
RUSTENBURG WATER SERVICES TRUST



**MID YEAR PERFORMANCE REPORT
JULY – DECEMBER 2023**

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MID YEAR PERFORMANCE REPORT FOR RUSTENBURG LOCAL MUNICIPALITY ON THE RUSTENBURG WATER SERVICES TRUST FOR THE PERIOD JULY TO DECEMBER 2023

1. TERMS OF REFERENCE FOR THE RUSTENBURG WATER SERVICES TRUST (RWST)

The following report is the result of a performance assessment of the Rustenburg Water Services Trust, for the period from July to December 2023. The report considers Treasury Guidelines dated May 2007 (ISBN: - 978-0-621-37152-9) entitled, "Framework for Managing Programme Performance Information." The Trust is committed to adhering to these guidelines.

The five objectives of the Trust are captured in the Business Plan, the Strategic Plan and Trust Deed and as such is as follows:

1. To procure the design for the required plant extension.
2. To procure the construction and oversee implementation.
3. To Operate and Maintain the following treatment plants:
 - Rustenburg wastewater treatment works,
 - Boitekong wastewater treatment works,
 - Monakato wastewater treatment works,
 - Lethabong wastewater treatment works,
 - Bospoort water treatment works,
 - Kloof water treatment works,

In the most cost-effective manner and for the purposes of maximizing the Trust Income to be distributed to the Beneficiary.

4. To provide potable water to RLM in accordance with the Water Services Agreement; and
5. To Supply treated water to the industrial water off-takers in terms of the Off Take agreements.

2. PERFORMANCE PLAN SCORECARD FOR THE RWST

2.1 Key Performance Area (KPA 5): Basic Services and Infrastructure Development

Key Focus Area/Goal	Strategies	Area/Ward Serviced	KPI No:	IDP Ref	Weight	Key Performance Indicator (KPI)	Baseline 2023/24	Portfolio of Evidence	2023/24 Annual Target	Annual Budget 2023/24 R'000	Period	Target	Performance	Score out of 3	Reasons for Variance (if any)	Remedial Measures
1. MUNICIPAL STRATEGIC PRIORITY: Develop and sustain a spatial, natural, and built environment																
1.1. Municipal Strategic Objective: Accelerated delivery and maintenance of quality basic and essential services to all Communities																
WATER SERVICES																
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Sewer Purification	14, 15, 16, 20, 21, 25, 27, 28	1	OBJ 3	5	Number of functional sewer purification plants operated in terms of Trust Deed	4	4 x log sheets of volumes of purification plants for Boitekong, Lethabong, Rustenburg and Monakato.	4	R74.2	Q1	4	4	3	N/A	N/A
											Q2	4	4	3	N/A	N/A
											Mid-Year	4	4	3	N/A	N/A
											Q3	4				
											Q4	4				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Sewer Purification	14, 15, 16, 20, 21, 25, 27, 28	2.1	OBJ 3	5	Number of sewer purification plants maintained in terms of the Trust Deed	4	Maintenance history for Boitekong, Lethabong, Rustenburg and Monakato.	4	R13.3	Q1	4	4	3	N/A	N/A
											Q2	4	4	3	N/A	N/A
											Mid-Year	4	4	3	N/A	N/A
											Q3	4				
											Q4	4				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Sewer Purification	14, 15, 16, 20, 21, 25, 27, 28	2.2	OBJ 3	5	% Plant availability of sewer purification plants maintained in terms of agreed standards	85%	Reports of 4 plants, assessing 10 selected items	85%	R13.3	Q1	85%	90.41%	3	N/A	N/A
											Q2	85%	89.28%	3	N/A	N/A
											Mid-Year	85%	89.84%	3	N/A	N/A
											Q3	85%				
											Q4	85%				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Sewer Purification	20, 21	3	OBJ 2	10	Boitekong upgrade, % completed 2019/2020	100% completed 2019/2020	Engineer's Completion Certificate	N/A - 100% completed 2019/2020	-	Q1	100% complete	N/A	N/A	N/A	N/A
											Q2	100% complete	N/A	N/A	N/A	N/A
											Mid-Year	100% complete	N/A	N/A	N/A	N/A
											Q3	100% complete	N/A	N/A	N/A	N/A
											Q4	100% complete	N/A	N/A	N/A	N/A

Key Focus Area/Goal	Strategies	Area/Ward Serviced	KPI No:	IDP Ref	Weight	Key Performance Indicator (KPI)	Baseline 2023/24	Portfolio of Evidence	2023/24 Annual Target	Annual Budget 2023/24 R'000	Period	Target	Performance	Score out of 3	Reasons for Variance (if any)	Remedial Measures
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Wastewater Supply	14,15,16	4	OBJ 5	10	Volume of treated wastewater supplied to the industrial water off-takers in terms of the Off-take Agreement	Average 25Ml/day	Anglo & Impala log sheets	Average 25Ml/day	R66.2	Q1	25 Ml/day	32.2 Ml/day	3	N/A	N/A
											Q2	25 Ml/day	17.63Ml/day	2	Refer to page 11	Refer to page 11
											Mid-Year	25 Ml/day	24.91Ml/day	2	Refer to page 11	Refer to page 11
											Q3	25 Ml/day				
											Q4	25 Ml/day				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Wastewater Supply	All	5	OBJ 3	10	Percentage compliance in the treatment of sewerage at Wastewater Treatment Works in terms of Anglo/DWS license agreement	90%	4 tables on water quality + lab certificates	90%	R61.5	Q1	90%	73.14%	2	Refer to pages 12-15	Refer to pages 12-15
											Q2	90%	68.55%	2	Refer to pages 12-15	Refer to pages 12-15
											Mid-Year	90%	70.84%	2	Refer to pages 12-15	Refer to pages 12-15
											Q3	90%				
											Q4	90%				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Water Purification	All	6	OBJ 3 + 4	5	Number of water treatment works operated	2	2 x log sheets of volumes for Bospoort and Kloof	2	R43.5	Q1	2	2	3	N/A	N/A
											Q2	2	2	3	N/A	N/A
											Mid-Year	2	2	3	N/A	N/A
											Q3	2				
											Q4	2				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Water Purification	All	7.1	OBJ 3 + 4	5	% Plant availability of water purification plants maintained in terms of agreed standards	85%	2 reports for Bospoort and Kloof assessing 10 selected items	85%	R13.3	Q1	85%	100%	3	N/A	N/A
											Q2	85%	100%	3	N/A	N/A
											Mid-Year	85%	100%	3	N/A	N/A
											Q3	85%				
											Q4	85%				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Water Purification	All	7.2	OBJ 3 + 4	5	Number of water purification plants maintained in terms of the Trust Deed	2	Maintenance history for Bospoort and Kloof	2	R13.3	Q1	2	2	3	N/A	N/A
											Q2	2	2	3	N/A	N/A
											Mid-Year	2	2	3	N/A	N/A
											Q3	2				
											Q4	2				

Key Focus Area/Goal	Strategies	Area/Ward Serviced	KPI No:	IDP Ref	Weight	Key Performance Indicator (KPI)	Baseline 2023/24	Portfolio of Evidence	2023/24 Annual Target	Annual Budget 2023/24 R'000	Period	Target	Performance	Score out of 3	Reasons for Variance (if any)	Remedial Measures
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Water Purification	All	8	OBJ 2	10	Percentage completion of water treatment plants - civil works upgrading project (Bospoort)	100%	Engineers take over certificate	Completed	R7.7	Q1	100% complete	N/A	N/A	N/A	N/A
											Q2	100% complete	N/A	N/A	N/A	N/A
											Mid-Year	100% complete	N/A	N/A	N/A	N/A
											Q3	100% complete	N/A	N/A	N/A	N/A
											Q4	100% complete	N/A	N/A	N/A	N/A
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Water Supply	All	9	OBJ 4	10	Volume of potable water supplied to RLM in accordance with the Water Supply Agreement	Average 10.8 MI/day	2 x log sheets for Bospoort and Kloof	Average 10.8 MI/day	R43.5	Q1	Average 10.8 MI/day	12.31MI/day	3	N/A	N/A
											Q2	Average 10.8 MI/day	11.93MI/day	3	N/A	N/A
											Mid-Year	Average 10.8 MI/day	12.12MI/day	3	N/A	N/A
											Q3	Average 10.8 MI/day				
											Q4	Average 10.8 MI/day				
Service Delivery: Sustainable Livelihoods and resilient Infrastructure	Water Supply	All	10	OBJ 4	10	Percentage compliance in the treatment of water at Water Treatment Works in terms of SANS standards	95%	2 x water quality reports and lab certificates	95%	R18.4	Q1	95%	100%	3	N/A	N/A
											Q2	95%	100%	3	N/A	N/A
											Mid-Year	95%	100%	3	N/A	N/A
											Q3	95%				
											Q4	95%				
Financial	Financial	All	11	OBJ 3	5	Maintain a debt service ratio covenant - to ensure cost effectiveness.	1.5	Quarterly financial statement, refer to DSCR	1,5 times	1,5 times	Q1	>1,5	>1,5	3	N/A	N/A
											Q2	>1,5	>1,5	3	N/A	N/A
											Mid-Year	>1,5	>1,5	3	N/A	N/A
											Q3	>1,5				
											Q4	>1,5				
Good Governance	Good Governance	All	12		5	Percentage implementation of the Post Audit Action Plan (PAAP)	New	Quarterly PAAP implementation Report	100%	R0.00	Q1	100%	75%	2	Refer to page 24	Refer to page 24
											Q2	100%	75%	2	Refer to page 24	Refer to page 24
											Mid-Year	100%	75%	2	Refer to page 24	Refer to page 24
											Q3	100%				
											Q4	100%				
Total					100						Q1	33/36				
											Q2	33/36				

Key Focus Area/Goal	Strategies	Area/Ward Serviced	KPI No:	IDP Ref	Weight	Key Performance Indicator (KPI)	Baseline 2023/24	Portfolio of Evidence	2023/24 Annual Target	Annual Budget 2023/24 R'000	Period	Target	Performance	Score out of 3	Reasons for Variance (if any)	Remedial Measures
											Mid-Year	33/36				
											Q3					
											Q4					

Key Performance Areas (KPAs)	KPI No.	KPA Weightings	KPI Score	Assess Weightings	Weighted Score	Panel Score
Number of functional sewer purification plants operated in terms of Trust Deed	1	3	3/3	100%	3	
Number of sewer purification plants maintained in terms of agreed standards	2.1	3	3/3	100%	3	
Plant availability of sewer purification plants maintained in terms of agreed standards	2.2	3	3/3	89.84%	3	
Percentage completion of sewer purification plants upgrading projects (Boitekong). Project completed 2019 / 2020.	3	N/A	N/A	N/A	-	
Volume of treated wastewater supplied to the industrial water off-takers in terms of the Off-take Agreement	4	3	3/3	99.64%	2	
Percentage compliance in the treatment of sewerage at Wastewater Treatment Works in terms of DWS license agreement	5	3	2/3	70.84%	2	
Number of water treatment works operated in terms of agreed standards	6	3	3/3	100%	3	
Plant availability: Number of water treatment works maintained	7.1	3	3/3	100%	3	
Plant maintenance of water treatment works maintain	7.2	3	3/3	100%	3	
Percentage completion of water treatment plants - civil works upgrading project (Bospoort)	8	N/A	N/A	N/A	-	
Volume of potable water supplied to RLM in accordance with the Water Supply Agreement	9	3	3/3	100%	3	
Percentage compliance in the treatment of water at Water Treatment Works in terms of DWS license	10	3	3/3	100%	3	
Debt Service Cover Ratio >1,5 times	11	3	3/3	100%	3	
Good Governance	12	3	3/3	75%	2	
Total KPA		36	36	94.61%	33/36	

Signatures

SIGNED AND ACCEPTED ON BEHALF OF COUNCIL	SIGNED AND ACCEPTED BY THE TRUST ACCOUNTING OFFICER
NAME: ADVOCATE AR KHUDUGE	NAME: MR KAGISO LEBETHE
SIGNATURE:	SIGNATURE:
DATE:	DATE:

2.2 KPI 1: NUMBER OF SEWER PURIFICATION PLANTS OPERATED IN TERMS OF AGREED STANDARDS

RWST is responsible for the operation of the four-waste water treatment works, namely -

Rustenburg Wastewater Treatment Works	(42 Mℓ/d design capacity)
Boitekong Wastewater Treatment Works	(24 Mℓ/d design capacity)
Monakato Wastewater Treatment Works	(1 Mℓ/d design capacity)
Lethabong Wastewater Treatment Works	(2 Mℓ/d design capacity)

Water and Sanitation Services South Africa (Pty) Ltd, trading as Water Solutions Southern Africa (WSSA) has been contracted by the Rustenburg Water Services Trust (RWST) for the operation of these plants.

The volumes treated by each plant for the period under review, are captured below and are dependent on the inflow into the plant.

Table: 1 Waste Water Volumes Treated

PLANT	CAPACITY	JULY - DECEMBER 2023
Rustenburg WWTW	42 Mℓ/d	33.01Mℓ/d
Boitekong WWTW	24 Mℓ/d	8.21Mℓ/d
Monakato WWTW	1 Mℓ/d	1.57Mℓ/d
Lethabong WWTW	2 Mℓ/d	1.17Mℓ/d

All four WWTW were operated in terms of the agreed standards.

2.3 KPI 2.1: NUMBER OF SEWER PURIFICATION PLANTS MAINTAINED IN TERMS OF THE TRUST DEED.

There are 4 (four) wastewater treatment works maintained in terms of agreed standards, namely: Rustenburg, Boitekong, Monakato, Lethabong Wastewater Treatment Works.

KPI 2.2: PLANT AVAILABILITY OF SEWER PURIFICATION PLANTS MAINTAINED IN TERMS OF AGREED STANDARDS.

The successful operation of a Wastewater Treatment Works is largely dependent on the installed machinery and equipment to ensure that the wastewater can be treated according to the process the plant was designed for.

It is thus vital that all machinery and equipment be kept in good working condition and available for use when required.

Monthly reports are compiled for Monakato, Lethabong and Boitekong WWTW, whereas weekly reports are compiled for Rustenburg WWTW, due to the size of the plant.

Regular servicing and preventative maintenance however require that equipment be taken out of service for a certain period. It will thus not always be possible to obtain a 100% of all equipment availability and the target of 85% availability is set.

Monthly spot checks are performed by RWST to verify availability. The availability of the four wastewater treatment works is indicated below:

Table: 2 Plant availability

PLANT	CAPACITY	AVAILABILITY	
		Target	JULY - DECEMBER 2023
Rustenburg WWTW	42 Ml/d	85%	92.74%
Boitekong WWTW	24 Ml/d	85%	89.99%
Monakato WWTW	1 Ml/d	85%	83.33%
Lethabong WWTW	2 Ml/d	85%	93.33%
Overall plant availability			89.84%

Performance review -

Rustenburg, Boitekong and Lethabong WWTW exceeded the set target of 85%. Monakato did not meet the set target due to the following.

Reasons for variance –

- Monakato is experiencing extremely high amount of power failures which results in damage to electrical equipment.
- Design not adequate for onsite conditions.

Remedial Measures -

Modifications required in next upgrade.

2.4 KPI 3: PERCENTAGE COMPLETION OF SEWER PURIFICATION PLANTS UPGRADING PROJECTS (BOITEKONG).

Upgrade of the plant to 24 Mℓ/d was completed and defects liability period ended in June 2021.

Table 3: Boitekong Construction Progress

BOITEKONG WWTW CONSTRUCTION PROGRESS			
CONTRACT	PROGRESS		PROGRESS FOR PERIOD
	July 2023	December 2023	
Civil	100%	100%	-
M&E	100%	100%	-
Overall	100%	100%	-

2.5 KPI 4: VOLUME OF TREATED WASTEWATER SUPPLIED TO THE INDUSTRIAL WATER OFF-TAKERS IN TERMS OF THE OFF-TAKE AGREEMENT.

As per off-take agreement between the RWST and the mines, a total of 25 Mℓ/d treated effluent water from the Rustenburg WWTW is to be made available for use as process water. Of this 10 Mℓ/d is allocated to Impala and 15 Mℓ/d to Anglo Platinum.

The average supplied volume is detailed in the table below.

Table 4: Average daily supply of treated effluent

Mine Name	Average available July - December 2023	Average used July - December 2023
Anglo Platinum	13.77Mℓ/d	9.65Mℓ/d
Impala	11.14Mℓ/d	8.12Mℓ/d
Total	24.91Mℓ/d	17.77Mℓ/d

Performance review -

Rustenburg WWTW did not achieve the average combined target of 25 Mℓ/d.

Reasons for variance –

- Blockages are severely hampering the plant performance. The matter has been escalated to RLM

Remedial Measures -

- RWST is unblocking sewers to alleviate the problem.

2.6 KPI 5: PERCENTAGE COMPLIANCE IN THE TREATMENT OF SEWERAGE AT WASTEWATER TREATMENT WORKS IN TERMS OF DWS LICENSE AGREEMENT.

Water discharged from the wastewater treatment works needs to comply with the relevant Department of Water and Sanitation (DWS) Water Use License requirements. The new license limits were issued by DWS on 30 June 2022, thus compliance from July 2022 is measured based on the new limits.

2.6.1 BOITEKONG WASTEWATER TREATMENT WORKS

Table 5.2: New DWS License conditions for Boitekong WWTW

Determinant	Performance standard
pH	6.0 - 8.5
Elec. Conductivity	150 mS/m
COD	< 30 mg/l
Ammonia	≤ 2 mg/l
Nitrate	< 10 mg/l
Suspended Solids	< 25 mg/l
Faecal Coliform	< 150CFU/100 ml
Free Chlorine	≤ 0.25 mg/l
Orthophosphate	< 1.0 mg/l

Table 6: Quality performance of Boitekong WWTW for the period under review.

Determinant	New Performance standard (DWS)	Performance 1 July – 25 September 2023		New Performance standard (DWS)	Performance 26 September – 25 December 2023	
		Performance achieved	% Compliance		Performance achieved	% Compliance
pH	6.0 - 8.5	7.79-8.10	100%	6.0 - 8.5	7.56-7.90	100%
Elec. Conductivity	< 150 mS/m	104-141mS/m	100%	< 150 mS/m	44-207/m	33%
COD	< 30 mg/l	15-49mg/l	67%	< 30 mg/l	31-50mg/l	Non-compliant
Ammonia	≤ 2 mg/l	0.10-0.10mg/l	100%	≤ 2 mg/l	0.10-0.10mg/l	100%
Nitrate	< 10 mg/l	7.47-9.87mg/l	100%	< 10 mg/l	0.05-8.72mg/l	100%
Suspended Solids	< 25 mg/l	2-2mg/l	100%	< 25 mg/l	2-4mg/l	100%
Faecal Coliform	<150CFU/100ml	0-13/ 150CFU/100 ml	100%	<150CFU/100ml	0-7/150CFU/100 ml	100%
Free Chlorine	≤ 0.25 mg/l	0.21-0.26mg/l	67%	≤ 0.25 mg/l	0.25.-0.28mg/l	67%
Orthophosphate	< 1.0 mg/l	0.05-1.53mg/l	33%	< 1.0 mg/l	0.45-1.13mg/l	67%
OVERALL COMPLIANCE			85.22%			74.11%

Performance review -

Boitekong WWTW did not meet the overall quality target of 90% over this period but improved from last quarter's performance.

Reasons for variance-

- High rate of power failures
- Low inflow volumes
- Sewer blockages outside RWST jurisdiction
- Intermittent flow due to water restrictions: there is no inflow at night.

Remedial measures-

RWST appointed a Contractor to unblock some of the sewers.

2.6.2 LETHABONG SEWAGE TREATMENT PLANT

Table 7: DWS License conditions for Lethabong WWTW

Determinant	Performance standard
pH	6.5 - 8.5
Elec. Conductivity	< 150 mS/m
COD	< 75 mg/l
Ammonia	< 1 mg/l
Nitrate	< 15 mg/l
Suspended Solids	< 25 mg/l
Faecal Coliform	< 0 / 100 ml
Free Chlorine	< 0.25 mg/l
Orthophosphate	< 1.0 mg/l

Table 8: Quality performance of Lethabong WWTW for the period under review.

Determinant	Performance standard (DWS)	Performance 1 July – 25 September 2023		Performance 26 September – 25 December 2023	
		Performance achieved	% Compliance	Performance achieved	% Compliance
pH	6.5 - 8.5	7.94-7.99	100%	7.88 - 8.02	100%
Elec. Conductivity	< 150 mS/m	75-81 mS/m	100%	64 - 89 mS/m	100%
COD	< 75 mg/l	15-18 mg/l	100%	15 - 23 mg/l	100%
Ammonia	< 1 mg/l	0.10-0.23 mg/l	100%	0.62 – 1.37 mg/l	67%
Nitrate	< 15 mg/l	4.4-7.7 mg/l	100%	6.0 – 8.2 mg/l	100%
Suspended Solids	< 25 mg/l	2-2 mg/l	100%	2-31 mg/l	67%
Faecal Coliform	< 0 / 100 ml	0-0 / 100 ml	100%	0-0 / 100 ml	100%
Free Chlorine	< 0.25 mg/l	0.16-0.27 mg/l	33%	0.25 – 0.40 mg/l	33%
Orthophosphate	< 1.0 mg/l	1.17-1.36 mg/l	Non-compliant	8.09 – 8.39 mg/l	Non-compliant
OVERALL COMPLIANCE			81.44%		74.11%

Performance review -

Lethabong WWTW did not meet the overall quality target of 90%.

Reasons for variance -

Extremely low inflow volumes, due to numerous sewer blockages, outside the jurisdiction of RWST.

Remedial Measures –

- Issue of sewer blockages has been discussed with RLM; further urgent action required by RLM.
- The water and sewer reticulation systems in Lethabong need to be rehabilitated and refurbished by RLM.

2.6.3 MONAKATO SEWAGE TREATMENT PLANT

Table 9: DWS License conditions for Monakato WWTW

Determinant	Performance standard
pH	6.5 - 8.5
Elec. Conductivity	< 150 mS/m
COD	< 75 mg/l
Ammonia	< 1 mg/l
Nitrate	< 15 mg/l
Suspended Solids	< 25 mg/l
Faecal Coliform	< 0 / 100 ml
Free Chlorine	< 0.25 mg/l
Orthophosphate	< 1.0 mg/l

Table 10: Quality performance of Monakato WWTW for the period of review.

Determinant	Performance standard (DWS)	Performance 1 July – 25 September 2023		Performance 26 September - 25 December 2023	
		Performance achieved	% Compliance	Performance achieved	% Compliance
pH	6.5 - 8.5	8.14-8.59	67%	7.51-8.14	100%
Elec. Conductivity	< 150 mS/m	94-143 mS/m	100%	66-110 mS/m	100%
COD	< 75 mg/l	15-102 mg/l	33%	82-99 mg/l	Non-Compliant
Ammonia	< 1 mg/l	10.00-14.40 mg/l	Non-compliant	7.99-12.00 mg/l	Non-compliant
Nitrate	< 15 mg/l	1.76-2.84 mg/l	100%	0.10-0.82 mg/l	100%
Suspended Solids	< 25 mg/l	19-37 mg/l	33%	30-32 mg/l	Non-compliant
Faecal Coliform	< 0 / 100 ml	0-0 / 100 ml	100%	0-2 / 100 ml	67%
Free Chlorine	< 0.25 mg/l	0.24-0.27 mg/l	67%	0.01-0.26 mg/l	67%
Orthophosphate	< 1.0 mg/l	1.42-1.99 mg/l	Non-compliant	1.44-3.09 mg/l	Non-compliant
OVERALL COMPLIANCE			55.56%		48.22%

Performance review -

Monakato WWTW did not meet the overall quality target of 90%.

Reasons for variance –

- Excessively high inflow volumes - above design capacity of the Works. Outside the jurisdiction of RWST.

Remedial Measures –

- Recent plant upgrade executed by RLM is not as per the business plan, capacity not increased as required. Matter has been discussed with RLM; further action required by RLM.
- Issue of high inflows possibly caused by excessive storm water ingress has been discussed with RLM, further action required by RLM.

2.6.4 RUSTENBURG SEWAGE TREATMENT PLANT

Table 11: DWS License conditions: Rustenburg WWTW

Determinant	Performance standard
<p>pH Elec. Conductivity COD Ammonia Nitrate Suspended Solids Faecal Coliform Residual Chlorine Orthophosphate</p>	<p>6 - 9 75 mS/m 75 mg/l 1 mg/l 0-6 mg/l 25 mg/l 150 counts/100 mℓ 0.1 mg/l 1 mg/l</p>

Table 12: Quality performance of Rustenburg WWTW for the period of review

Determinant	New Performance standard	Performance 1 July – 25 September 2023		New Performance standard	Performance 26 September – 25 December 2023	
		Performance achieved	% Compliance		Performance achieved	% Compliance
pH	6 - 9	7.68-7.93	100%	6 - 9	7.50-7.88	100%
Elec. Conductivity	75 mS/m	74.30-100.00mS/m	33%	75 mS/m	80.30-102.00 mS/m	Non-compliant
COD	75 mg/l	28.00-41.00mg/l	100%	75 mg/l	21.00-29.00 mg/l	100%
Ammonia	1 mg/l	18.80-31.30mg/l	Non-compliant	1 mg/l	0.10-17.20 mg/l	67%
Nitrate	0-6 mg/l	0.10-2.52mg/l	100%	0-6 mg/l	0.16-5.55 mg/l	100%
Suspended Solids	25 mg/l	2-2mg/l	100%	25 mg/l	3.00-10.00 mg/l	100%
Faecal Coliform	150 counts/100 mℓ	0-0/ 100 mℓ	100%	150 counts/100 mℓ	0-0/ 100 mℓ	100%
Free Chlorine	0.1 mg/l	0.0.-1.80mg/l	33%	0.1 mg/l	0.02-0.09 mg/l	100%
Orthophosphate	1 mg/l	0.92-2.21mg/l	67%	1 mg/l	0.07-4.30 mg/l	33%
OVERALL COMPLIANCE			70.33%			77.77%

Performance review -
 Rustenburg WWTW did not meet the set quality target of 90%.

Reasons for variance –

- Electrical conductivity into the plant exceeds the license limits. The plant was not designed to reduce electrical conductivity.
- Power failures inhibit the ability of the plant.
- Sporadic inflow of poor water quality because of industrial effluent
- Inflows exceed design capacity.

Remedial Measures -

Industrial flow quality is monitored daily, and issues addressed with relevant industries.

Table 13: Summary of the quality performance achieved by the 4 WWTW for the period of review, is tabled below:

PLANT	CAPACITY	PERFORMANCE	
		TARGET	JULY - SEPTEMBER 2023
Rustenburg WWTW	42 Ml/d	90%	74.05%
Boitekong WWTW	24 Ml/d	90%	79.66%
Monakato WWTW	1 Ml/d	90%	51.89%
Lethabong WWTW	2 Ml/d	90%	77.77%
Overall performance			69.34%

2.6.5 Effluent Quality (Anglo Platinum standards)

In terms of an amended agreement with the Anglo Platinum, the 15 Ml/d treated effluent supplied is further treated in the dissolved air flotation (DAF) unit to meet the following standards:

Table 14: Anglo Platinum Quality Standards

PARAMETER	UNIT	CONTRACTED QUALITY	
		MAXIMUM	REJECT
pH	pH Units	7.5 Min - 7.8 Max	6.8 Min - 8.2 Max
TOC	mg/l	20	> 25
COD	mg/l	60	> 75
TSS	mg/l	8	> 10
Alkalinity	mg/l	300	> 350
Ammonia	mg/l	5	> 10
Nitrate	mg/l	10	> 15
O-Phosphate	mg/l	9	> 10
Fats	mg/l	4	> 5
TDS	mg/l	1800 (150 µS/m)	> 2000 (200 µS/m)
Ca	mg/l	350	> 400
Mg	mg/l	75	> 100
Na	mg/l	150	> 400
SO ₄	mg/l	200	> 300
Cl	mg/l	450	> 500
Turbidity	NTU	10	> 15
E. coli	CFU/100ml	0	> 1000
Total Plate Count	CFU/100ml	1000	> 10000

The water quality is monitored daily.

Table 15 below gives an indication of the performance of the DAF plant during the period under review, July to 25 December 2023, and includes the performance of the previous period.

Table 15: Quality Measurement at Rustenburg Wastewater Treatment Works (Anglo Standards)

Determinant	Performance standard (ANGLO)	Performance 1 July – 25 September 2023		Performance 26 September – 25 December 2023	
		Performance achieved	% Compliance	Performance achieved	% Compliance
pH	7.5 Min - 7.8 Max	7.59-7.75 pH-Units	100%	7.35-7.98 pH-Units	33%
TOC	20 mg/l	8.36-9.35 mg/l	100%	4.79-9.10 mg/l	100%
COD	60 mg/l	25.00-35.00 mg/l	100%	21.00-31.00 mg/l	100%
TSS	8 mg/l	2.00-12.00 mg/l	67%	2-2 mg/l	100%
Alkalinity	300 mg/l	192.00-221.00 mg/l	100%	140-220 mg/l	100%
Ammonia	5 mg/l	2.40-21.90 mg/l	33%	0.10-25.60 mg/l	67%
Nitrate	10 mg/l	6.24-10.60mg/l	67%	6.98-10.10 mg/l	67%
O-Phosphate	9 mg/l	1.09-2.53 mg/l	100%	1.70-4.67 mg/l	100%
Fats	4 mg/l	0.50-0.50 mg/l	100%	0.50-0.50 mg/l	100%
TDS	1800 mg/l	628.00-710.00 mg/l	100%	557.00-767.00 mg/l	100%
Ca	350 mg/l	38.10-45.30 mg/l	100%	49.20-53.00 mg/l	100%
Mg	75 mg/l	29.60-32.40 mg/l	100%	32.50-36.40 mg/l	100%
Na	150 mg/l	77.70-94.20 mg/l	100%	86.60-107.00 mg/l	100%
SO ₄	200 mg/l	96.30-121.00 mg/l	100%	9.20-159.00 mg/l	100%
Cl	450 mg/l	109.00-118.00 mg/l	100%	118.00-148.00 mg/l	100%
Turbidity	10 NTU	1.37-11.00 NTU	67%	1.05-2.26 NTU	100%
E. coli	0 CFU/100ml	0-30 CFU/100ml	67%	1 -0 CFU/100ml	67%
Total Plate Count	1000 CFU/100ml	200-274 CFU/100ml	100%	0-0 CFU/100ml	100%
OVERALL COMPLIANCE			88.94%		90.77%

Performance review -
 Rustenburg WWTW (DAF) met the set quality target of 90% in the second quarter.

Reasons for variance-
 Inflow exceeds design capacity.

Remedial measures-
 RLM Council approved upgrade of the plant. Awaiting confirmation of availability of funds from RLM.

2.7 KPI 6: NUMBER OF WATER TREATMENT WORKS OPERATED

RWST is responsible for the operation and maintenance of the following two water treatment plants:

Kloof Water Treatment Works (2 Mℓ/d design capacity)
 Bospoort Water Treatment Works (12 Mℓ/d design capacity)

Water and Sanitation Services South Africa (Pty) Ltd, trading as Water Solutions Southern Africa (WSSA) has been contracted by the Rustenburg Water Services Trust (RWST) for the operation these plants.

The volumes treated by each plant for the period under review are captured below.

Table 16: Volumes treated by each plant for the period under review are captured below:

PLANT	CAPACITY	July - December 2023
Bospoort WTW	12 Mℓ/d	11.34Mℓ/d
Kloof WTW	2 Mℓ/d	0.78Mℓ/d

2.8 KPI 7.1: PLANT AVAILABILITY, NUMBER OF WATER TREATMENT WORKS MAINTAINED

There are 2 (two) water purification plants maintained in terms of agreed standards, namely Bospoort and Kloof Water Purification Works.

KPI 7.2: PLANT MAINTENANCE OF WATER TREATMENT WORKS MAINTAINED

The successful operation of a Water Treatment Works is largely dependent on the installed machinery and equipment to ensure that the water can be treated according to the process the plant was designed for.

It is thus vital that all machinery and equipment be kept in good working condition and available for use when required.

Regular servicing and preventative maintenance however require that equipment be taken out of services for a certain period. It will thus not always be possible to obtain a 100% of all equipment availability and the target of 85% availability is set.

RWST has contracted WSSA to operate and maintain the two water treatment plants under its control.

Monthly spot checks are performed by RWST to verify availability. The availability of the four wastewater treatment works is indicated below.

Table 17: Availability of the 2 Water Treatment Plants

PLANT	CAPACITY	AVAILABILITY	
		TARGET	July - December 2023
Bospoort WTW	12 Ml/d	85%	100%
Kloof WTW	2 Ml/d	85%	100%
Overall plant availability			100%

Performance review -
Both plants exceeded the target of 85%.

Reasons for variance -
Turnaround time for maintenance is quicker than allowed for.

Remedial Measures -
None required.

2.9 KPI 8: PERCENTAGE COMPLETION OF WATER TREATMENT PLANTS - CIVIL WORKS UPGRADING PROJECT (BOSPOORT WTW)

Bospoort Water Treatment Works underwent upgrading under the contract of the RWST. The Civil component of the work was completed in November 2020.

The Mechanical and Electrical component of the work has not yet been procured.

Table 18: Bospoort WTW Construction Progress

BOSPOORT WTW CONSTRUCTION PROGRESS			
CONTRACT	PROGRESS		PROGRESS FOR PERIOD
	25 September 2023	25 December 2023	
Civil	100%	100%	-
M&E	-	-	-
OVERALL CONSTRUCTION PROGRESS	-	-	-

Performance review -
Not applicable

Reasons for variance –
Not applicable

Remedial Measures -
Not applicable

2.10 KPI 9: VOLUME OF POTABLE WATER SUPPLIED TO RLM IN ACCORDANCE WITH THE WATER SUPPLY AGREEMENT

Bospoort Water Treatment Works has a design capacity of 12 Mℓ/d and Kloof Water Treatment Works a capacity of 2 Mℓ/d. WSSA has been contracted by the RWST for the operation of these plants.

The average volumes of water supplied to RLM is in accordance with the water supply agreement for the period under review, is tabled below.

Table 19: Average volumes of water supplied to RLM

PLANT	CAPACITY	PERFORMANCE	
		Combined target: 10.8 Mℓ/d	July - December 2023
Bospoort WTW	12 Mℓ/d	9.6 Mℓ/d	11.34Mℓ/d
Kloof WTW	2 Mℓ/d	1.2 Mℓ/d	0.78Mℓ/d
Average			12.12Mℓ/d

Performance review -

Only Bospoort WTW met the required production rates for the period under review.

Reasons for variance -

Loadshedding.

Remedial Measures -

Kloof is not exempted from loadshedding by Eskom.

2.11 KPI 10: PERCENTAGE COMPLIANCE IN THE TREATMENT OF WATER FOR POTABLE USE IN TERMS OF DWS STANDARDS

The required standard for both Bospoort Water Treatment Works as well as Kloof Water Treatment Works is regulated by SANS 241.

In accordance with the water supply agreement, RWST must supply potable water to RLM which is fully compliant with SANS 241 as in table 20 below from the Bospoort and Kloof Water Treatment Works.

Table 20: SANS 241 Standards

SANS 241 Determinant	Performance standard
Colour Pt-Co	< 15
Treated Conductivity (mS/m)	< 170 mS/m
TDS	< 1200 mg/l
pH	> 5.0 < 9.7 pH Units
Turbidity NTU	< 1 NTU
Calcium (mg/l)	< 150 mg/l
Faecal Coliform	< 0 /100m ^l
Chloride (mg/l)	< 300 mg/l
Fluoride (mg/l)	< 1.5 mg/l
Magnesium (mg/l)	< 70 mg/l
Sulphate (mg/l)	< 250 mg/l
Heterotrophic Plate Count cfu/m ^l	< 1000 /m ^l
Total Coliform cfu/100m ^l	< 10 cfu/100m ^l
Free Chlorine (mg/l)	< 5 mg/l

BOSPOORT WTW

Table 21: The quality performance achieved by Bospoort WTW for the period of review is tabled below.

Determinant	Performance standard (SANS 241)	Performance 1 July - 25 September 2023		Performance 26 September – 25 December 2023	
		Performance achieved	% Compliance	Performance Achieved	% Compliance
Colour Pt-Co	< 15	7-12	100%	7-9	100%
Treated Conductivity (mS/m)	< 170 mS/m	107-117 -S/m	100%	99-117 -S/m	100%
TDS	< 1200 mg/l	716-787 mg/l	100%	666-783 mg/l	100%
pH (pH units)	> 5.0 < 9.7 pH units	7.97-8.00 pH Units	100%	8.01-8.44 pH Units	100%
Turbidity NTU	< 1 NTU	0.31-0.89 mg/l	100%	0.42-0.86 mg/l	100%
Calcium (mg/l)	< 150 mg/l	78.2-83.7 mg/l	100%	85.4-99.1 mg/l	100%
Faecal Coliform	< 0 cfu/100m ^l	0 - 0 cfu/100m ^l	100%	0 - 0 cfu/100m ^l	100%
Chloride (mg/l)	< 300 mg/l	138.00-141.00 mg/l	100%	127.00-161.00 mg/l	100%
Fluoride (mg/l)	< 1.5 mg/l	0.13-0.30 mg/l	100%	0.21-0.29 mg/l	100%
Magnesium (mg/l)	< 70 mg/l	42.1-44.3 mg/l	100%	39.0-49.6 mg/l	100%
Sulphate (mg/l)	< 250 mg/l	207-210 mg/l	100%	158.00-206.00 mg/l	100%
Heterotrophic Plate Count cfu/m ^l	< 1000 /m ^l	1-181 cfu/m ^l	100%	112-323 cfu/m ^l	100%
Total Coliform cfu/100m ^l	< 10 cfu/100m ^l	0-3 cfu/m ^l	100%	0-0 cfu/m ^l	100%
Free Chlorine (mg/l)	< 5 mg/l	1.38-2.14 mg/l	100%	1.33-1.36 mg/l	100%
WATER QUALITY OVERALL COMPLIANCE:			100%		100%
PLANT CAPACITY = 12 M^l/d: QUALITY PERFORMANCE TARGET > 95% of plant capacity					

Performance review -Bospoort WTW met the set target of 95%.

Reasons for variance -
None required.

Remedial measure-
None required.

KLOOF WTW

The Kloof Water Treatment Works is a small, very old facility that used to be one of the first sources of potable water to Rustenburg. It is fed from the Dorpspruit, which originates in the Magalies mountain range from springs, and the water quality is normally of a very high standard. Average production for the period under review is at 0.74Mℓ/d.

Table 22: The quality performance achieved by Kloof WTW for the period of review is tabled below.

Determinant	Performance standard (SANS 241)	Performance 1 July – 25 September 2023		Performance 26 September – 25 December 2023	
		Performance achieved	% Compliance	Performance achieved	% Compliance
Colour Pt-Co	< 15	6.99-6.99	100%	6.99-6.99	100%
Treated Conductivity (mS/m)	< 170 mS/m	9.18-11.82 -S/m	100%	8.98-12.96 -S/m	100%
TDS	< 1200 mg/l	61.50-79.33 mg/l	100%	60.00-86.80 mg/l	100%
pH (pH units)	> 5.0 < 9.7 pH units	7.33-7.94 pH Units	100%	7.82-8.15 pH Units	100%
Turbidity NTU	< 1 NTU	0.30-0.84 mg/l	100%	0.43-0.72 mg/l	100%
Calcium (mg/l)	< 150 mg/l	2.00-7.37 mg/l	100%	2.66-4.47 mg/l	100%
Faecal Coliform	< 0 cfu/100mℓ	0 - 0 cfu/100mℓ	100%	0 - 0 cfu/100mℓ	100%
Chloride (mg/l)	< 300 mg/l	5.19-20.76 mg/l	100%	7.14-8.54 mg/l	100%
Fluoride (mg/l)	< 1.5 mg/l	0.08-0.19 mg/l	100%	0.11-0.15 mg/l	100%
Magnesium (mg/l)	< 70 mg/l	43.19-4.88 mg/l	100%	2.53-7.42 mg/l	100%
Sulphate (mg/l)	< 250 mg/l	2.68-32.44 mg/l	100%	4.40-6.59 mg/l	100%
Heterotrophic Plate Count cfu/mℓ	< 1000 /mℓ	0-5 cfu/mℓ	100%	0-0 cfu/mℓ	100%
Total Coliform cfu/100mℓ	< 10 cfu/100mℓ	0-0 cfu/mℓ	100%	0-0 cfu/mℓ	100%
Free Chlorine (mg/l)	< 5 mg/l	0.25-0.71 mg/l	100%	0.23-0.26 mg/l	100%
WATER QUALITY OVERALL COMPLIANCE:			100%		100%
PLANT CAPACITY = 2 Mℓ/d. QUALITY PERFORMANCE TARGET > 95% of plant capacity					

Performance review -
Kloof met the set target of 95%.

Reasons for variance –
None required.

Remedial Measures -
None required.

Table 23: Summary of the quality performance achieved by the 2 WTW for the period of review, is tabled below.

PLANT	CAPACITY	PERFORMANCE	
		Target @ 90% capacity	July - December 2023
Bospoort WTW	12 Ml/d	95%	100%
Kloof WTW	2 Ml/d	95%	100%
Overall performance			100%

Performance review – Both Bospoort and Kloof WTW met the set target of 95%.

Reasons for variance -
None required.

Remedial measure-
None required.

3. GOOD GOVERNANCE

The outstanding Auditor General's findings from the 2022/23 audit, for the Trust, will be addressed in the current financial year, 2023/2024. The findings from the previous audit are as follows:

RUSTENBURG WATER SERVICES TRUST POST AUDIT ACTION PLAN						
AG Issue	RWST Plan	Responsible person	Due Date	Percentage Completion		
				Q1	Q2	Q3
Revaluation not done	Trust will do the revaluation this year and back date to 30 June 2022	Board and CFO	31/07/2023	We have established that we cannot use the RLM consultant through a section 32 appointment. The Trust now needs to go out on tender but this has not yet been done. I have been too busy with the AFS and audit prep.		
Financial Instruments	Disclosure issue in AFS. There is a lot of disclosure issues that were raised by the AG. The Trust will make sure that all the issues raised by the AG will be addressed when compiling the 2023 AFS.	CFO	31/08/2023	Final draft financial statements submitted.		
Actual versus budget comparison	Disclosure issue in AFS. There is a lot of disclosure issues that were raised by the AG. The Trust will make sure that all the issues raised by the AG will be addressed when compiling the 2023 AFS.	CFO	31/08/2023	Final draft financial statements submitted.		
Accounting policy on contingent liabilities not disclosed	Disclosure issue in AFS. There is a lot of disclosure issues that were raised by the AG. The Trust will make sure that all the issues raised by the AG will be addressed when compiling the 2023 AFS.	CFO	31/08/2023	Final draft financial statements submitted.		
Mid-year performance assessment not submitted to the Parent Municipality within the legislated timeframe	The report was submitted but the email could not be found. We have already submitted the report this year	RCC	20/01/2023	Only due in Q3		
Trust does not have a fraud prevention plan	The Trust will compile and implement a fraud prevention plan	Board and CFO	31/05/2023	Tabled for approval at the next Board meeting on 19 October 2023.		
Lack of process on consequence management	The Trust will compile and implement a consequence management report	Board and CFO	31/05/2023	Tabled for approval at the next Board meeting on 19 October 2023.		
Under statement of contingent liability	Disclosure issue in AFS. There is a lot of disclosure issues that were raised by the AG. The Trust will make sure that all the issues raised by the AG will be addressed when compiling the 2023 AFS.	CFO	31/08/2023	Final draft financial statements submitted.		

RUSTENBURG WATER SERVICES TRUST POST AUDIT ACTION PLAN						
AG Issue	RWST Plan	Responsible person	Due Date	Percentage Completion		
				Q1	Q2	Q3
Over impairment of RLM receivable	recovery. This over statement was caused by the AG and not by the trust. It is however now written off and cannot effect future AFS's	CFO	Already sorted out	100%		
Multi year business plan not approved	The Trust will approve its multi year business plan	Board and CFO	31/05/2023	To be approved at the Board meeting in November 2023.		
Information not provided to the AG	There were a number of information that was not provided to the AG. This is due to the fact that the CEO resigned and his last day was 30 June 2022. Most of the info was compiled and kept by the CEO, the CFO was the only person in the Trust and he could not do everything and find all the information required. For the 2023 AFS the Board of Trustees will most probably still be involved and all information will be available.	New CFO	1 September 2023 to 30 November 2023	Only due in Q1 of the 2023/24 financial year. This is of big concern because the trust will not have a CEO or CFO during the 2023 audit.		
SCM - Indwe services for Insurance	The AG believes that there were no competitive bidding process followed in contracting with Indwe insurance. The Trust followed the quotation process to appoint Indwe as their fee was below R 200,000 and the insurance part of the expenses cannot be compared between various insurance houses because there are to many variables and exclusion clauses.	Board and CFO	31/07/2023, this is the date that the new year insurance needs to be paid.	Even though I do not agree with the AG, the Trustees will go out on tender for the insurance of the Trust. We follow what the AG is saying here every municipality needs to go out on tender for their bank charges every year and this would be ridiculous.		

4. FINANCIAL PERFORMANCE

Financial statements for the period ending 25 December 2023 are submitted to RLM by the RWST CFO.