

## Scope of Work

Scope of work shall include:

- Sludge handling and management producing a minimum of 15% dry solids
  - This shall include the provision of the necessary lifting equipment and skips (with necessary cover/enclosure) to enable disposal
- Provision of a detailed design report and Functional Design Specifications (FDS).
- Two-day design review and HAZOP 3 study.
- Provision of full operation and maintenance manuals.
- Commissioning and operating of the plant for four weeks without interruptions to ensure desired effluent quality.
- Construction of new access road
- Provision of security gate house
- Provision of a perimeter fence
- The scope of electrical work will start from the provided bulk Eskom supply point on-site.
- Provide potable water supply system by connecting to an existing system of supply. The contractor is to investigate and find nearby tapping point for supply. This must be done in conjunction with main municipal of the area for the purpose of billing and metering.

Further to the above, a Professional Service Provider registered with ECSA will be required for the Civil, Process, and Mechanical and Electrical designs, preparation of specifications, Bill of Quantities and site supervision and monitoring.

Table 1: Design Discharge Standards

Parameter	Unit	Typical SA Domestic*	Influent (Adopted for Design)	Effluent (Special Limit)
pH		6.0 - 8.5	7.3	5.5 - 7.5
Chemical Oxygen Demand (COD)	mgCOD/l	500 - 800	800	30
Total Kjeldahl Nitrogen (TKN)	mgN/l	35 - 80	57	
Ammonia (NH <sub>3</sub> )	mgN/l	30 - 60	45	2
Nitrate/Nitrite (NO <sub>3</sub> /NO <sub>2</sub> )	mgN/l	-	-	1.5
Total Phosphorous (TP)	mgP/l	8 - 18	13	
Ortho Phosphate (PO <sub>4</sub> )	mgP/l	-	-	1 (median) and 2.5 (max)
Total Suspended Solids (TSS)	mg/l	270 - 450	360	10
Chlorine as Free Chlorine (mg/l)		-	-	0
Soap, oil and grease	mg/l			0
Faecal Coliforms (per 100 ml)	counts			0
Electrical Conductivity	mS/m)			50 mS/m above background receiving water to a maximum of 100 mS/m
Minimum Temperature	°C	10 - 15	12	
Maximum Temperature	°C	20 - 30	28	
Alkalinity (as CaCO <sub>3</sub> )	mg/l	200 - 300	250	

### PS 3 DESCRIPTION OF SITE AND ACCESS

The project area is located in Hilton in the uMgungundlovu District Municipality approximately 25km North West of Pietermaritzburg in KwaZulu-Natal.

The site co-ordinates are as follows:

(-29.5307975, 30.2830028)

### PS 4 NATURE OF GROUND AND SUBSOIL CONDITIONS

A detailed Geotechnical Investigation was undertaken by Syncline Geotechnical Engineering (Pty) Ltd and the findings are presented in a Geotechnical Investigation Report dated 30 September 2019.

An extract from the Geotechnical Investigation Report conclusion reads:

*"The geology of the study area is characterised by silty colluvial soils, clayey residual soils and shale bedrock of the Volksrust Formation. Weathered bedrock occurs at depths typically in the range 1.5 to 2.5 metres below EGL.*

*Moderate groundwater seepage was encountered during the field investigation at depths typically in the range 7.0 to 8.0 metres below EGL. Even though the proposed foundation level for the pump station is higher than the groundwater level, it is recommended that the groundwater level be controlled by Exclusion method (should this be encountered).*

*It is considered that the site is stable and suitable for development provided that the recommendations given in this report are adhered to. No signs of inherent ground instability such as slip scars, tension cracks or sloughing of the soils were evident during the fieldwork.*

*All earthworks should be carried out in a manner to promote stable development of the site. It is recommended that earthworks be carried out along the guidelines given in SANS 1200 (current version).*

*It is considered that the subsoils from 0.0 to 3.0 metres depth will classify as SOFT in terms of SANS 1200DA criteria. It is anticipated that excavations from 3.0 to 5.0 metres will classify as INTERMEDIATE. Excavations below 5.0 metres classify as HARD and will require the use of pneumatic tools and possibly blasting.*

*The foundation level for the pump station will be approximately 5.5 metres below EGL, and on weathered shale bedrock. Considering the above, a nett allowable bearing pressure of up to 300kPa is considered feasible for foundation design.*

*The bottom of the foundation excavation should be devoid of any loose material. Total settlement is likely to be 5 - 10mm with differential settlement taken as 50% of the total settlement."*

### PS 5 DRAWINGS

#### PS 5.1 Drawings Prepared by Employer

The drawings listed in the table below were prepared and issued by the Employer for tendering purposes. They are issued separately to this document and must be regarded as provisional and preliminary for Tenderers to generally assess the scope of work. The characters in the "Rev. No." column below indicate the revision status of these drawings.

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## PS 6 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

SANS 1921-1 General engineering and construction works  
SANS 1921-2 Accommodation of Traffic on Public Roads

The associated specification data are as follows:

Clause	Specification data associated with SANS 1921- 1
	<b>Essential Data</b>
4.1.7	The requirements for drawings, information and calculations for which the Contractor is to be responsible is detailed in the project specifications.
4.2.1	The responsibility strategy assigned to the Contractor for the works is <b>C</b> .
4.3	<p>The planning, programme and method statements are to comply with the following:</p> <ol style="list-style-type: none"> <li>1) The programme shall be prepared in bar (Gantt) chart form, preferably using a project management software tool such as <i>Microsoft Project</i> and shall be issued to the Employer's Agent in both hard copy and electronic format. The programme shall be structured to cover all items of work conceivable including all work to be done by Sub-Contractors and shall clearly indicate the critical path</li> <li>2) The programme must clearly show the intermediate milestone dates to be achieved taking the indicative construction sequences into account.</li> <li>3) In addition to any other constraints the construction sequence and timing shall take into account the current pump station, gravity main and Rising project</li> <li>4) Regular meetings must be held with the Employer's Agent.</li> <li>5) Method statements shall be prepared in accordance with the requirements of the project specifications.</li> </ol>
4.3.3	The period of notice shall be a minimum of <b>one working day</b> . <b>Etc.</b>
	<b>Variations</b>
All relevant	In all clauses where it appears, replace the word "Employer" with "Employer's Agent"
4.1.10	Where reference is made to "SANS 2001", substitute with "SABS 1200"
	<b>Additional Clauses</b>
4.6 (e)	Managing and disposing of water will include for by-pass arrangements, of temporary earthworks, cofferdams, pumping equipment, well-pointing, de-watering equipment etc. for dealing with all possible flows whether or not the existing flow path is being interfered with during installation of pipework.
4.7.4	No blasting will be permitted within 10m of any structure, pipeline or service unless the Contractor can satisfy the Employer's Agent that his proposed blasting methods and controls are such that no damage will be caused to the adjoining structure, pipeline or service. The Contractor will be required to provide equipment for and take vibro-recordings at no additional cost to the Employer.
4.8.1	The Contractor shall be responsible for protection from damage to any structures or services that might be affected by the excavations or works. The Contractor shall, before submitting his tender, carefully study the tender drawings and inspect on site the routes of the proposed pipelines and structures to be constructed in close proximity to existing structures and services and make due allowance in his rates for protection of structures and services by use of special construction methods such as close shoring, sheet piling.

**PS 7 CONSTRUCTION PROGRAMME** *(Read with SANS 1921-1:2004 Clause 4.3)*

**PS 7.1 Preliminary Programme**

The preliminary programme submitted as part of the Tender Returnable Documents shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

Tenderers may submit tenders for an alternative Time for Completion in addition to a tender based on the specified Time for Completion. Each such alternative tender shall include a preliminary programme similar to the programme above for the execution of the works, and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

**PS 7.2 Programme in Terms of Clause 5.6 of the General Conditions of Contract**

It is essential that the construction programme, which shall conform in all respects to Clause 5.6 of the General Conditions of Contract, be furnished within the time stated in the Contract Data. The preliminary programme to be submitted with the tender shall be used as basis for this programme. The Contractor's attention is also drawn to Clause 5.7.3 of the General Conditions of Contract 2015.

The Contractor shall indicate on the programme all critical path activities. In this regard, the Contractor's attention is drawn to Clause 5.12 of the General Conditions of Contract, where consideration will only be given to claims for extension of time associated with critical path activities.

The Contractor's attention is drawn to PS 6 Clause 4.3

**PS 8 SITE FACILITIES AVAILABLE**

**PS 8.1 Contractor's Site Establishment** *(Read with SANS 1921 - 1: 2004 Clause 4.14)*

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and labourers. The contractor is to refer to Construction Regulation 2014 clause 30

**PS 8.2 Accommodation of Employees and Transportation**

The contractor must provide accommodation for his employees and ensure that they are transported safely back and forth from their place of residing during the period of construction. The contractor must ensure that the employees have suitable meals whilst in their accommodations to ensure that they are able to perform their duties without risking their health. The contractor is to refer to Construction Regulation 2014 clause 30

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**PS 8.3 Power, Water and other Services**

The Supplier/Contractor shall make his own arrangements concerning the supply of electrical power and water or any other services such as internet, airtime, etc. The cost thereof shall be deemed to be included in the rates and amounts tendered for those specific items, or in the Suppliers/Contractors Preliminary and General rates, as the case may be.

**PS 8.3 Laboratories, Materials, Testing Equipment and Facilities**

The contractor must ensure that his rates include transportation and hiring of all tests, equipment and tools that may be required for the works. Test should be done to the satisfaction of the Engineer/ Employer's Agent and the Quality Assurance team of Umgeni Water and this should be included in the rates tendered.

**PS 9 SITE FACILITIES REQUIRED**

**PS 9.1 Employer's Agent's Office**

Refer to the amendments to the Standardized Specifications PSAB 3.2 to PSAB 5.5

The Employer's Agent office shall be deemed to include tea, coffee, sugar and milk as SANS 1200 AB specifies the requirement of having cups and cattle facilities. The tea should be rooibos, coffee should be Jacobs and milk should be both powder milk and long life milk (liquid). This should be considered to be included in the rates of the contractor and should be maintained for the period of the contract.

Meeting rooms should be an 8m x 4m room with a table that can accommodate 20 people. The room must have a presentation board which can allow a projector to be used when dealing with online meetings. The contractor must provide a projector that will connect wireless in order to enable online meetings. All on site meeting should be provided with lunch if they are progress meetings.

**PS 9.2 Rented Accommodation**

With the instruction from the Employer's Agent, the Contractor is to provide the following rented accommodation for the Employer's Agent Rep/Assistants and his team for the entire duration of the contract in accordance to Umgeni Water policy:

- A suitable fully furnished rental with two or more bedrooms with plumbing, electricity, DSTV and air-conditioner.
- Weekly cleaning and laundry service
- Within reasonable distance from the construction site of about less than 20km radius or as per instruction of the Employer's Agent.

**PS 9.3 Vehicle for Employer's Agent**

With the instruction from the Employer's Agent, the contractor is to provide one vehicle meeting the following specification for sole use of the Employer's Agent and his team:

**Technical Specification**

A latest model raised body, 4x4 all-wheel drive, 2.8 diesel double cab pick-up with no more than 20 000 on odometer. (Hilux Legend 50, or similar UW specification).

**Mileage**

The Contractor is to pay for fuel and maintenance of the vehicle based on usage of 5000 km per week for the duration of the contract. The vehicles are to be maintained to the satisfaction of the Employer's Agent by the Contractor.

**PS 10 OCCUPATIONAL HEALTH AND SAFETY** *(Read with SANS 1921 - 1: 2004 Clause 4.18 and the Particular Specification for Construction Health and Safety)*

**PS 10.1 General Statement**

It is a requirement of this Contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end, the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) (OHASA), and the Construction Regulations 2014 issued under Section 43 of the OHASA by the Minister of Labour.

For the purpose of this Contract, the Contractor is required to confirm his status as mandatary of the Employer for the execution of the Contract by entering into an agreement with the Employer in terms of the OHASA by executing the Agreement under C1.5 included in Section C1: Agreements and Contract Data.

**PS 10.2 Health and Safety Specifications and Plans to be submitted at Tender Stage**

- (a) Employer's Health and Safety Specification  
The Employer's Health and Safety Specification will be included in the tender documents as part of the Project Specifications.
- (b) Contractor's Health and Safety Plan  
The Occupational Health and Safety Plan should be submitted at tender stage so as enable the Employer to determine whether the Contractor is capable of fulfilling the requirements of Construction Regulation 5(1)(h).

The successful Tenderer shall, on receipt of notification that he has been awarded the contract, submit without delay his own documented Health and Safety Plan for the execution of the work under the Contract. His Health and Safety Plan must at least cover the following:

- (i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Construction Regulations 7 to 30 inclusive;
- (ii) pro-active identification of potential hazards and unsafe working conditions;
- (iii) provision of a safe working environment and equipment;
- (iv) statements of methods to ensure the health and safety of Sub-Contractors, employees and visitors to the site, including safety training in hazards and risk areas;
- (v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
- (vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works;
- (vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014; and
- (viii) all other information and documentation that is required by the Employer, the Employer's Agent, or the agent who acts as a representative for the Employer, in order to enable the Employer to apply for a construction work permit in terms of Construction Regulation 3(1) (if required by law).

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or his agent appointed as contemplated under the relevant provisions of the Construction Regulations 2014, and the Contractor's Health and Safety Plan may be required to be amended if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan, and before the requirements of Construction Regulation 3, or Construction Regulation 4, as applicable, have been complied with.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, or any failure on the part of the Contractor to submit the required information or documentation in support of the application for a construction work permit (in terms of Construction Regulation 3), or failure to give notification of construction work (in terms of Construction Regulation 4), as applicable, shall not be used as a reason to claim for extension of time or standing time and related costs.

### **PS 10.3 Cost of Compliance with the OHASA and Construction Regulations 2014**

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) (OHASA), the Construction Regulations 2014, and the Employer's Health and Safety Specification as applicable to this Contract.

Should the Contractor fail to comply with any of the provisions of the OHASA, Construction Regulations 2014, or Employer's Health and Safety Specification, he shall be liable for penalties as provided for in any of the aforementioned documents.

Items that may qualify for remuneration will be specified in the Health and Safety Specifications, or in the Project Specifications.

### **PS 11 ENVIRONMENTAL MANAGEMENT**

A provisional sum has been included in the Bill of Quantities for the environmental maintenance to be carried out by a 'selected' sub-contractor that has been informed by the Umgeni Water Particular Specification for Environmental Management and the Environmental Management Plan.

Refer to SANS 1921-1:2004 Clause 4.19 and PS 6 Clause 4.19.3 and to PS11 above

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### **PS 12 SELECTED SUB-CONTRACTORS**

Selected Sub-Contractors (refer to GCC 2015 Clause 4.4) shall be chosen and appointed as follows:

The Employer will prepare a detailed scope of work and/or specification for work to be done or goods to be supplied by a Selected Sub-Contractor.

The Employer and the Contractor will compile a list of firms or persons acceptable to both and who will be invited by the Contractor to submit tenders for the requisite work to be carried out or goods to be supplied by Selected Sub-Contractors. When the tenders are received they will be evaluated and the Employer will then indicate which tender he requires the Contractor to accept and he will advise the Contractor accordingly. The Contractor shall then accept that Tenderer and appoint him/her as a Selected Sub-Contractor.

The Contractor shall incorporate in the sub-contract, provisions that:



In respect of the work carried out or the goods that are the subject of the sub-contract, the Selected Sub-Contractor undertakes to the Contractor *mutatis mutandis* the obligations and liabilities as are imposed upon the Contractor to the Employer in terms of the Contract, and holds the Contractor harmless from and indemnifies him against the same and in respect of all claims, demands, lawsuits, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities, and

The Selected Sub-Contractor shall also hold the Contractor harmless from and indemnify him against:

- Shortcomings in the sub-contract work if and where the work was designed by the Selected Sub-Contractor;
- Defects in the goods if and where the goods were manufactured and / or supplied by the Selected Sub-Contractor;
- Any negligence by the Selected Sub-Contractor, his / her Agents, workmen and servants;
- Any misuse by the Selected Sub-Contractor of any Constructional Plant, Temporary Works or materials provided by the Contractor for the purposes of the Contract; and
- Any claims as aforesaid.

## **PS 13 ELECTRICAL**

### **PS 13.1 Description of Services**

Selected Sub-Contractors (refer to GCC 2015 Clause 4.4) shall be chosen and appointed as follows: The services associated with the Hilton N3 Corridor Fully Automated WWW Package Plant include design, construction and contract administration:

- Design, submit and presentation of the Plant's Electrical and Instrumentation for approval:
  - Development of the instrumentation list,
  - Development of equipment list,
  - Development of Instrument data sheets,
  - Development of Equipment data sheets,
  - Development of Single-line diagrams,
  - Development of General Arrangement (GA's),
  - Development of loop diagrams,
  - Development of I.O. load list,
  - Development of Cable schedules,
- Design and develop the SCADA, PLC Control System (Network Architecture Design and Configuration) and Telecommunication and present for approval.
  - Submission and presentation of the preliminary design for approval
  - Submission and presentation of the final design for approval
  - Development of the Plant Functional Design specification (FDS)
  - Submission and presentation of the FDS for approval
  - Submission and presentation of the final FDS for approval

- Submission and presentation of the PLC and SCADA for approval, including Mpophomeni PLC and SCADA modifications.
- Development and submission of the Plant SCADA Navigation and Document
- Earthing and lightning protection system (LPS) design and documentation
- Submission and presentation of the reports for LPS for approval
- Telecommunication study between the new Packaging plant and Mpophomeni control room, submit and present report
- CCTV, fire protection and access control system
- Power Application to Eskom including submission of all required documentations, application forms and preparations on site.
- Construction
  - Contract Administration and Inspection
  - Construction Monitoring
  - Adhere to Umgeni Water QA requirements throughout the construction
  - Submission of equipment data sheets, samples for approval before purchase
  - Submission of construction drawings
  - Submission of Safety file for Construction work
  - Conduct Factory Acceptance tests for the MCC, Standby generator set, motors & Motor starters, Plant PLC and SCADA FAT and SAT including Documentation, licenses, software's e.t.c.
  - Supply and installation of approved equipment
- Testing and commissioning
  - Prepare, submit and present system acceptance test documents for approval
  - Adhere to Umgeni Water QA requirements for testing and commissioning.
  - Testing of all supplied equipment and submission of tests results in an O&M manual to be used as a baseline of the project. These tests shall cover the entire system performance.
  - Commissioning and facilitating of trainings covering maintenance and operation of all electrical equipment, instrumentation including PLC, SCADA and telecommunication system.
  - Submission of Plant O&M manuals for the Plant Electrical, Control and Instrumentation systems and Electrical COC as per UW O&M Specification.

### **PS 13.2 Project Specifications**

The scope of work and project specification (PS) forms an integral part of the contract and supplements the Standard Specifications and Umgeni Water Particular Specifications. It contains a general description of the works, the site and the requirements to be met.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Scope of Work and PS, the Scope of work and PS shall take precedence. In all events, the discrepancy shall be brought to the attention of the Employer's Agent before the execution of the work under the relevant item.

- The PSP shall prepare detailed lightning protection and earthing design for the new Hilton N3 Corridor WWW packaging plant structures.

- The PSP shall develop the reports for LPS for approval
- Supply and installation of the approved LPS design.
- Design the Plant Electrical, Instrumentation (instrumentation list, equipment list, Instrument data sheets, Equipment data sheet, single line diagrams, General Arrangement, loop diagrams, I.O. load list, Cable schedule), SCADA and PLC Control System (Network Architecture Design and Configuration) and Telecommunicating.
- The PSP shall submit and present the preliminary design for approval
- The PSP shall submit and present the final design for approval
- The PSP shall develop the Plant Functional Design specification (FDS)
- The PSP shall submit and present the FDS for approval
- The PSP shall submit and present the final FDS for approval
- The PSP shall perform the Plant PLC and SCADA FAT and SAT present documentation
- The PSP shall submit and present the PLC and SCADA for approval
- The PSP shall develop the Plant SCADA Navigation and Document
- Upon approval, the PSP shall construct the Package Plant in accordance with the relevant SANS standards and Umgeni Water Specifications.
- The PSP shall submit the Plant O&M manuals for the Plant Electrical, Control and Instrumentation systems and Electrical COC as per UW O&M Specification.
- The PSP shall apply for Power Supply from Eskom

### **PS 13.3 Quality Assurance**

- The Service Provider must have an ISO 9001 quality management system or equivalent in place.

Note a Quality plan and method of the statement shall be submitted to Umgeni Water Quality Department and the minimum following requirements shall be in the file;

- Detailed Method of statement
  - Site organogram, with CVs showing qualifications, and experience in executing the duties to be performed in this project.
  - Company profile and company certificates, i.e. Company valid
  - Registration with COID/Workman Compensation – Department of Labour.
  - Project program
  - Quality plan for this particular project
- Making good Defects

The Contractor shall be responsible for making good any defect in or damage to any part of the Works which may appear or occur during the Defects Liability Period and which arises from, either:

- Any defective materials, workmanship or design, or
- Any act or omission of the Contractor during the Defects Liability Period.

The Contractor shall make good the defect or damage as soon as practicable and at his own cost.

- Failure to Remedy Defects

If the Contractor fails to remedy a defect or damage within a reasonable time, Umgeni Water may fix a final time for remedying the defect or damage. If the Contractor fails to do so, Umgeni Water may:

- Carry out the work himself or by others at the Contractor's risk and cost, provided that he does so in a reasonable manner.
- In remedying the defect or damage shall be deducted from the Contract Price, but the Contractor shall have no responsibility for such work,

- Removal of Defective Work

If the defect or damage is such that repairs cannot be expeditiously carried out on the Site, the Contractor may with the consent of the Project Leader or Umgeni Water remove from the Site for the purposes of repair any part of the Works, which is defective or damaged

#### **PS 13.4 Environmental Management**

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the environmental management plan.

Refer to SANS 1921-1:2018

#### **PS 13.5 Occupational Health and Safety**

- General Statement

It is a requirement of this Contract that the PSP shall provide a safe and healthy working environment and direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end, the PSP shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) (OHASA), and the Construction Regulations 2014 issued under Section 43 of the OHASA by the Minister of Labour.

For the purpose of this Contract, the PSP is required to confirm his status as mandatary of the Employer for the execution of the Contract by entering into an agreement with the Employer in terms of the OHASA by executing the Agreement under C1.5 included in Section C1: Agreements and Contract Data.

- Health and Safety Specifications and Plans to be submitted at the Tender Stage:

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specifications will be included in the tender documents as part of the Project Specifications.

(b) Contractor's Health and Safety Plan

The Occupational Health and Safety Plan should be submitted at the tender stage to enable the Employer to determine whether the Contractor is capable of fulfilling the requirements of Construction Regulation 5(1) (h).

The successful Tenderer shall, on receipt of notification that he has been awarded the contract, immediately submit his own documented Health and Safety Plan for the execution of the work under the Contract. His Health and Safety Plan must at least cover the following:

- (i) A proper risk assessment of the works, risk items, work methods and procedures in terms of Construction Regulations 7 to 30 inclusive;
- (ii) Pro-active identification of potential hazards and unsafe working conditions;
- (iii) Provision of a safe working environment and equipment;
- (iv) Statements of methods to ensure the health and safety of Sub-Contractors, employees and visitors to the site, including safety training in hazards and risk areas;
- (v) Monitoring health and safety on the site of works on a regular basis, and keeping records and registers as provided for in the Construction Regulations;
- (vi) Details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works;
- (vii) Details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014; and
- (viii) All other information and documentation that is required by the Employer, the Employer's Agent, or the agent who acts as a representative for the Employer, in order to enable the Employer to apply for a construction work permit in terms of Construction Regulation 3(1) (if required by law).

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or his agent appointed as contemplated under the relevant provisions of the Construction Regulations 2014, and the Contractor's Health and Safety Plan may be required to be amended if necessary, before the commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan, and before the requirements of Construction Regulation 3, or Construction Regulation 4, as applicable, have been complied with.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, or any failure on the part of the

Contractor to submit the required information or documentation in support of the application for a construction work permit (in terms of Construction Regulation 3), or failure to give notification of construction work (in terms of Construction Regulation 4), as applicable, shall not be used as a reason to claim for extension of time or standing time and related costs.

- Safety file

The Tenderer shall prepare a safety plan before the commencement of any work on site. A file index shall be issued to the Tenderer by Umgeni Water SHEQ representative with all UW safety requirements, below is a typical example of the minimal items required in the safety file:

- (a) Addendum, COVID-19 SHE Compliance Review Contractors (Refer to Annexure C5.2)
- (b) Construction Work permits as issued by the DOL (where applicable – As per Construction Regulations - CR3 Annexure 1). Proof from the Department of Labour to be attached, (where applicable)
- (c) Notification of construction work (As per Construction Regulations CR 4, Annexure 2). Proof from Department of Labour to be attached, (where applicable)
- (d) Principal Contractor appointment letter (CR5) (1)(k) (where applicable)
- (e) Project specific organogram
- (f) Section 37(2) with Umgeni Water and all Subcontractors (signed copy and initial all pages by both parties at bottom right)
- (g) Umgeni Water Rules of Contractors/ Suppliers/Service Providers & Agents (CSSA) issued, explained and signed by both Contractor Rep and UW Representative
- (h) All Legal appointments applicable to project, and/or as described by the Construction Regulations – 2014. Should circumstances change during the duration of the project, appointments shall be undertaken and updated.
- (i) Medical certificate of fitness by Occupational Health Practitioner in Annexure 3 format  
Clear copy of Identity Document for ALL persons assigned to the Project
- (j) Sample of an Identity Access Card with Company Name, Employee photo, ID Number  
Name and Surname (For Capex & permanent contractors (i.e. cleaning and security)
- (k) Valid Letter of good standing from Compensation Commissioner or approved Institutions  
(e.g. FEMA and RMA) by the Commissioner's office
- (l) Letter of Good standing verified by Umgeni Water employee
- (m) Contractor Company SHE Policy
- (n) Project-Specific Health and Safety Plan
- (o) Safe Work Method statements for all activities listed in the scope of work and those profiled in the activity-based risk assessment.
- (p) Baseline Risk assessment (based on the scope of work to include activity/task Health and Safety hazards and environmental aspects, raw risk controls in place and risk rating

(i.e. High/ Medium/Low) of residual risk (i.e. status of risk after implementing controls for projects defined in Section 3.1(a) of the OHSAct, 1993

- (q) Applicable plans / drawings (where applicable)
- (r) Fall Protection Plan (Where applicable)
- (s) Excavation Plan (Where applicable)
- (t) Demolition Plan (Where applicable)
- (u) Equipment certificates and service records of machinery
- (v) Calibration records (where applicable)
- (w) Inspection Registers/ Checklists for all machinery/ equipment and hand tools brought to site
- (x) Emergency response plan including Emergency contact numbers
- (y) Incident management Procedure
- (z) Environmental Management Plan – to include rehabilitation plans during and after completing the project.
- (aa) Personal Protective Equipment (PPE) Issue Register (copy) with signatures of employees confirming receipt
- (bb) Training Plan - Proof that employees have been trained in the use of PPE
- (cc) Induction material and proof of induction (site induction by Contractor and/ or Umgeni Water induction) to employees assigned to Project
- (dd) Training certificates and proof of competencies for Project Team
- (ee) Hazardous Chemical Inventory List including Safety Data Sheet in 16-point format
- (ff) Applicable Permits, authorizations/ licenses (where applicable)
- (gg) COVID 19 risk assessment as per Umgeni Water Addendum: COVID19 SHE Compliance template.

- Cost of Compliance with the OHASA and Construction Regulations 2014

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) (OHASA), the Construction Regulations 2014, and the Employer's Health and Safety Specification as applicable to this Contract.

Should the Contractor fail to comply with any of the provisions of the OHASA, Construction Regulations 2014, or Employer's Health and Safety Specification, he shall be liable for penalties as provided for in any of the aforementioned documents. Items that may qualify for remuneration will be specified in the Health and Safety Specifications, or in the Project Specifications.

#### **PS14 GUIDELINES FOR THE RECRUITMENT OF LOCAL LABOUR FOR THE IMPLEMENTATION OF WATER INFRASTRUCTURE PROJECTS**

##### **PS 14.1. INTRODUCTION:**

Umgeni Water's approach is to balance the continued provision of reliable bulk water supply to existing customers with growth whilst ensuring rural development through reduction of

backlogs, extending water access and supporting vulnerable municipalities. Umgeni Water uses local labour as its preferred work force to facilitate skills transfer and economic support to local communities. These guidelines aim to provide Contractors with the necessary information on the procedures to be followed for the successful recruitment of labour whilst implementing Umgeni Water's Infrastructure projects.

#### **PS14.2. COMMUNICATION REQUIREMENTS**

It is crucial that all communication between various stakeholders in the project be made clear, concise and understandable. All communication is to be recorded in writing and filed for records and auditing. Prior to commencement with labor recruitment, a briefing session will be held with the contractor with the aim of

- establishing communication channels for all site staff
- understanding the roles and responsibilities of the following role players:
  - Project Liaison Committee (PLC)
  - Community Liaison Officer (CLO)
  - Labor desk committee

The contractor must at this stage communicate plans to bring skilled employees to create trust and to assist integration of employees from outside the area.

The Institutional Support and Development (ISD) Facilitator in the employ of Umgeni Water is the major link between the project and the community. The Contractor shall not engage directly with the community without the involvement of the ISD.

#### **PS 14.3. DETERMINATION OF LABOUR REQUIREMENTS**

Umgeni Water as a state owned enterprise is expected to contribute to the government's short-medium term programmes aimed at alleviating and reducing unemployment. These guidelines are applicable in conjunction with the agreed scope of work as established in the contract and in alignment to the planned programme of works. The contractor determines labour requirements and adheres to the following guidelines: -

The Contractor shall through the Institutional Support and Development (ISD) Facilitator inform in writing the following

- i. The type of Skills required
- ii. The amount of work to be completed
- iii. The expected duration of the contract or period for which the labor will be required
- iv. Targeted labor or number of labor to be employed (both semi-skilled and unskilled)

The contractor shall not undertake own recruitment or import semi -skilled and unskilled labour without exhausting local pool of available resources as provided by the recruitment process.

#### **PS 14.4. QUALIFICATIONS FOR EMPLOYMENT FOR LOCAL UNSKILLED LABOUR**

- Men and women over the age 18-60years
- Women to be given equal employment opportunities
- A person who is physically and mentally sound
- A person who demonstrate good conduct in the community



- Community members with skills and found competent to be considered
- A person with a valid South African ID
- Both genders be considered
- Young people be considered
- All families to benefit. Members of the same family should not be employed at the same time.
- Children and family members of PLC members will not receive preferential treatment.
- PLC members who want to be employed in the project must withdraw their PLC membership.

#### **PS 14.5 QUALIFICATION FOR EMPLOYMENT OF THE COMMUNITY LIAISON OFFICER**

The Community Liaison Officer (CLO) will be recommended by the Ward Councillor, PLC and approved by Umgeni Water and should have the following qualities:

- minimum Std 10 (Grade 12);
- must have credibility and standing in community;
- must have a strong personality;
- must be able to facilitate disputes;
- must be able to handle conflict;
- must be able to keep minutes and records in a proper and orderly way;
- must have knowledge of what labour laws and industrial relations are (training will be provided where necessary);
- must be objective (no favouritism and nepotism);
- must be a fair person;
- must be trust worthy (no bribery);
- must have the ability to select the right person for the right job;
- must have the ability to facilitate wage negotiations and achieve a clear cut agreement;
- must be able to negotiate with the community when necessary;
- must have the knowledge of what labour or subcontractors are needed on the project; and
- must be diligent and time conscious

#### **PS 14.6 DEMOGRAPHICS AND ELIGIBILITY FOR EMPLOYMENT**

The ISD together with the recognized community structures (usually the PLC and labor desk committee) shall agree on the distribution of labour according to the Wards affected by the project. This distribution will be informed by the number of recruits required and the duration of each cycle or phase.

This process requires careful planning from the contractor in the sense that will not cause community disruptions due to poor planning for targeted labour.

Updated reports must be provided on progress with the recruitment of labour and these must be circulated to all relevant structures.

#### **PS 14.7 RECRUITMENT PROCEDURES**

- (i) The contractor shall allow labour request a minimum of one full week. These requests are to be effected in writing and signed off by the contractor.

- (ii) Labour required by the sub-contractors and small building contractors is to be done through the labour desk committee in writing
- (iii) PSC representative from each village must have a waiting list ready for labour requirements and give each prospective person standard form signed by PLC
- (iv) The person will submit the signed form to CLO and labour desk committee.
- (v) The CLO will keep forms for records
- (vi) No person is allowed at the site office without a signed form from PSC representative.

#### **PS 14.8 CONTRACTS TERMINATION**

The intention to issue notices of termination of the contracts for completed tasks must be communicated to the ISD facilitator, CLO and PLC in advance. Communication in advance will prevent unforeseen disruption of the project where employees refuse to accept termination of their contracts.

The termination clause must be clearly stated in the employee contracts and must include a start and end date, where it cannot be specified an estimated time of exit. Termination must be justifiable and done in line with the Contract execution programme.

The CLO is hired on a fixed term contract and there is no overtime and he / she is the last one out with the contractor.

#### **PS 14.9 CELLPHONE ALLOWANCE**

The CLO receives cell phone allowance for ease of communication and this allowance is catered for in the budget.

#### **PS 14.10 GOVERNMENT GAZZETTED RATES**

All labour is paid according the labour Government Gazzetted rates as stipulated in the Engineering Sector and provision for wage adjustment should be catered for every year.

#### **PS 15 PREFABRICATED GUARD HOUSE**

The contractor is to construct a Prefabricated guard house that is movable. The guard house must be compact, lightweight and durable, ensuring maximum value for money. The guard house details are as below:

- 4m x4m size building
- Suitable size office desk
- 2 x T 600 high chairs
- Movable office cabinet
- Lockable doors
- Surrounding lights
- 3 x suitable windows with one window in the door way direction
- Airconditioner
- Tea and coffee station
- Outside hand washing basin for drinkable water
- Electricital points must be considered.

#### **PS 16 PREFABRICATED BUILDING**

The contractor is to construct Prefabricated buildings that are movable. The buildings must have change rooms and ablution facilities, storage room and office space. The contractor is to

use the below information as a guide when pricing. Before any building is placed on site the Employer's Agent must give approval of the plan that the contractor priced for. The building details are as follows.

#### **Office Space**

- 6m x4m office space that is suitable
- Suitable size office desk
- 4 x T 600 high chairs
- Movable office cabinet
- Lockable doors
- Surrounding lights
- 3 x suitable windows must be considered when pricing with one window in the door way direction, however a suitable plan must be provided for the approval of the engineer for acceptance.
- Airconditioner
- Tea and coffee station
- Outside hand washing basin for drinkable water
- Electricital points must be considered.
- Network / internet points

#### **Storage Room**

- The sizing of the storage room should be based on a 15 day storage of chemicals based on the contractor's design.
- The facility must be ventilated and lighting must be provided.

#### **Ablution Facilities**

- 5m x 5m space or suitable to all facilities required as per Employer's Agent approval of the tenderes design.
- One fully equiped coral white front flush toilet considering both male and female. The toilet must consider disability (access).
- Change room storage cabinet
- One sink
- One Toilet paper holder
- One hand towel holder ( C-folder paper towel dispanser or similar approved)
- One bin
- One mirror
- One urinery

### **PS 17 PERIMETER FENCING AND GATE**

The contractor is to construct a perimeter fencing with a motorized gate. The fence shall be installed to protect and secure the new structure. Below are the details of the fence.

- Electrically controlled gate of height 3 meters and entrance opening of 4m with 50mm square tubing frame and 20mm round bars in 200mm spacing vetically or any suitable design for the approval of the Employer's Agent

- Clearview fencing with anti-climbing properties of 76.2mm x 12.7mm premium security. The contractor is to consider corner poles, and 2m spacing between each pole when pricing.

#### **C4: SITE INFORMATION**

##### **C4.1: LOCALITY PLAN**

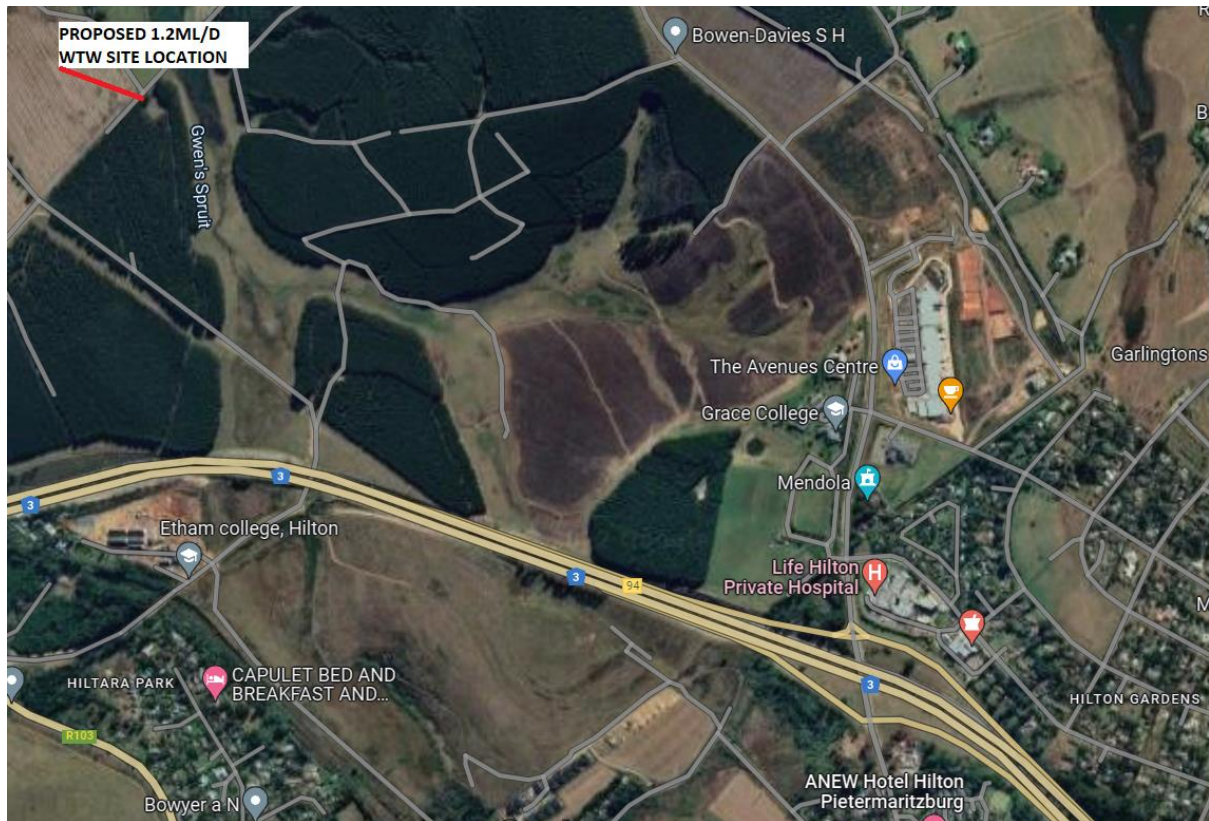
##### **C4.2: DESCRIPTION AND ACCESS TO SITE**

##### **C4.3: ATMOSPHERIC / CLIMATE CONDITIONS**

##### **C4.4: NATURE OF THE GROUND AND SUBSOIL CONDITIONS**

##### **C4.5: ENVIRONMENTAL**

## C4.1 LOCALITY PLAN



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#### **C4.2 DESCRIPTION OF AND ACCESS TO THE SITE**

The project area is located in Hilton in the uMgungundlovu District Municipality approximately 25km North West of Pietermaritzburg in KwaZulu-Natal.

The central co-ordinates of the project area are as follows:

(-29.5307975, 30.2830028)

Access to the project area is via the N3 and Hilton Avenue, North West of Pietermaritzburg.

Sections of the site can be accessed via gravel roads and tracks. The contractor will require suitable site vehicles (4x4) to access the site in the wet season.

The Contractor and approved Sub-contractors will be provided full access to the construction site for the purpose of this contract only.

Access shall also be provided for inspection and testing by personnel acting on behalf of the Employer.

Access to public shall be strictly prohibited.

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