenty five (25) percent (%) of the price the other contractor charge the Employer to complete the Service, or
  - 6.2.3.2. Cancel this Contract and recover from the Contractor any damages that it may suffer as a result of such cancellation and / or breach.

## 7 Working on Affected Property

### 7.1. Employer's site entry and security control, permits, and site regulations

- 7.1.1. The Contractor shall at all times ensure that its employees, agents, representatives, specialist-, subcontractors and suppliers:
  - 7.1.1.1 Comply with all security measures and directives imposed by the Employer, or his delegate, tasked with managing the Services in or on the Site / Affected Property.
  - 7.1.1.2 Keep the access gates / doors locked at all times. If any security problems are noticed, the Contractor shall immediately notify the Service Manager.
  - 7.1.1.3 Shall in terms of this Scope of Work when on duty (unless the Employer should decide otherwise), wear an identity disc, tag or other device as agreed upon between the Parties. For the purposes of this Scope of Work, an identity disc, tag or other device prescribed by the Employer shall at least contain the following information in respect of the Contractor's personnel:
    - 7.1.1.3.1 a colour photograph of the relevant member
    - 7.1.1.3.2 full names and surname
    - 7.1.1.3.3 identity number
- 7.1.2. The identity disc shall at all times be visibly displayed on the employee's person while he/she is on the Site / Affected Property. The necessary control must be exercised over such identity discs to prevent them from falling into unauthorised hands. The Contractor will be liable for the replacement cost of lost identity disc.
- 7.1.3. All employees of the Contractor will be subject to the requirements set out in section 2(2) of the Control of Access to Public Premises and Vehicles Act, 53 of 1985.

- 7.1.4. A list of names of employees that will be working on the Site / Affected Property during a given time must be made available to the Service Manager. Should any exchange of personnel take place, the Service Manager must be informed accordingly in writing. Unidentified employees, and employees whose names do not appear on the list, will not be allowed to enter the Site / Affected Property.
- 7.1.5. Employees of the Contractor may not walk about without any purpose on the Site / Affected Property and may not use chairs and seats in public areas for purposes of relaxation.
- 7.1.6. Employees of the Contractor have, subject to the terms of this Scope of Work, admission to all areas to perform their duties subject to approval by the Employer / Tenant. If a service does not have to be performed at a specific stage in a specific area, no admission is permitted. The Contractor must make provision in his costing for access delays in security areas.
- 7.1.7. Any disruptions which are deemed to be beyond the Contractor's control and which result in the Contractor's workmen having to leave the Site / Affected Property shall be logged in the applicable report book.
- 7.1.8. Within seven (7) days of the Contract Date and before such employee enters the Site / Affected Property to perform the Service, the Contractor shall furnish the Service Manager with the full names, identity numbers, residential addresses, two recent passport photographs and such other items of information as may be required by Service Manager, in respect of all persons who will be employed by the Contractor to undertake work at the Site / Affected Property in terms of this Contract.

## 7.2. People restrictions, hours of work, conduct and records

- 7.2.1. Service operations will be performed during Transnet "Office hours only". The times are Monday to Friday from 07h30 to 16h00 excluding public holidays. Service operating hours outside of these must be explicitly arranged by the Transnet authorised representative. Contractor personnel shall, however, be on standby 24/7.
- 7.2.2. The Contractor shall at all-time render service that enhance and maintain at minimum the corporate image of Transnet Property.
- 7.2.3. The Contractor shall at all-time render service that is in line with Transnet Property's values and ethos.
- 7.2.4. The Contractor must exercise the highest possible standards of conduct in performing their duties in accordance with this Agreement.
- 7.2.5. The Contractor shall, upon receipt of written request from Transnet Property, provide Transnet Property with copies of all the Service Provider's operating procedures and processes relating to the Services.
- 7.2.6. The Contractor is responsible for overall management and supervision of the contracted staff performing duties at the Premises in accordance with the provisions of this Agreement.
- 7.2.7. The Contractor must ensure that a competent site manager is appointed as required ensuring deliverables and quality of service delivery.
- 7.2.8. The Contractor shall immediately inform Transnet Property in writing if any contracted staff is found guilty of improper conduct.
- 7.2.9. It is expected from the contractor to ensure that all duties and tasks to be performed on site are adhered to.
- 7.2.10. The Contractor must exercise reasonable skill, care and diligence in the rendering of the services and the performance of its obligations to Transnet Property.
- 7.2.11. The Contractor shall provide written reports on progress made in the rendering of the Services to Transnet Property at such intervals and in such format as may be determined at the sole discretion of Transnet Property.
- 7.2.12. Transnet Property shall be entitled to request additional information pertaining to any matters or issues raised in or relevant matters or issues omitted from a progress report.
- 7.2.13. In the event of an unusual occurrence, the Contractor shall submit an Incident Report to Transnet authorise representative within twenty four (24) hours.

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- 7.2.14. Any and all reports prepared during the term of this contract shall become the property of Transnet Property.
- 7.2.15. Where services are deteriorating a service improvement plan can be requested on how services will be improved.
- 7.2.16. The Contractor shall ensure that all necessary equipment, services or material as required are kept in the condition as required by law, regulations and procedures and readily available for Transnet Property to inspect and test without prior notice.
- 7.2.17. The Contractor shall, in the provision of the Services, have due regard to the operational requirements of Transnet Property and the Premises and other parties occupying or operating from the Premises and shall not do, or permit to be done, anything which may negatively impact on such parties' operational requirements.
- 7.2.18. The Contractor shall ensure that it and its contracted staff and site manager shall at all times comply fully with any safety, fire, emergency and security procedures and policies applicable at the Premises
- 7.2.19. Should Transnet Property at any time believe that any of the Service Provider's personnel is failing to comply with any such procedures or policies, Transnet Property shall be entitled to deny such person access to the relevant Premises and require the Contractor to replace such person without delay.

#### 7.2.20. Personnel Standards

##### 7.2.20.1. Contractor staff must be:

- 7.2.20.1.1. able to communicate the official language of Transnet which is English;
- 7.2.20.1.2. physically fit to perform the tasked duties as required;
- 7.2.20.1.3. presentable, clean, neat and portray a professional image at all times whilst conducting their duties in a professional manner;

7.2.21. Contracted staff must at all times be alert, vigilant and professional in their approach, bearing and actions and the following deviations will be regarded as extremely serious and may be regarded as sufficient reason to ask the Contractor to remove a particular contracted staff(s) from the Premises permanently:

- 7.2.21.1. Absence without proper notification;
- 7.2.21.2. Accepting any gifts or bribes in the line of duty;
- 7.2.21.3. Conduct unbecoming of a contracted staff or prejudicial to discipline, either on or off duty;
- 7.2.21.4. Drinking intoxicating liquor or using intoxicating substances while on duty or reporting for duty in an intoxicated condition;
- 7.2.21.5. Enabling any person to secure stolen property from the Premises;
- 7.2.21.6. False reporting;
- 7.2.21.7. Negligence in the application of Transnet instructions, after being duly informed thereof;
- 7.2.21.8. Sleeping on duty or neglecting his/her duty;
- 7.2.21.9. Using or carrying a weapon;
- 7.2.21.10. Unnecessarily harsh or violent conduct or using profane language while performing his / her duties in accordance with this Agreement;
- 7.2.21.11. Wilful disobedience of instructions, orders of a superior or a reasonable request by Transnet Property;
- 7.2.21.12. Failing to report any security incident or safety hazard either observed by the contracted staff or brought to his/her attention by another person;
- 7.2.21.13. Failing to wear the prescribed clothing or identification when on duty.
- 7.2.21.14. Failing to present an acceptable image or an upright position, or to deal with any person in a respectful manner. This implies that a contracted staff shall not sit when he/she should be standing and shall not lounge about, smoke, eat, drink, read or occupy him/herself with any distracting activity while attending to any person in the performance of his / her duties.

7.2.22. Contractor staff may be subject to breathalyser testing by Transnet or Representative Contractors prior to the granting of permission onto its Site.

### 7.3. Health and safety facilities on the Affected Property

- 7.3.1. The Contractor undertakes to comply with the Employer's safety and emergency measures and procedures the Site / Affected Property.
- 7.3.2. The Contractor's procedures for the procurement, storage, handling, transporting, application and general use of chemicals shall comply with all applicable legislation, Codes of Practice and Local, Regional or Provincial Authorities.
- 7.3.3. The Contractor shall not use or keep any poisonous or highly flammable materials on the Site / Affected Property without the approval of the Service Manager, for the rendering of the Service or for whatever purpose.
- 7.3.4. The obligation to take care of and protect the Service and everything connected therewith shall rest solely with the Contractor who shall take all necessary precautions to protect Others, the property of the Others, the property and personnel of the Employer from damage or injury, and to protect adjoining properties from trespass or damage during the Service.
- 7.3.5. The Contractor shall inform the Employer verbally and in writing and act immediately on any potentially hazard or undesirable situation which may cause harm to persons or which may damage or reduce the life expectancy of the Installation, even if the hazardous or undesirable situation does not form part of the Contractor's responsibilities.
- 7.3.6. The Contractor may not do or leave or permit anything on the Site / Affected Property that, in the opinion of Service Manager, might cause any damage to the property or that might be a nuisance or burden or danger or possible nuisance or burden or danger to any person on / in the Site / Affected Property.
- 7.3.7. The Contractor shall be obliged to display neat warning signs of which the size and design are of such a nature they are easily visible, at all places where the Services are undertaken by the Contractor, and where the rendering of the Services might cause injuries to any person, in order to focus the attention of such person on the Services that are undertaken in that area.
- 7.3.8. Special condition: It is hereby specially stipulated that, during the period of this Contract, the Contractor will be obliged to do everything that might be necessary and practically feasible in order to ensure that all signs, printing, notices or documents that are displayed on / in the Site / Affected Property, will appear in English plus at least one other official language.

### 7.4. Cooperating with and obtaining acceptance of Others

The Contractor's duty is to co-operate with Others as expressed under the service information. Where the Contractor's work may affect or interfere with the activities of the Employer or Others, it is important that interfaces in respect of physical location and timing are agreed by all parties and shown on the contractor's plan.

### 7.5. Records of Contractor's Equipment

- 7.5.1. The Contractor shall have all their Tools and Special Equipment, necessary for the execution of the works, either on site or readily available at their premises and shall be recorded and certified.
- 7.5.2. The Contractor shall complete or generate an inventory lists of their equipment and update inventory lists systems on a continuing basis (equipment type and location).

### 7.6. Site services and facilities

- 7.6.1. Provided by the Contractor

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- 7.6.1.1. The Contractor shall make his own arrangements in respect of the installation and provision of telephones at the Site/Affected Property at his own cost, should the Contractor deem it necessary.

## 7.7. Tests and inspections

- 7.7.1. The Employer or its duly appointed representative shall retain the right to witness and/or verify the performance of any Service by the Contractor at any time.
- 7.7.2. Independent inspections: the Employer shall have the right to authorize the inspection of individual equipment or the Installation using suitably qualified person at any time and the results of such inspections shall be promptly communicated in writing to the Contractor. Should any defects or remedial work be required in terms of this Contract, the Contractor shall expeditiously undertake it within a mutually agreed time period the corrective work. When the Contractor's work has been completed satisfactorily, the Employer or its duly appointed inspector shall be notified in writing. A further follow-up inspection by the Employer or its inspector may be conducted.
- 7.7.2.1. Should the follow-up inspection show that the work as agreed and undertaken by the Contractor has not been satisfactorily carried out; the procedure shall be repeated until the established standard of maintenance has been attained. The cost for the follow-up inspection shall be borne by the Contractor
- 7.7.2.2. Notwithstanding the Employer's rights in terms of this Contract, the Contractor shall refund the Employer its costs associated with the reapplication where the Contractor has not completed work satisfactorily as agreed.
- 7.7.2.3. The independent inspections shall in no way limit the Contractor's responsibility with respect to any obligation or liabilities in terms of this Contract.

## 8 List of Drawings

### 8.1. Drawings issued by the Employer

- 8.1.1. Drawings means all the drawings / diagrams referred to in this Scope of Work provided by the *Employer* and furnished to the *Contractor*, or submitted by the *Contractor* and approved in writing by the *Employer*, any revisions of such drawings / diagrams and any such other drawings / diagrams as may from time to time be furnished or approved by the *Employer*.
- 8.1.2. The Employer shall permit the Contractor access to relevant drawings and records relating to the Service, where these are available.
- 8.1.3. The drawings / diagrams will remain in the sole custody of the Employer. Two copies thereof will be furnished to the Contractor free of cost, but any further copies shall be paid for by the Contractor. The Contractor shall give reasonable notice in writing to the Service Manager of any further drawing / diagrams or specification that may be required for the execution of the Service.
- 8.1.4. One copy of the drawings / diagrams furnished to the Contractor as aforesaid shall be kept by the Contractor on the Site / Affected Property, and shall at all reasonable times be available for inspection and use by the Employer or any other authorised person.
- 8.1.5. The Contractor shall timeously and carefully examine all drawings and shall immediately notify the Service Manager in writing of any error, inaccuracy, discrepancy or inconsistency detected by him, or raise an objection thereto in order that it may be rectified or decided upon without disruption or delays to the progress of the Service.
- 8.1.6. Where the design of an installation or part thereof is done by the Contractor or third party he shall, unless otherwise directed, submit electronic copies (Auto-Cad), of all plans or drawings of such

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installation to the Employer whose written approval must be obtained before the Service concerned is commenced.

8.1.7. The Contractor hereby grants to the Employer a non-exclusive license, in accordance with the provisions of section 22 of the Copyright Act, 1978 –

8.1.7.1. to copy any plan, diagram, drawing, specification, bill of quantities, design calculation or other similar document made by the *Contractor*, other than under the direction or control of the *Employer*, in connection with the Service;

8.1.7.2. to make free and unrestricted use thereof for its own purposes;

8.1.7.3. to provide copies thereof to consultants to be used by them for consultations and consulting services to the Employer;

8.1.7.4. to provide other parties with copies thereof where tenders are invited by the Employer.

8.1.8. Such non-exclusive license shall apply mutatis mutandis to any plan, diagram, drawing, specification, bill, design calculation or other similar document made, other than under the direction or control of the Employer, by any sub-contractor of the Contractor.

8.1.9. The Employer shall make no separate or extra payment in respect of any non-exclusive license granted in terms hereof.

Where the Service requires from the Contractor to provide the Employer with detail design, drawings and or diagrams of an existing or new installation that drawing and or diagrams will comply with Clauses as listed above.

Contract number:

## Work Area





Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

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## **Annexure 2**

### **Planned Maintenance Activity Schedule**

**(Please note: The below Planned Maintenance activity schedule is only indicative and not exhaustive, it is therefore the duty of the contractor to update the Activity Schedule, one (1) month from the date of assuming responsibility as the contracted Service Provider)**

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

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## **Annexure 2.1**

### **Electrical Lights and Power Planned Maintenance Activity Schedule**

(Please note: The below Planned Maintenance activity schedule is only indicative and not exhaustive, it is therefore the duty of the contractor to update the Activity Schedule, one (1) month from the date of assuming responsibility as the contracted Service Provider)

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL001

## SIX MONTHLY MAINTENANCE AND SERVICE REPORT FOR DISTRIBUTION BOARDS

Building number: .....

Unit Description: Distribution Board.

Place: .....

Inventory Number: .....

Floor:-..... Room:-.....Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION	
1	Clean enclosure and equipment installed by means of blower and approved electrical cleaner. Special attention to dirt and dust accumulation on top of circuit breakers and connection terminals.	13	Check that only one earth wire per terminal are connected on the earth bar and correct were needed	
2	Check lamp replacement history and take corrective measures where needed.	14	Check main earth from supplier, star point of the transformer, measure and record continuity (Ohm). Loop impedance test	Ohm
3	Tighten all connection for mechanical soundness and electrical continuity	15	Prospective short circuit current	kA
4	Check for hot spots by means of Infrared Thermometer and repair where needed	16	Check that all panel instruments and metering equipment are in working order and replace if needed	
5	Check all earthing connections. Measure and <b>record</b> earth continuity to determine if earthing is within safety specification (Ohm). Record worst case	17	Check that insulated conductors are supported and not resting on bare conductive parts and correct were needed	
6	Test elevated voltage on supply neutral and record (Volts)	18	Check that jumpers from buss bars to switchgear are the required size and current carrying capacity	
7	Test earth leakage test button to ensure operation of earth leakage unit. (After working hours)	19	Check light operation in the enclosure and rectify if needed	
8	Check if the surge protection is functioning and replace if needed	20	Check labels and legend for correctness and update if needed	
9	Check if the heat dissipation in distribution board is sufficient and that there is no heat build-up by means of Infrared Thermometer.	21	Check that all switchgear and circuits are labelled correctly.	
10	Check if phase barriers are in place and replace if needed	22	Check that all covers and panels are in place, there is no access to live parts and all screws fitted.	
11	Check that the minimum creeping and clearance distances are correct and rectify if needed	23	Check all panels and doors are in good condition and replace if needed	
12	Check that only one wire per terminal are connected on the neutral bar and correct were needed	24	Ensure the distribution board is locked and return keys	

**Notes:**-Report on remedial work undertaken, faults found, replacement and repairs required:

Service Technician;

Name..... Signature..... Date.....

Employer Representative:

Name..... Signature..... Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL002

**ONCE OFF MAINTENANCE AND SERVICE ON LIGHTING AND EXTRA LOW VOLTAGE LIGHTING INSTALLATION.**

Building number: .....

Unit description: Lighting

Place: .....

Inventory Number: .....

Floor:-..... Room:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Check that only fourteen 6 amp un-switched socket outlets are connected on a circuit and correct were needed.		6	Check Low voltage transformers operation and reprogram if needed	
2	Check that only one light fitting is connected per un-switched socket outlet.		7	Check wire sizes on low voltage lighting transformers to ensure that volt drop is within specification	
3	Measure and record the longest earth path from the distribution board. (Ohm)		8	Check the sum of the lamp wattage against the size of the transformer. It must not exceed 90% of the transformer rating.	
4	Check un-switched socket outlets for damage ,and that it is securely mounted and rectify were needed	Ohm	9	Check that lamp heat dissipation in ceiling voids are sufficient	
5	Check that all un switched socket outlets are labelled and correct where needed.		10	Check emergency light fittings for operation and battery performance. Replace batteries if needed	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature..... Date.....

Employers Representative:

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL003

## SIX MONTHLY MAINTENANCE AND SERVICE REPORT FOR ELECTRICAL CONTROL BOX / PANELS

Building number: .....

Unit description: Control Box / Panel

Place: .....

Inventory Number: .....

Floor:-..... Room:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Clean enclosure and equipment installed by means of blower and approved electrical cleaner. Special attention to dirt and dust accumulation on top of circuit breakers and connection terminals.		10	Check if phase barriers are in place and replace if needed	
2	Tighten all connection for mechanical soundness and electrical continuity		11	Check that the minimum creeping and clearance distances are correct and rectify if needed	
3	Check for hot spots by means of Thermal Imager and repair were needed		12	Check that all panel instruments and metering equipment are in working order and all equipment properly installed, replace if needed	
4	Check all earthing connections. Measure and <b>record</b> earth continuity to determine if earthing is within safety specification (Ohm). Record worst case	Ohm	13	Check that insulated conductors are supported and not resting on bare conductive parts and correct were needed	
5	Check enclosure for weather proof seals , latches and hinges for operation and repair if needed		14	Check that jumpers from buss bars to switchgear are the required size and current carrying capacity	
6	Check for rust and treat with a approved rust inhibitor and repaint to original specification		17	Check that all covers and panels are in place, there is no access to live parts and all screws fitted.	
7	Check that all switchgear and circuits are labelled		18	Check that all panels and doors are in good condition and replace if needed	
8	Check if the surge protection is functioning and replace if needed		19	Ensure the control box is locked and return keys	
9	Check if heat dissipation in control box is sufficient and there is no heat build up by means of Thermal Imager				

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician;

Name.....Signature.....Date.....

Employers Representative:

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL004

## QUARTERLY MAINTENANCE AND SERVICE REPORT FOR SUBSTATION EQUIPMENT

Building number: .....

Unit description: Substation

Place: .....

Inventory Number: .....

Floor:-..... Room:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
1	On entering substation sign the log book.	8	Check oil level on HT transformers and report low oil levels.
2	Check that all covers and panels are in place and there is no access to live parts.	9	Check silica gel colour and report if moisture content discoloured silica gel. (Blue is the preferred colour.)
3	Clean substation and equipment installed by means of feather duster and damp cloth.	10	Check temperature to ensure that heat dissipation is sufficient.
4	Check lighting inside substation and repair if needed.	11	Check extractor fan for operation and repair if needed.
5	Check indication lamps on HT panels and replace if needed.	12	Clean inside and outside of substation building and remove all grass and bush if needed. (where applicable)
6	Check batteries electrolyte level, cleanliness of terminals and charging rate off charger.	13	Sign lock book and ensure that the substation is locked before departure.
7	Check for oil leaks on HT transformers and report if needed		

**Notes:**-Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature.....Date.....

Employers Representative:

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

**EL005**

## ANNUAL MAINTENANCE AND SERVICE REPORT FOR SUBSTATION EQUIPMENT

**Building number:** .....

**Unit description:** Substation

**Place:** .....

**Inventory Number:** .....

**Floor:-..... Room:-..... Block:-..... Core:-..... Link:-.....**

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
1	On entering substation sign the log book.	10	Clean transformer and insulators with Tri-chloroethylene or approved cleaning agent.
2	Open all covers and where possible remove dust	11	Take transformer oil samples for testing and submit report.
3	Trip and rack out HT circuit breakers. Cleanout in-closer and service circuit breakers to manufacturers specifications.	12	Check oil level and top up if needed.
4	Trip test HT circuit breaker with secondary injection through the protection relays.	13	Check Silica Gel and replaced when colour changed from blue.
5	Test HT voltage transformers for correct operation.	14	Check earthing in substation and correct where needed
6	Verify voltage and current loads to instrumentation.	15	Clean inside and outside of substation building and remove all grass and bush if needed. (where applicable)
7	Conduct scanning on total substation installation by means of a Thermal Imager and repair where needed.	16	Check substation for compliance with the occupational health and safety act
8	Service batteries and test battery trip unit for correct operation.	17	Sign off the lock book and lock substation
9	Test transformer temperature and gas operating relay (buchholz) alarms and trip to check operation.		

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature.....Date.....

Employers Representative:

Name.....Signature.....Date.....

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL006

### ANNUAL TESTING OF MEDIUM AND HIGH VOLTAGE SUBSTATION EQUIPMENT

Building number: \_\_\_\_\_ Place code: \_\_\_\_\_

Medium and High Voltage Substation - Test Sheet														
Name: .....														
Designation: ..... CB No.....														
Panel No: ..... Date: ..... Nature:R/C:.....														
<b>Definite Minimum Inverse Time (D.T.M.I.T) RELAY</b>								<b>SOLKOR R/TRANSLAY</b>						
<b>CT RATIO</b>								<b>CT RATIO</b>						
V	R Amp		Y Amp		B Amp			V	R Amp		Y Amp		B Amp	
<b>POLARITIES:</b>								<b>PILOT CABLE</b>						
O/L SETTING: A/% T.M.S.								Loop resistance: Ω						
E/L SETTING: A/% T.M.S.								Insulation resistance:						
<b>RELAY TESTED PRIM / SEC / TW. INJECTION</b>								T1 – E: Ω						
MULTIPLE								T2 – E: Ω						
O/L R ph								T1 – T2: Ω						
O/L Y ph														
O/L B ph														
E/L														
Of P.C.S	A	Sec	A	Sec	A	Sec	A	Sec						
2									<b>OVERALL FAULT SETTING</b>					
4									FAULT	T.W./	A	B	AC	OPERA
6									SEC.A	mA	mA	mA	mA	TION%
<b>INSTANTANEOUS RELAY</b>								R - E						
O/L Setting								E/L Setting						
R ph. Trips at A								Y - E						
Y ph. Trips at A								B - E						
B ph. Trips at A								R - Y						
								B - Y						
<b>BUCHOLZ RELAY</b>								R - B						
Relay trip & lock-out CB. Give indication.								CURRENT BETWEEN					RELAY OUTPUT	
<b>TEMPERATURE RELAY</b> °C								R – E					1.10A V	
Relay trip & lock-out CB. Give indication.								Y – E					1.40A V	
<b>FRAME LEAKAGE RELAY:</b>								B – E					2.99A V	
V	1A	2A	3A	ZONE	1	2	3	R – Y					4.50A V	
				TYPE				B – Y					4.50A V	
				PLUG				R – B					2.25A V	
				P/Amp				RELAY TYPE:						
				TRIPS				SETTING:						
				RATIO				<b>RESISTANCE MEASUREMENTS</b>						
								ZONE		1	2	3		
								E						
TEST SPIKES:								Ohm		1				
EARTH MAT:								Ohm		2				

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

Service Technician:

Name.....Signature.....Date.....



**TESTING OF MEDIUM AND HIGH VOLTAGE TRANSFORMERS**

Building number: \_\_\_\_\_ Place code: \_\_\_\_\_

SUBSTATION: \_\_\_\_\_ DATE: \_\_\_\_\_

TRANSFORMER: \_\_\_\_\_

MAKE: \_\_\_\_\_ KVA: \_\_\_\_\_

SERIAL NO: \_\_\_\_\_ VOLTAGE: \_\_\_\_\_

DATE OF MANUFACTURE: \_\_\_\_\_ VECTOR: \_\_\_\_\_

**INSULATION RESISTANCE TEST: 2 500 V MEGGER** (2mΩ/kV = Good norm)

EARTH TO HT: \_\_\_\_\_ HT TO LT1: \_\_\_\_\_

EARTH TO LT1: \_\_\_\_\_ HT TO LT2: \_\_\_\_\_

EARTH TO LT2: \_\_\_\_\_ HT TO AUX.: \_\_\_\_\_

EARTH TO AUX.: \_\_\_\_\_ LT1 TO LT2: \_\_\_\_\_

LT2 TO AUX.: \_\_\_\_\_ LT1 TO AUX.: \_\_\_\_\_

**VOLTAGE RATIO TEST: 3 PHASE GENERATOR**

SUPPLY VOLTAGE (3 phase) \_\_\_\_\_ V

LT1:

Primary	Secondary	TAP 1	TAP 2	TAP 3	TAP 4	TAP 5
		V	V	V	V	V
		V	V	V	V	V
		V	V	V	V	V

LT2:

Primary	Secondary	TAP 1	TAP 2	TAP 3	TAP 4	TAP 5
		V	V	V	V	V
		V	V	V	V	V
		V	V	V	V	V

AUXILIARY:

Primary	Secondary	TAP 1	TAP 2	TAP 3	TAP 4	TAP 5
		V	V	V	V	V
		V	V	V	V	V
		V	V	V	V	V

AT TAP No 3: CALCULATED RATIO = HT/LT = \_\_\_\_\_ / \_\_\_\_\_ = \_\_\_\_\_

MEASURED VALUE = SUPPLY V / MEASURED V = \_\_\_\_\_ / \_\_\_\_\_ = \_\_\_\_\_

TESTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL008

### ONCE OFF MAINTENANCE AND SERVICE ON POWER-SKIRTING INSTALLATION

Building number: .....

Unit description: Power skirting

Place: .....

Inventory Number: .....

Floor:-..... Room:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Check that only eight socket outlets are connected on a circuit and correct where needed		5	Check legend for correctness and update if needed	
2	Check earth for floating earth and repair if needed.		6	Check all dedicated, normal socket outlets and air conditioner isolator for damaged and replace where needed.	
3	Measure and record longest earth path from distribution board (Ohm)	Ohm	7	Close all covers and inspect for visible damage and repair if needed.	
4	Check that all socket outlets and circuits are labelled				

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician;

Name.....Signature.....Date.....

Employers Representative:-

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL010

### MONTHLY MAINTENANCE AND SERVICE REPORT OF UPS EQUIPMENT

Building number:

Unit description: UPS

Place code:

Inventory Number: .....

Floor:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Verify and record all alarms before inspection.		5	Check operation of all cooling fans	
2	Record the UPS output voltage on all three phases.	R W B	6	Check cables for overheating and damage	
3	Check that all panel instruments and metering equipment are in working order and replace if needed		7	Clean inside of the enclosure by means of vacuum cleaner	
4	Check free space around, or objects on top of the unit and that all air vents are free from any obstructions. Remove all objects where needed.		8	Check batteries electrolyte and top up if needed.	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician;

Name.....Signature.....Date.....

Client's Representative:-

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL011

### QUARTERLY MAINTENANCE AND SERVICE REPORT OF UPS EQUIPMENT

Building number:

Unit description: UPS

Place code:

Inventory Number: .....

Floor:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Verify and record all alarms before inspection.		8	Check electrolytic capacitors for leaks and deforming	
2	Measure and record the battery float charge voltage.		9	Check magnetic components for overheating delaminating and firmly secured.	
3	Measure and record the battery charge voltage.		10	Check cables for overheating and damage.	
4	Measure and record the battery charge current.		11	Clean printed circuit boards and replace if needed.	
5	Measure and record the UPS output voltage on all three phases.	R W B	12	Clean inside of enclosure	
6	Measure and record the UPS output line currents on all three phases.	R W B	13	Check batteries electrolyte and top up if needed	
7	Check that all panel instruments and metering equipment are in working order and replace if needed		14	Check and clean battery terminals.	
	<b>Isolate the UPS from the mains and batteries. Switch on bypass switch and do the following:</b>		15	Reconnect the UPS and transfer the load to the inverter following the appropriate operating procedure	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature.....Date.....

Client's Representative:

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL012

### ANNUAL MAINTENANCE AND SERVICE REPORT OF UPS EQUIPMENT

Building number:

Unit description: UPS

Place code:

Inventory Number: .....

Floor:-..... Block:-..... Core:-..... Link:-.....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Verify and record all alarms before inspection.		23	Check control panel calibration	
2	Measure and record the battery charge voltage.		24	Check operation of manual by pass switch	
3	Measure and record the battery float voltage.		25	Perform operational test on operation at normal load	
4	Measure and record the battery charge current.		26	Perform operational test on overload checks	
5	Measure and record the UPS output voltage on all three phases.	R W B	27	Perform operational test on simulation of faults	
6	Measure and record the UPS output line currents on all three phases.		28	Perform operational test on loss of input.	
7	Check that all panel instruments and metering equipment are in working order and replace if needed		29	Perform operational test on manual and automatic transfers	
	<b>Isolate the UPS from the mains and batteries. Switch on bypass switch and do the following:</b>		30	Perform operational test on all alarm shutdown functions	
8	Check electrolytic capacitors for leaks and deforming test and record capacity		31	Check UPS leg gate signals	
9	Check magnetic components for overheating delaminating and firmly secured		32	Check charger DC walk up	
10	Examine all cables for burnt or loose connections and tighten all connections to specification.		33	Check charger DC waveform and holding voltage	
11	Check cables for signs of chaffing, overheating and damage		34	Check power supply voltages and frequency in control cabinet	
12	Check inside the UPS for hotspots with Thermal Imager, repair when needed and clean enclosure		35	Check AC and DC protection settings	
13	Check all UPS air intakes, exhausts, cooling fans including all filters		36	Check UPS synchronization	
14	Inspect the UPS for physical damage and worn or corroded parts		37	Check the phasing between the mains and UPS	
15	Clean printed circuit boards and replace if needed		38	Check the UPS current limits	
16	Check batteries electrolyte and top up if needed.		39	Check that static switch can be switched between preferred and alternative source without disconnecting the load.	
17	Check and clean battery terminals		40	Check all switch distribution and make sure they are in working order.	
18	Reconnect the UPS and transfer the load to the inverter following the appropriate operating procedure		41	Inspect the cleanliness of the switch.	
19	Check for liquid contamination		42	Check the air intakes of the switch and remove any obstructions	
20	Check the UPS output waveforms				

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

Service Technician;

Name.....Signature.....Date.....

Client's Representative:-

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

EL013

### WEEKLY MAINTENANCE AND SERVICE REPORT FOR BATTERY CHARGER SET

Building number: .....Inventory Number: .....

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION	
1	Record battery charging voltage.				
2	Isolate battery charger on panel.				
3	Record battery voltage on the panel.				
4	Check and Record electrolyte level in each cell and top up. Where applicable.				
5	Clean each cell, remove corrosion where necessary NB. Record SG level where applicable.				
6	Start generator and record the time for battery voltage to return to original reading.				
7	Switch charger back on and close cover.				
	Record voltage and amps				
8	Leave area clean and tidy.				
9					

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature.....Date.....

Client's Representative:

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

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## **Annexure 2.2**

### **Mechanical and Plumbing Planned Maintenance Activity Schedule**

**(Please note: The below Planned Maintenance activity schedule is only indicative and not exhaustive, it is therefore the duty of the contractor to update the Activity Schedule, one (1) month from the date of assuming responsibility as the contracted Service Provider)**

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

**M001**

**WEEKLY MAINTENANCE AND SERVICE REPORT FOR SEWER PITS AND PUMPS**

**Building number:** ..... **Location:** .....

No	MAINTENANCE INSTRUCTION	√
1	Employ bollards or similar equipment to safe guard manhole openings.	
2	Check each manhole and clean where necessary	
3	Operate transfer switch and panel	
4	Operate second nearest float switch. Check that the alarm relay operates and was recorded at Data Centre. (Switch to run for at least one minutes)	
5	Operate the second lowest float switch. Check that one pump starts and remains on.	
6	Operate the highest float switch. Check and ensure that both pumps run.	
7	Operate the lowest float switch. Check that both pumps switch off.	
8	Check the sump pump inside pit. Operate the float switch. Ensure that the pump is operating correctly	
9	Bearing Lubrication; Inspect, clean, adjust, repair or replace as necessary and record	
10	Seal Lubrication and packing; Inspect, clean, adjust, repair or replace as necessary and record	
11	Remove all solids in the pit	
12	Cover manholes. Ensure that the seal is in position and bolts are secure.	
13	Leave area clean and tidy.	
14	Replace and report any broken covers	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature.....Date.....

Client's Representative:

Name.....Signature.....Date.....



Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

**M002**

### MONTHLY MAINTENANCE AND SERVICE REPORT FOR SEWER PITS AND PUMPS

Building number: .....Location: .....

No	MAINTENANCE INSTRUCTION	√
1	Employ bollards or similar equipment to safe guard manhole openings.	
2	Check each manhole and clean where necessary	
3	Operate transfer switch and panel	
4	Operate second nearest float switch. Check that the alarm relay operates and was recorded at Data Centre. (Switch to run for at least one minutes)	
5	Operate the second lowest float switch. Check that one pump starts and remains on.	
6	Operate the highest float switch. Check and ensure that both pumps run.	
7	Operate the lowest float switch. Check that both pumps switch off.	
8	Check the sump pump inside pit. Operate the float switch. Ensure that the pump is operating correctly	
9	Bearing Lubrication; Inspect, clean, adjust, repair or replace as necessary and record	
10	Seal Lubrication and packing; Inspect, clean, adjust, repair or replace as necessary and record	
11	V-Belts; Inspect, clean, adjust, repair or replace as necessary and record (If equipped)	
12	Air release valve plunger rod; Inspect, clean, adjust, repair or replace as necessary and record (If equipped)	
13	Remove all solids in the pit	
14	Cover manholes. Ensure that the seal is in position and bolts are secure.	
15	Leave area clean and tidy.	
16	Replace and report any broken covers	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician;

Name.....Signature.....Date.....

Client's Representative:-

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

**M003**

## SIX MONTHLY MAINTENANCE AND SERVICE REPORT FOR STORM / RAIN WATER PITS AND PUMPS

Building number: .....Location: .....

No	MAINTENANCE INSTRUCTION	√
1	Employ bollards or similar equipment to safe guard manhole openings.	
2	Check each manhole and clean where necessary	
3	Operate transfer switch and panel	
4	Operate second nearest float switch. Check that the alarm relay operates and was recorded at Data Centre. (Switch to run for at least one minutes)	
5	Operate the second lowest float switch. Check that one pump starts and remains on.	
6	Operate the highest float switch. Check and ensure that both pumps run.	
7	Operate the lowest float switch. Check that both pumps switch off.	
8	Check the sump pump inside pit. Operate the float switch. Ensure that the pump is operating correctly	
9	Infrared scan pump bearing and impeller for hot spots and vibrations. Record temperature/ findings	
10	Bearing Lubrication; Inspect, clean, adjust, repair or replace as necessary and record	
11	Seal Lubrication and packing; Inspect, clean, adjust, repair or replace as necessary and record	
12	V-Belts; Inspect, clean, adjust, repair or replace as necessary and record (If equipped)	
13	Air release valve plunger rod; Inspect, clean, adjust, repair or replace as necessary and record (If equipped)	
14	Inspect, clean, adjust, repair or replace as necessary and record front impeller clearance (If equipped)	
15	Inspect, clean, adjust, repair or replace as necessary and record rear impeller clearance (If equipped)	
16	Remove all solids in the pit	
17	Cover manholes. Ensure that the seal is in position and bolts are secure.	
18	Leave area clean and tidy.	
19	Replace and report any broken covers	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician;

Name.....Signature.....Date.....

Client's Representative:-

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

**M004**

## ANNUAL MAINTENANCE AND SERVICE REPORT FOR SEWER PITS AND PUMPS

Building number: .....Location: .....

No	MAINTENANCE INSTRUCTION	√
1	Employ bollards or similar equipment to safe guard manhole openings.	
2	Check each manhole and clean where necessary	
3	Operate transfer switch and panel	
4	Operate second nearest float switch. Check that the alarm relay operates and was recorded at Data Centre. (Switch to run for at least one minutes)	
5	Operate the second lowest float switch. Check that one pump starts and remains on.	
6	Operate the highest float switch. Check and ensure that both pumps run.	
7	Operate the lowest float switch. Check that both pumps switch off.	
8	Check the sump pump inside pit. Operate the float switch. Ensure that the pump is operating correctly	
9	Bearing Lubrication; Inspect, clean, adjust, repair or replace as necessary and record	
10	Seal Lubrication and packing; Inspect, clean, adjust, repair or replace as necessary and record	
11	V-Belts; Inspect, clean, adjust, repair or replace as necessary and record (If equipped)	
12	Air release valve plunger rod; Inspect, clean, adjust, repair or replace as necessary and record (If equipped)	
13	Inspect, clean, adjust, repair or replace as necessary and record front impeller clearance (If equipped)	
14	Inspect, clean, adjust, repair or replace as necessary and record rear impeller clearance (If equipped)	
15	Inspect, clean, adjust, repair or replace as necessary valves and record (If equipped)	
16	Inspect, clean, adjust, repair or replace as necessary pressure relief valve (If equipped)	
17	Inspect, adjust, repair or replace as necessary pump and driver alignment (If equipped)	
18	Inspect, clean, adjust, repair or replace as necessary bearings	
19	Inspect, clean, bearing housing and record	
20	Remove all solids in the pit	
21	Cover manholes. Ensure that the seal is in position and bolts are secure.	
22	Leave area clean and tidy.	
23	Replace and report any broken covers	

**Notes:-**Report on remedial work undertaken, faults found, replacement and repairs required:

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Service Technician:

Name.....Signature.....Date.....

Client's Representative:

Name.....Signature.....Date.....

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

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## **Annexure 2.3**

### **Planned Maintenance Activity Schedule**

**(Please note: The below Planned Maintenance activity schedule is only indicative and not exhaustive, it is therefore the duty of the contractor to update the Activity Schedule, one (1) month from the date of assuming responsibility as the contracted Service Provider)**

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 1

### CONSOLE UNIT – QUARTERLY MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION			
1	Remove inside cover, clean air filters and if damaged replace filter.		8	Check unit supply air diffusers for damages or air-flow obstruction. Also check unit air intake to ensure free air path with no obstruction.			
2	Clean unit front casing (inside and outside) and grilles. Re-install air filters correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction.		9	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation, check electrical supply cable and isolator to ensure clean and safe power supply.			
3	Check thermostat for position, condition, bracketing and test operation.		10	Check that the condensate drain works adequately with no condensate leaks and or damage to components.			
4	Switch fan to low, medium and high speed and check operation. Also check for vibration.		11	Check and record unit:		Heating	Cooling
					Volts		
					Amps		
5	Switch thermostat control to cooling and check cooling operation and check for abnormal noise and vibration.		12	Check that all grilles are secure and in position, check unit casing for damages and check that unit is properly and rigidly attached to the wall.			
6	Switch fan to low, medium and high speed and check operation. Also check for vibration.		13	Check and record air-flow temperatures °C		Supply:	
						Return:	
7	Switch thermostat control to heating and check heater operation and also check for any abnormal conditions.						

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 2

### CONSOLE UNIT – ANNUAL MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
1	Remove the unit from the wall casing, record location, unit number and serial number and transport unit to the workshop for a major service in accordance with the following items.	14	Check and rectify all insulation, replace where necessary.
2	Check for gas leaks, repair and top-up with refrigerant as required.	15	Check cooling and heating cycle.
3	Clean air filter or replace filter if necessary.	16	Return unit to the correct location as recorded in No. 1.
4	Chemically (liquid soap) pressure clean condenser coil and comb if necessary.	17	Clean out wall sleeve, check and insure that condenser air divider plates or rubber spacers are in good condition and in place to prevent condenser air bypass.
5	Chemically (liquid soap) pressure clean evaporator coil and comb if necessary.	18	Slide unit into sleeve and fit rigidly to the wall or wall spacer. Ensure that unit slope backwards to prevent condensate water leaks to the inside of the room.
6	Clean condensate drip tray / sump and drain and check for damage to components.	19	Check unit supply air diffusers for damages or air-flow obstruction. Also check unit air intake to ensure free air path with no obstruction.
7	Clean unit casing (inside and outside) and components.	20	Check and reconnect electrical supply cable and isolator to ensure safe power supply and test unit.
8	Check for rust spots, clean, treat and paint if required.	21	Switch fan to low, medium and high speed and check operation. Also check for vibration.
9	Clean and check condenser fan for operation vibration and noise.	22	Switch thermostat control to cooling and check cooling operation. Also check for abnormal noise and vibration.
10	Clean and check evaporator fan for operation, vibration and noise.	23	Switch thermostat control to heating and check heater operation. Also check for any abnormal conditions.
11	Check compressor for operation, vibration and noise and correct if required. Check compressor mountings and replace if necessary.	24	Check and record air-flow temperatures °C
12	Check thermostat for position, condition, bracketing and test operation.	25	Check and record unit:
13	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.		

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

### Activity Schedule 3

### SPLIT UNIT (Mid-Wall, Under-Ceiling, Ceiling Cassette, Hideaway) –

### QUARTERLY MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION			
A	<b>Indoor Unit (Evaporator)</b>		B	<b>Outdoor Unit (Condenser)</b>			
A1	Remove air filters, clean and re-install correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction.		B1	Check and record refrigerant pressures:- (according to temperature)		Pressure	Temperature
					HP		
					LP		
A2	Check thermostat for position, condition, bracketing and test operation.		B1.1	If refrigerant level is low, trace and repair leak and top-up with refrigerant.			
A2.1	Switch to cooling and check cooling cycle.		B2	Check and clean condenser coil and comb if necessary.			
A2.2	Switch to heating and check heating cycle.		B3	Check for correct condenser air path and ensure that unit is free from any obstruction and recirculation.			
A2.3	Check and adjust thermostat set-points.		B4	Clean and check condenser fan for operation vibration and noise and correct if necessary.			
A3	Clean and check evaporator fan for operation, vibration and noise and rectify if necessary.		B5	Check compressor for operation, vibration and noise and rectify if necessary.			
A4	Clean and check evaporator coil and comb if necessary		B6	Check and repair refrigerant pipe insulation damage, repair and vapour seal if required.			
A5	Clean condensate drip tray and drain pipe, check for free flow of condensate, check for damage to components.		B7	Check electrical wiring, switchgear and controls for hot connections and correct operations rectify if necessary, check component condition and operation.			
A6	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.		B8	Check and record unit:		Heating	Cooling
					Volts		
					Amps		
A7	Check air grilles and diffusers for condition, clean, correct position and adjustment.		B9	Clean unit casing (inside and outside), components and grilles.			
A8	Check unit for abnormal noise and vibration and rectify if necessary.		B10	Check hail guards.			
A9	Clean unit casing (inside and outside), components and grilles.		B11	Check unit mountings, mounting brackets and correct if necessary.			
A10	Check and record air-flow temperatures °C	Supply:	B12	Refit all inspection panels and covers and re-fix screws, bolts and nuts and replace if necessary.			
		Return:					

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 4

### SPLIT UNIT (Mid-Wall, Under-Ceiling, Ceiling Cassette, Hideaway) – ANNUAL MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION			
A	<b>Indoor Unit (Evaporator)</b>		B	<b>Outdoor Unit (Condenser)</b>			
A1	Remove air filters, clean and re-install correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction.		B1	Check and record refrigerant pressures:- (according to temperature)		Pressure	Temperature
A2					HP		
A3					LP		
A4	Check for gas leaks, repair and top-up with refrigerant as required.		B1.1	If refrigerant level is low, trace and repair leak and top-up with refrigerant.			
A5	Open, clean and check evaporator coil and comb if necessary.		B2	Check for correct condenser air path and ensure that unit is free from any obstruction and recirculation.			
A6	Check and clean evaporator fan blades, check operation, vibration and noise and rectify if necessary.		B3	Open, check and chemically (liquid soap) pressure clean condenser coil and comb if necessary.			
A6.1	Clean condensate drip tray and treat for corrosion if necessary, clean condensate drain pipe and check for free flow of condensate.		B4	Check and clean condenser fan blades, check operation, vibration and noise and rectify if necessary.			
A6.2	Check thermostat for position, condition, bracketing and test operation.		B5	Check compressor for operation, vibration and noise and rectify if necessary.			
A6.3	Switch to cooling and check cooling cycle.		B6	Check compressor and unit mountings and mounting brackets and rectify if necessary.			
A7	Switch to heating and check heating cycle.		B7	Check refrigerant pipe insulation damage, repair and vapour seal if required.			
A8	Check and adjust thermostat set-point.		B8	Clean unit casing (inside and outside), components and grilles.			
A9	Clean unit casing (inside and outside) and components.		B9	Check electrical wiring, switchgear and controls for hot connections and correct operation and rectify if necessary, check component condition and operation.			
A10	Check refrigerant pipe insulation damage, repair and vapour seal if required.		B10	Check and record unit:		Heating	Cooling
A11					Volts		
					Amps		
A12	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.		B11	Check hail guards.			
A13	Check air grilles and diffusers for condition, clean, correct position and adjustment.		B12	Refit all inspection panels and covers and re-fix screws, bolts and nuts and replace if necessary.			
A14	Check and record air-flow temperatures °C	Supply:					
A15		Return:					

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc. \_\_\_\_\_

Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 5

### CHILLED-WATER CEILING CASSETTE – QUARTERLY MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
1	Remove air filters, clean and re-install correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction.	5	Check that feeler bulb is not damaged and is in the correct position, rectify if necessary.
2	Check condensate pump, clean drip tray, condensate drain and rectify if necessary, check for damage to components.	6	Check for abnormal noise and vibration and rectify if necessary.
3	Check chilled water pipes for leaks, damaged insulation and condensate from pipes. Clean, dry insulate and vapour seal as required.	7	Check all air vents in pipe systems and make sure that chilled water systems including cooling coils are free of air and air pockets.
4	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.	8	Clean unit casing and grilles.
5	Check condition and operation of thermostat and control:-	9	Reinstall all inspection panels, covers and re-fix all screws, bolts and nuts and replace if necessary.
5.1	Switch to cooling and check operation of chilled water control valve.	10	Check that ceiling panels around the unit are clean and fitted properly.
5.2	Switch to heating and check operation of chilled water control valve and heater.	11	Check and record air-flow temperatures °C
5.3	Check and adjust thermostat set-point.		Supply: _____ Return: _____

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 6

### CHILLED-WATER CEILING CASSETTE - ANNUAL MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
1	Remove air filters, clean and re-install correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction	9	Set the control to full cooling and check and record the following at the same time:
2	Check condensate pump, clean condensate drip tray and treat for corrosion if necessary, clean condensate drain pipe and check for free flow of condensate.	9.1	Cooling valve % open %
3	Clean unit cooling coil.	9.2	Chilled water entering and leaving temperature °C Entering Leaving
4	Clean unit casing and grilles.	9.3	Cooling coil air entering and leaving temperature °C Entering Leaving
5	Check all electrical and control wiring terminations for solid and clean connections and repair all hot and loose connections.	10	Check for abnormal noise and vibration and rectify if necessary.
6	Check and test all safeties and safety interlocks.	11	Check chilled water piping for water leaks, damaged insulation and condensate from pipes. Clean, dry insulate and vapour seal as required.
7	Check condition and operation of thermostat and control:-	12	Check for deterioration and rust spots, clean treat with rust proof detergent and paint.
7.1	Switch to cooling and check operation of chilled water control valve.	13	Check all air vents in pipe systems and make sure that chilled water systems including cooling coils are free of air and air pockets.
7.2	Switch to heating and check operation of chilled water control valve and heater.	14	Reinstall all inspection panels, covers and re-fix all screws, bolts and nuts and replace if necessary.
7.3	Check and adjust thermostat set-point.	15	Check that ceiling panels around the unit are clean and fitted properly.
8	Check that feeler bulb is not damaged and is in the correct position, rectify if necessary.	16	Check and record air-flow temperatures °C Supply: Return:

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 7

### CHILLED-WATER FAN-COIL UNIT – QUARTERLY MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION											
1	Remove air filter, clean properly and re-install. Check the condition of the filter material and report to client if replacement is required.		7	Check unit supply air diffusers for damages or air-flow obstruction. Also check unit air intake to ensure free air path with no obstruction.											
2	Clean unit front casing (inside and outside) and grilles. Re-install air filters correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction.		8	Check electrical wiring and controls for hot connections and correct operations, correct if required, check component condition and operation, check electrical supply cable and isolator to ensure clean and safe power supply.											
3	Check thermostat for position, condition, bracketing and test operation.		9	Check that the condensate drain works sufficient with no condensate leaks and or damage of the components. Clean condensate pan and drain piping if required.											
4	Switch fan to low, medium and high speed and check operation. Also check for vibration.		10	Check and record unit	<table><tr><td></td><td>Heating</td><td>Cooling</td></tr><tr><td>Volts</td><td></td><td></td></tr><tr><td>Amps</td><td></td><td></td></tr></table>		Heating	Cooling	Volts			Amps			
	Heating	Cooling													
Volts															
Amps															
5	Switch thermostat control to full cooling and check chilled water three way valve and cooling operation, also check for abnormal noise and vibration.		11	Check that all grilles are secure and in position, check unit casing for damages and check that unit is properly and rigidly fitted to the wall.											
6	Switch fan to low, medium and high speed and check operation. Also check for vibration.		12	Check and record air-flow and temperatures across cooling coil °C	<table><tr><td>Air onto coil °C:</td></tr><tr><td>Supply air °C:</td></tr></table>		Air onto coil °C:	Supply air °C:							
Air onto coil °C:															
Supply air °C:															

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 8

### CHILLED-WATER FAN-COIL UNIT – ANNUAL MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION			
1	Remove air filter, clean properly and re-install. Check the condition of the filter material and report to client if replacement is required.		8	Check unit supply air diffusers for damages or air-flow obstruction. Also check unit air intake to ensure free air path with no obstruction.			
2	Clean unit front casing (inside and outside) and grilles. Re-install air filters correctly and ensure that filter frame and media is fitted properly without by-pass or obstruction.		9	Check electrical wiring and controls for hot connections and correct operations, correct if required, check component condition and operation, check electrical supply cable and isolator to ensure clean and safe power supply.			
3	Check thermostat for position, condition, bracketing and test operation.		10	Check that the condensate drain works sufficient with no condensate leaks and or damage of the components. Clean condensate pan and drain piping if required.			
4	Switch fan to low, medium and high speed and check operation. Also check for vibration.		11	Check and record unit		Heating	Cooling
					Volts		
					Amps		
5	Switch thermostat control to full cooling and check chilled water three way valve and cooling operation, also check for abnormal noise and vibration.		12	Check that all grilles are secure and in position, check unit casing for damages and check that unit is properly and rigidly fitted to the wall.			
6	Switch fan to low, medium and high speed and check operation. Also check for vibration.		13	Check and record air-flow and temperatures across cooling coil °C	Air onto coil °C:		
					Supply air °C:		
7	Clean cooling coil fins and tubes		14	Check for deterioration, rusted metal parts and clean, rustproof treat and paint if required			

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 9

### DUCTED PACKAGE UNIT – MONTHLY MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION			
1	Remove air filters, clean and re-install correctly and ensure that filter frame and media is fitted properly with no by-pass or obstruction.		18	Calibrate control thermostat.			
2	Check condensate drain and rectify if necessary.		19	Check operation of solenoid valves / cooling steps.			
3	Check condition and operation of thermostat and controls.		20	Clean Condenser coil.			
4	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.		21	Clean Evaporator coil.			
5	Check electrical supply cable and isolator to ensure safe power supply.		22	Inspect Evaporator motor and fan bearings, lubricate if necessary.			
6	Check and record each circuit:- Condenser outlet air temperature at discharge of each running condenser fan.		23	Evaporator: Check fan drives, V-belt condition and alignment and correct or replace if required.			
7	Check starter contactors and switchgear.		24	Evaporator: Clean unit casing (inside and outside), sump and components.			
8	Check Condenser fan for operation, vibration and noise and rectify if necessary.		25	Condenser: Test operation of high pressure switch.			
9	Check Evaporator fan for operation, vibration and noise and rectify if necessary.		26	Condenser: Test operation of low pressure switch.			
10	Check compressor for operation, vibration and noise and rectify if necessary.		27	Check air grilles and diffusers for condition, correct position and adjustment.			
11	Check cooling cycle.		28	Check and repair air leaks on ducting.			
12	Check heating cycle.		29	Check flexible duct connections for leaks and repair as required. Check all diffusers and flexible ducting for correct and free air flow paths.			
13	Check for gas leaks, repair and top-up with refrigerant if required.		30	Check duct insulation and repair all damaged insulation.			
14	Check pipe insulation for damage, repair and vapour seal if required.		31	Evaporator: Check unit casing and make sure that all panels and joints seal properly.			
15	Check safeties.		32	Check condition of all metal sections and take preventative care on any deterioration. De-rust, treat with rust proof detergent and paint as required.			
16	Check unit and unit casing, clean and position properly if required.		33	Check refrigerant flow across liquid line filter driers and suction filters and replace if required.			
17	Check thermostat sensing bulb for position and bracketing.		34	Check and record refrigerant pressures:- (according to temperature)		Pressure	Temperature
					HP		
					LP		

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

No	MAINTENANCE INSTRUCTION				No	MAINTENANCE INSTRUCTION			
DUCTED PACKAGE UNIT – MONTHLY						Activity Schedule Page 2			
35	Check and record air-flow temperatures. °C	Supply:			37	Check and log air quality reading.			
		Return:							
36	Check unit amperage and voltage against manufacturer's data.		Volts	Amps	38	Reinstall all inspection panels and covers and re-fix all screws, bolts and nuts and replace if necessary.			
		Red							
		White							
		Blue							

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 10

### DUCTED PACKAGE UNIT – ANNUAL MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION			
1	Remove air filters, clean and re-install correctly and ensure that filter frame and media is fitted properly with no by-pass or obstruction.		18	Calibrate control thermostat.			
2	Check, chemically (liquid soap) clean condensate drain and rectify if necessary.		19	Check operation of solenoid valves / cooling steps.			
3	Check condition and operation of thermostat and controls.		20	Chemically (liquid soap) clean condenser coil.			
4	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.		21	Chemically (liquid soap) clean evaporator coil.			
5	Check electrical supply cable and isolator to ensure safe power supply.		22	Evaporator: Inspect motor and fan bearings, lubricate if necessary.			
6	Check and record each circuit:- Condenser outlet air temperature at discharge of each running condenser fan.		23	Evaporator: Check fan drives, V-belt condition and alignment and correct or replace if required.			
7	Check starter contactors and switchgear.		24	Evaporator: Clean unit casing (inside and outside), sump and components			
8	Check Condenser fan for operation vibration and noise and rectify if necessary.		25	Condenser: Test operation of high pressure switch.			
9	Check Evaporator fan for operation, vibration and noise and rectify if necessary.		26	Condenser: Test operation of low pressure switch.			
10	Check compressor for operation, vibration and noise and rectify if necessary.		27	Check air grilles and diffusers for condition, correct position and adjustment.			
11	Check cooling cycle.		28	Check and repair air leaks on ducting.			
12	Check heating cycle.		29	Check flexible duct connections for leaks and repair as required. Check all diffusers and flexible ducting for correct and free air flow paths.			
13	Check for gas leaks, repair and top-up with refrigerant if required.		30	Check duct insulation and repair all damaged insulation.			
14	Check repair for pipe insulation damage, repair and vapour seal if required.		31	Evaporator: Check unit casing and make sure that all panels and joints seal properly.			
15	Check safeties.		32	Check condition of all metal sections and take preventative care on any deterioration. De-rust, treat with rust proof detergent and paint as required.			
16	Check unit and unit casing, clean and position properly if required.		33	Check refrigerant flow across liquid line filter driers and suction filters and replace if required.			
17	Check thermostat sensing bulb for position and bracketing.		34	Check and record refrigerant pressures:- (according to temperature)		Pressure	Temperature
					HP		
					LP		

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
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Contract number:

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
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DUCTED PACKAGE UNIT – ANNUAL Activity Schedule Page 2

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 11

### EXTRACTION FAN UNIT – MONTHLY MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION	No	MAINTENANCE INSTRUCTION
1	Check electrical wiring and controls for hot connections and correct operation, rectify if necessary, check component condition and operation.	8	Check bolts not corroded and fastened.
2	Check electrical supply cable and isolator to ensure safe power supply. Check starter contactors and switchgear.	9	Check condition of anti-vibration mountings and replace if necessary.
3	Check air grilles and diffusers for condition, correct position and adjustment.	10	Clean unit casing.
4	Check fan for operation, vibration and noise and rectify if necessary.	11	Check and clean air vents.
5	Check condition of all metal sections and take preventative care on any deterioration. De-rust, treat with rust proof detergent and paint as required.	12	Clean plant room and floor.
6	Check and repair air leaks on ducting.	13	Replace all inspection panels and covers and re-fix all screws, bolts and nuts and replace if necessary.
7	Check housing of extractor fan not damaged and if support brackets are secure.		

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Activity Schedule 12****COLD / FREEZER ROOMS – MONTHLY MAINTENANCE & SERVICE REPORT**

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION		
A	<b>Indoor Unit (Evaporator)</b>		B	<b>Outdoor Unit (Condenser)</b>		
A1	Check for gas leaks, repair and top-up with refrigerant as required.		B1	Check and record refrigerant pressures:- (according to temperature)	Pressure	Temperature
					HP	
					LP	
A2	Clean condensate drip tray and treat for corrosion if necessary, clean condensate drain pipe and check for condensate free flow		B2	Check for correct condenser air path and ensure that unit is free from any obstruction and recirculation		
A3	Check defrost element for operation		B3	Check compressor for operation, vibration and noise and correct if required		
A4	Check thermostat for position, condition, bracketing and test operation.		B4	Check compressor and unit mountings and mounting brackets and correct if required.		
A5	Check and adjust thermostat set-point		B5	Check refrigerant pipe insulation for damage, repair and vapour seal if required		
A6	Clean unit casing and components inside and outside.		B6	Check hail guards		
A7	Check refrigerant pipe insulation for damage, repair and vapour seal if required		B7	Refit all inspection panels and covers and re fix screws, bolts and nuts and replace if necessary.		
A8	Check and record air-flow temperatures °C	Supply:				
		Return:				

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Transnet Property

Contract number:

Description of the Works: Provision of Preventative, Corrective and Emergency plus minor new works for electrical lights and power, civil, general building, and plumbing services for Saldanha to Loop 12 (Loeriesfontein and surrounding areas) on an as and when required basis.

## Activity Schedule 13

### COLD / FREEZER ROOMS – ANNUAL MAINTENANCE & SERVICE REPORT

Building No: \_\_\_\_\_ Place Code: \_\_\_\_\_ Building Name: \_\_\_\_\_

Unit Description: \_\_\_\_\_ Serial No: \_\_\_\_\_ Inventory No: \_\_\_\_\_

Location: \_\_\_\_\_ Floor: \_\_\_\_\_ Block: \_\_\_\_\_ Core: \_\_\_\_\_ Link: \_\_\_\_\_ Other: \_\_\_\_\_

No	MAINTENANCE INSTRUCTION		No	MAINTENANCE INSTRUCTION		
A	Indoor Unit (Evaporator)		B	Outdoor Unit (Condenser)		
A1	Check for gas leaks, repair and top-up with refrigerant as required.		B1	Check and record refrigerant pressures:- (according to temperature)	Pressure	Temperature
					HP	
					LP	
A2	Open, clean and check evaporator coil and comb if necessary		B2	Check for correct condenser air path and ensure that unit is free from any obstruction and recirculation		
A3	Check and clean evaporator fan blades, check operation, vibration and noise and correct if required		B3	Open, check and chemically pressure clean condenser coil with liquid soap and comb if necessary		
A4	Clean condensate drip tray and treat for corrosion if necessary, clean condensate drain pipe and check for condensate free flow		B4	Check and clean condenser fan blades, check operation, vibration and noise and correct if required.		
A5	Check defrost element for operation		B5	Check compressor for operation, vibration and noise and correct if required		
A6	Check thermostat for position, condition, bracketing and test operation.		B6	Check compressor and unit mountings and mounting brackets and correct if required.		
A7	Check and adjust thermostat set-point		B7	Check refrigerant pipe insulation for damage, repair and vapour seal if required		
A8	Clean unit casing and components inside and outside.		B8	Check electrical wiring, switchgear and controls for hot connections and correct operations and correct if required, check component condition and operation.		
A9	Check refrigerant pipe insulation for damage, repair and vapour seal if required		B9	Check hail guards		
A10	Check electrical wiring and controls for hot connections and correct operations, correct if required, check component condition and operation.		B10	Refit all inspection panels and covers and re fix screws, bolts and nuts and replace if necessary.		
A11	Check and record air-flow temperatures °C	Supply: Return:				

**Notes:** Report on faults identified, remedial action, replacements, repairs required, etc.

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Service Technician

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client's Representative

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_