SECTION 2.2: SPECIFICATIONS

TERMS OF REFERENCE – PROVISION OF SERVICES: SAMPLING OF ALL SANITATION AND WATER SUPPLY SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

2.2.1 CONTENTS

1. INTRODUCTION

Hessequa Local Municipality is a water services authority operating and maintaining water supply schemes and wastewater treatment works. The municipality is responsible for ten wastewater treatment works located at Riversdale, Garcia, Heidelberg, Slangrivier, Witsand, Albertina, Gouritsmond, Still Bay, Jongensfontein and Melkhoutfontein. The municipality is also responsible for Riversdale, Garcia, Albertina, Gouritsmond, Still Bay, Jongensfontein and Melkhoutfontein water treatment works and distribution systems. The Heidelberg Water Treatment Works which also supplies Slangrivier and Witsand is being operated by Overberg Water Board and the municipality is responsible for the distribution system in the three towns. SANS 241:2011 part 1 and 2 forms an integral part of this document

A service provider is required to provide the professional services necessary to implement this project, which, in terms of the Municipal Finance Management Act, 2003 and the Municipal Supply Chain Management Regulations, 2005, must be procured through a competitive bidding process. The purpose of this document is therefore to invite tenders from suitably qualified and experienced service providers for the Contract: **PROVISION OF SERVICES: SAMPLING OF ALL SANITATION AND WATER SUPPLY SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS**, which will be evaluated using a financial offer and preference-based system as described in the tender data. The Hessequa Municipality wishes to enter into a contract with a suitable supplier for a period starting from the date of appointment for a period of three (3) years.

2. BACKGROUND

Hessequa Local Municipality is a Water Services Authority and Water Services Provider and is responsible for water quality in its area of jurisdiction. The requirements for sampling are outlined in government gazette no 26187 dated 26th March 2004, under Section 26 of the National Water Act, 1998 (Act No. 36 of 1998).
The municipality is required to provide drinking water complying with SANS 241 and effluent discharge complying with a license issued to each of the waste water treatment works.

3. EMPLOYER'S OBJECTIVE

The Employer's objective is to implement an effective sampling programme for both water supply systems and sanitation systems as outlined in the Green Drop and Blue Drop Systems.

4. Description of the services REQUIRED

Initials of Service Provider's Authority: .....

The services required comprises of collecting of samples at identified points and analysing them in a registered laboratory compiling a report as outlined below.

4.1 WASTEWATER SYSTEM MONITORING	Comply Yes/No	Page of references
Hessequa Local Municipality has 5 oxidation water treatment plants and 5 activated sludge treatment plants. The monitoring points are outlined in the following sections.		

Oxidation Pond Systems

The sampling points for oxidation pond systems are summarised in tables 4.1.1 below. Currently there are no boreholes at all the oxidation pond plants, but it is anticipated that they are going to be provided this year.

Table 4.1.1 WwTW Oxidation Ponds Sampling Points

WwTW	Class	License	Sampling Point 1 Inlet works	Sampling Point 2 Last Maturation Pond	Sampling Point 3 Monitoring Borehole
Gouritsmond	E	General	34°20'33.09"S	34°20'29.62"S	
			21°52'06.28"E	21°52'07.16"E	
Jongensfontein	E	General	34°25'39.56"S	34°25'39.56"S	
			21°19'33.90"E	21°19'38.68"E	
Melkhoutfontein	E	General	34°19'14.09"S	34°19'18.73"S	
			21°26'19.85"E	21°26'28.69"E	
Slangrivier	E	General	34°08'39.39"S	34°08'42.07"S	
			20°51'58.26"E	20°51'58.07"E	
Witsand	E	General	34°22'42.60"S	34°22'42.81"S	
			20°49'19.11"E	20°49'22.50"E	

Gouritsmond WwTW

The effluent evaporates; therefore, the final effluent is to be collected from the last tertiary pond.

Jongensfontein WwTW

The effluent evaporates; therefore, the final effluent is to be collected from the last maturation pond.

Melkhoutfontein

The effluent evaporates and has not yet reached the final pond; therefore, the final effluent is to be collected from the last maturation containing effluent

Slangrivier

The effluent is used for irrigation therefore the final effluent is to be collected from the irrigation pond.

Witsand

The effluent in the oxidation ponds evaporates, therefore the final effluent is to be collected from the last maturation pond. Currently it is the facultative pond. The irrigation pond is dry.

Initials of Service Provider's Authority: .....

4.1.2 Activated Sludge Systems

There are five activated sludge systems comprising Riversdale, Garcia, Albertina, Still Bay and Heidelberg. The sampling points are shown in table 4.1.2 below.

Table 4.1.2 Sampling Points for WwTW

WwTW	Class	License	Raw Sewage Inlet	Process in WwTW		Discharge Point
			Sampling Point 1	Sampling Point 2	Sampling Point 3	Sampling Point 4
Riversdale	C	Special	34°06'47.66"S			34°06'50.08"S
			21°16'52.60"E			21°16'53.70"E
Garcia	D	General	34°01'07.51"S			34°01'08.19"S
			21°34'43.54"E			21°13'43.92"E
Albertina	D	General	34°11'46.92"S			34°11'42.87"S
			21°35'17.69"E			21°35'14.90"E
Still Bay	D	General	34°23'24.61S			34°23'31.31"S
			21°24'52.61"E			21°24'52.61"E
Heidelberg	D	General	34°06'04.61S			34°06'06.44"S
			20°58'21.84"E			20°58'21.97"E

4.1.3 Distribution Network

The sampling points in the distribution network are described below

WwTW	Sampling Point 1 Distribution Network
Riversdale Abattoir	34°09'34.15"S
	21°24'76.25"E
Riversdale Cheese Factory	34°09'13.14"S
	21°24'59.40"E

4.2 WATER SUPPLY SYSTEM MONITORING	Comply Yes/No	Page to reference

Initials of Service Provider's Authority: .....

4.2.1 Water Treatment Plants

Hessequa Local Municipality has 7 Water Treatment Plants located at Riversdale, Garcia, Albertina, Gouritsmound, Still Bay, Melkhoutfontein and Jongensfontein. Heidelberg, Riversdale, Garcia, Albertina and Still Bay have surface water sources. The sampling points are summarised in the table below:-

Table 4.2.1 Sampling at Water Treatment Works (surface water supply schemes)

WwTW	Class	Raw Water Inlet Works	WTW (Final)		Distribution Network	
		Sampling Point 1	Sampling Point 2	Sampling Point 3	Sampling Point 4	Sampling Point 5
Riversdale	C	34°06'47.66"S		34°06'50.08"S		34°06'50.08"S
		21°16'52.60"E		21°16'53.70"E		21°16'53.70"E
Garcia	D	34°01'07.51"S		34°01'08.19"S		34°01'08.19"S
		21°34'43.54"E		21°13'43.92"E		21°13'43.92"E
Albertina	D	34°11'46.92"S		34°11'42.87"S		34°11'42.87"S
		21°35'17.69"E		21°35'14.90"E		21°35'14.90"E
Still Bay	D	34°23'24.61S		34°23'31.31"S		34°23'31.31"S
		21°24'52.61"E		21°24'52.61"E		21°24'52.61"E
Gouritsmond	D					34°05'18.52"S
						20°57'24.28"E
Jongensfontein						34°08'07.48"S
						20°51'46.48"E
Melkhoutfontein						34°23'35.07"S
						20°51'39.21"E

4.2.2 Water Treatment Plants

Gouritsmond, Still Bay, Melkhoutfontein and Jongensfontein have fountains and boreholes as sources of water. The sampling points are summarised in table 4.2.2 below:-

Table 4.2.2 Sampling at Groundwater Supply Systems

WwTW	Class	Borehole or Fountain	Sump Before Filtration	Reservoir	Distribution Network
		Sampling Point 1	Sampling Point 2	Sampling Point 3	Sampling Point 4
Still bay	D				34°23'31.31"S

Initials of Service Provider's Authority: .....

					21°24'52.61"E
Melkhoutfontein	E				34°19'34.16"S
					21°25'09.08"E
Jongensfontein	E	34°25'36"S	34°25'35"S		34°25'34.27"S
		21°19'37"E.	21°19'30"E.		21°20'33.18"E
Gouritsmond	E	34°17'27.07"S		34°20'35.05"S	34°21'19.59"S
		21°46'49.39"E		21°51'30.68"E	21°52'47.42"E
Witsand	E	34°05'74.83"S	34°05'74.83"S		34°23'35.07"S
		20°57'52.61"E	20°57'52.61"E		20°51'39.21"E
Albertinia	D				

4.2.3 Distribution Network

The sampling points in the distribution network are described in table 4.2.3 below

Table 4.2.3 Drinking Water Sampling Points in Distribution Network (Currently)

Town	Description	Coordinates	
		Latitude	Longitude
Albertinia	BP Petrol Station - Tap next to pump	34°12'42.43"S	21°35'5.70"E
Albertinia	Theronsville Community Hall	34°12'15.26"S	21°34'19.89"E
Gouritsmond	Outside Female Toilet	34°21'19.59"S	21°52'47.42"E
Gouritsmond	Bietouville soccer hall - inside	34°20'50.13"S	21°52'11.36"E
Still Bay	Inside Erf as indicated ext 5	34°21'26.06"S	21°24'46.24"E
Still Bay	Lappiesbaai Restaurant -Male Toilet	34°22'23.48"S	21°25'42.86"E
Stilbaai	Municipal offices - Outside Tap	34°22'38.59"S	21°24'39.85"E
Heidelberg	Municipal offices - Outside Tap	34° 5'18.52"S	20°57'24.28"E
Heidelberg	Duivenhoks – Community Hall		
Jongensfontein	Camping Site - As indicated - Pomp	34°25'34.27"S	21°20'33.18"E
Jongensfontein	Additional – point to be determined	34°25'34.27"S	21°20'33.18"E
Riversdale	Tuinroete Agri - Position as indicated	34° 5'0.80"S	21°15'9.81"E
Riversdale	Kwanokuthula Community Hall	34° 6'2.75"S	21°14'40.70"E
Riversdale	Takkieskloof Sampling Point	34° 5'16.48"S	21°14'47.22"E
Slangrivier	Municipal offices - Outside Tap	34° 8'7.48"S	20°51'46.48"E
Slangrivier	Additional point to be confirmed	34° 8'7.48"S	20°51'46.48"E
Witsand	Position as indicated by coordinate	34°23'35.07"S	20°51'39.21"E
Witsand	Additional point to be confirmed	34°23'35.07"S	20°51'39.21"E
Melkhoutfontein	Municipal offices - Outside Tap	34°19'34.16"S	21°25'9.08"E

Melkhoutfontein	Additional point to be confirmed	34°19'34.16"S	21°25'9.08"E		
Vermaaklikheid	Tap at furthest house	34°18'15.80"S	21° 1'47.88"E		
Vermaaklikheid	Tap at the 4 Green Tanks	34°18'15.80"S	21° 1'47.88"E		
Garcia	Tap at A.January	34° 0'55.26"S	21°13'30.81"E		
Garcia	Tap at Water Treatment Works	34° 0'55.26"S	21°13'30.81"E		

4.3 REPORTING	Comply Yes/No	Page to reference
The report should cover the following (a) An appendix showing the actual laboratory report and the method used to determine each parameter. (b) Bidder must compile a report that describes the current water and wastewater quality and how to improve it. Report must be signed off by a Registered Professional with minimum 10 years' experience in water utilization. Proof must be provided with the returnable documents. (c) Reports are to be submitted to the client electronically (Excel and pdf), supplemented by a hard copy. Electronic reports are to be saved in the following format *yyyymmdd-Hessequa LM Water and Wastewater quality results.* (d) Report must only include one sample point per page, and the result against the Sans 241(Water) and General limit must be clearly visible. (e) The tenderer must also keep record of all data and perform a trend analysis as more data becomes available. (f) The results for microbiological determinants must be available within 48 hours from the sampling date.		

5. EXTENT OF THE SERVICES	Comply Yes/No	Page to reference
The services to be provided in terms of this project are inextricably linked to the Employers operational budget. All services to be provided shall therefore be programmed in order to make full use of, but not exceed, the budget provision in any given financial year. It should be noted that while the Employer has every intention of completing the full Scope of Work making full use of the budget provision given, the Employer's budget is subject to periodic review. Should it become necessary to vary the scope of work or even suspend or terminate this contract, such variation, suspension or termination shall be dealt with in accordance with the provisions of the Standard Professional Services Contract as amended by the General Conditions of Contract.		

6. USE OF REASONABLE SKILL AND CARE	Comply Yes/No	Page to reference
The Service Provider's attention is drawn to the fact that the water quality monitoring informs the public about the safety of drinking water and contamination of the environment which can have serious health effects. The Service Provider is therefore required to provide all aspects of the service with all reasonable care, diligence and skill in accordance with generally accepted professional techniques and standards. Therefore, the tenderer must submit proof that the laboratory responsible for the analyses should be operated under the direct control of a Registered Professional Natural Scientist of the appropriate discipline, as called for in terms of the Natural		

Initials of Service Provider's Authority: .....

Scientists Act of 1982. The laboratory should be SANAS accredited to specification ISO 17025 and take part in the quarterly inter-laboratory studies. A laboratory that takes part in the Proficiency Testing for both Microbiological determinants (NLA) and the Chemical parameters (SABS), with z-scores of less than 2 and more than -2 will also be accepted. Failure to provide hereof will lead to disqualification. The tenderer must ensure that a municipal official accompanies all samplers. The time and date that the sample was taken must be recorded, and signed off by the official that accompanies the sampler. Bidder must provide proof of the time and date that the samples was delivered to the lab. Proof needs to be sent to the Municipality monthly. The tenderer must submit proof that their sampler has been trained in sampling techniques.

7. PARAMETERS TO BE DETERMINED FOR WASTE WATER FINAL EFFLUENT — **Comply Yes/No** — **Page to reference**

- pH
- Conductivity
- Suspended solids
- Free saline ammonia as N in mg/l
- Nitrate + Nitrite as N in mg/l
- Ortho-phosphate as P in mg/l
- COD
- Free Chlorine (mg/l) – Not for oxidation pond systems
- E.Coli per 100ml
- Fecal Coliforms

8. PARAMETERS TO BE DETERMINED FOR WATER FROM WATER TREATMENT PLANTS — **Comply Yes/No** — **Page of references**

Riversdale

Determinant	No of Samples	Frequency
Colour (mg/l)	3	Fortnightly
Aluminium (Ug/l as Al)	3	Fortnightly
Total Dissolved Solids (mg/l)	3	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	3	Fortnightly
Heterotrophic Plate Count (count per ml)	3	Fortnightly
pH value (at 25°C)	3	Fortnightly
Turbidity (NTU)	3	Fortnightly
Free Chlorine (mg/l)	3	Fortnightly
E.coli (count per 100ml)	3	Fortnightly

Garcia

Determinant	No of Samples	Frequency
Colour (mg/l)	2	Fortnightly
Aluminium (Ug/l as Al)	2	Fortnightly
Total Dissolved Solids (mg/l)	2	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	2	Fortnightly

Initials of Service Provider's Authority: .....

Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly

Albertinia

Determinant	No of Samples	Frequency
Total Dissolved Solids (mg/l)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly
Aluminium (ug/l as Al)	2	Fortnightly
Iron (ug/l as Fe)	2	Fortnightly

Still Bay

Determinant	No of Samples	Frequency
Chloride (mg/l)	3	Fortnightly
Sodium (mg/l)	3	Fortnightly
Total Dissolved Solids (mg/l)	3	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	3	Fortnightly
Heterotrophic Plate Count (count per ml)	3	Fortnightly
pH value (at 25°C)	3	Fortnightly
Turbidity (NTU)	3	Fortnightly
Free Chlorine (mg/l)	3	Fortnightly
E.coli (count per 100ml)	3	Fortnightly
Aluminium (Ug/l as Al)	3	Fortnightly

Heidelberg

Determinant	No of Samples	Frequency
Total Dissolved Solids (mg/l)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly
Aluminium (ug/l as Al)	2	Fortnightly
Iron (ug/l as Fe)	2	Fortnightly

Initials of Service Provider's Authority: .....

Witsand

Determinant	No of Samples	Frequency
Total Dissolved Solids (mg/l)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly
Aluminium (ug/l as Al)	2	Fortnightly
Iron (ug/l as Fe)	2	Fortnightly

Slangrivier

Determinant	No of Samples	Frequency
Total Dissolved Solids (mg/l)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly
Aluminium (ug/l as Al)	2	Fortnightly
Iron (ug/l as Fe)	2	Fortnightly

Jongensfontein

Determinant	No of Samples	Frequency
Total Dissolved Solids (mg/l)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	2	Fortnightly

Gouritsmond

Determinant	No of Samples	Frequency
Total Dissolved Solids (mg/l)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly

Initials of Service Provider's Authority: .....

E.coli (count per 100ml)	2	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	2	Fortnightly

Melkhoutfontein

Determinant	No of Samples	Frequency
Chloride (mg/l)	2	Fortnightly
Sodium (mg/l)	2	Fortnightly
Total Dissolved Solids (mg/l)	2	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Free Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly

Vermaaklikheid

Determinant	No of Samples	Frequency
Chloride (mg/l)	2	Fortnightly
Total Dissolved Solids (mg/l)	2	Fortnightly
Total Coliforms Bacteria (count per 100 ml)	2	Fortnightly
Heterotrophic Plate Count (count per ml)	2	Fortnightly
pH value (at 25°C)	2	Fortnightly
Turbidity (NTU)	2	Fortnightly
Chlorine (mg/l)	2	Fortnightly
E.coli (count per 100ml)	2	Fortnightly

9. PRICING INSTRUCTIONS	Comply Yes/No	Page of references

(a) Tenderer must provide a price for the sampling for all Water and Wastewater Final Effluent on the Pricing Schedule. This must be an annual rate. The determinants is as per section 7 and 8 of the specifications.
(b) The Tenderer must in addition to the above provide a rate for the Full SANS 241 analysis for Drinking Water. This is to be done once a year as per SANS 241:2011 Part 1.
(c) The Tenderer must also provide a rate for Sludge Classification of all Waste Water Treatment Works. This has to be done once a year.
(d) The Tenderer must indicate his analytical method per parameter.
(e) The tenderer must indicate which day of the month they will sample, when the results will be available and indicate which samples they will take on which day. A method statement to ensure the integrity of samples must also be provided as part of the returnable documents. Failure to provide this information will lead to disqualification.
(f) The tender can be awarded per category but not for specific parameters only, a laboratory that is not accredited to test all the required parameters will not be considered.

Initials of Service Provider's Authority: .....

(g) The tenderer must submit a breakdown of his rate per sample and also per determinant. This is applicable to Schedule A to D in the pricing schedule (h) The tenderer must submit a rate for resampling of the E-Coli and Total Coliforms per town and per sample. (i) The tenderer must note that the number of samples can be reduced to fall within the available budget.		

DECLARATION,

I, THE UNDERSIGNED (NAME) .....

CERTIFY THAT THE INFORMATION FURNISHED ABOVE IS CORRECT. I ACCEPT THAT THE MUNICIPALITY MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

AUTHORISED SIGNATURE: .....

NAME: .....

CAPACITY: .....DATE: .....

Initials of Service Provider's Authority: .....