



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

P/Bag x 6041, East London, 5200

Tel: 043 604 5400
Fax: 043 742 0843
Email: lucasa@dwa.gov.za

enquiries: Mr. A.B. Lucas
Ref: 16/2/7/Q300/D1

The Municipal Manager
Chris Hani District Municipality
Private Bag X7121
Queenstown
5320

Attention: **Mr. M. Dungu**

NON-COMPLIANCE FOR CRADOCK WASTE WATER TREATMENT WORK

Above has reference below;

The monitoring of effluent quality and reporting of results, any failures and of intervention actions taken is a legal requirement in terms of section 9 of the Water Services Act 108, 1997. The Department of Water & Sanitation needs to exercise the Regulatory role in terms of section 62 of National Water Act (108 of 1997).

The Department of Water & Sanitation (Water Regulation & Use Directorate) conducted compliance assessment at the Cradock Waste Water Treatment Plant on the 16th September 2014. The plant is in a dysfunctional state as per the observations and as per the discussions with the superintendent on site. The following were some of the concerns identified;

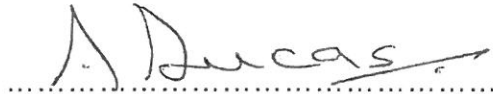
- Aerators are not functioning properly
- Ponds are not well maintained they are full of sludge
- Grit channel is not cleaned
- And that the plant is discharging non complying effluent to the Fish River via Marias Slout.

Test results for samples taken on the 09th September 2014 by the Department indicated amounts of **35 000** colonies E.coli and **43 000** colonies of F. Colifoms which are way above the limit required for this plant as per its authorization. The major concern is that Fish River is used downstream by other users for different types of uses/purposes. Furthermore the wastewater system did not comply for Ammonia, Chemical Oxygen Demand and Oxygen Absorbed. For ease of reference attached are results from the lab.

It must also be noted that this non compliance is in breach of the authorization issued for this plant by Department.

Your urgent attention is required to address this non compliance, the Water Services Authority must submit to the Department an action plan to address this challenge within 14 days of receiving this correspondence.

Yours Faithfully



.....
Director: Water Regulation & Use
Mr. A.B. Lucas

.....
25/9/2014

Date

Cc: Mr. M. Shasha

: Mr. L.D. Mashiya



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

**SITE VISIT
(Cradock WWTW)
Chris Hani DM**

FILE NO: 16/2/7/Q300/D1

**DIRECTORATE: WATER REGULATION & USE
SUB-DIRECTORATE: RESOURCE PROTECTION & WASTE**

DATE: 16TH SEPTEMBER 2014

MR. N. MATANA (DEPARTMENT OF WATER & SANITATION)

Introduction

As part of compliance assessment & monitoring under water regulation & use, it is a requirement to regularly assess and monitor municipal wastewater treatment works performance as per norms and standards set by the minister under section 9 of Water Services Act and of the requirement of section 62 of the same act. Furthermore to also make sure section 19(I)(b) of National Water Act, 1998 is adhered to. The assessment is also in-line with the requirements of department of water affairs incentive based programme called green drop regulatory system that seeks to identify and develop the core competencies required for the sector that if strengthened, will gradually and sustainably improve the level of wastewater management.

Purpose of the site visit

The purpose of the site visit was to do compliance assessment of the Cradock WWTW in line with our regulatory function as the Department of Water Affairs. The compliance assessment was to look at the overall operations of the plant which will include;

- ✓ Processor Control Classification
 - ✓ Good working condition of the plant
 - ✓ Valid Plant classification
 - ✓ Validity of the exemption
 - ✓ And compliance to the exemption
-

Site visit Findings

There are 5 process controllers, 1 casual and superintendent for the plant. At the time of the visit two operators, 1 casual and a superintendent were on duty. Superintendent reported that the plant is not operating well since March 2014. Hlumisa is on site doing maintenance of aerators that are problematic and not functioning well. At the time of arrival the plant was not operational; no flow was coming in because there was no electricity. The superintendent mentioned that currently the plant is discharging non compliant effluent to the Fish River. The plant has two inflows from the township and town.

- ✓ 4 process operators are classified as class I and superintendent is class IV
- ✓ Classification certificates for process controllers not displayed on the wall, only plant classification displayed.
- ✓ Testing equipment is calibrated monthly

- ✓ Electrical Conductivity, pH, COD, phosphate and nitrates for both influent & Effluent) are done operationally. Currently these tests are not done because the plant is not operating properly.
- ✓ Housekeeping is properly done.
- ✓ Process controllers have not attended training in the past 2 years.
- ✓ Inflow meter is operational
- ✓ Screens are removed and disposed to the landfill site outside the plant premises.
- ✓ The grit channel was not well maintained, too much was observed (*Superintendent mentioned that because there's no inflow they were going to clean and remove the grit*)
- ✓ There are only 2 aerators working at the plant and the rest need maintenance (in total there are 8 aerators available).
- ✓ In one of the aerator chamber grass has grown and this is affecting the overall process of aeration.
- ✓ There are two ponds that are used to return effluent to the inflow. These ponds have too much sludge and need to be desludged. They are in poor state and not maintained properly.
- ✓ All the settling tanks are working well; the tanks will have to be cleaned regularly.
- ✓ The chlorination is gas and is working properly, but at the time of visit there was no electricity.
- ✓ The superintendent mentioned that the final effluent was not complying with the standards.

It must be noted that upon engaging with the superintendent the plant cannot coping with the number of aerators working that is why the final effluent is not complying.



Fig1: (meter sensors inflow)

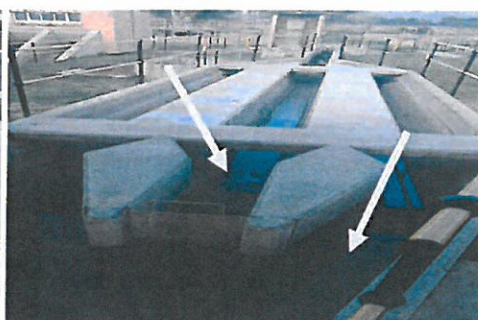


Fig2: Grit channel not cleaned



Fig3: Aerators functional



Fig4: Aerator not functional

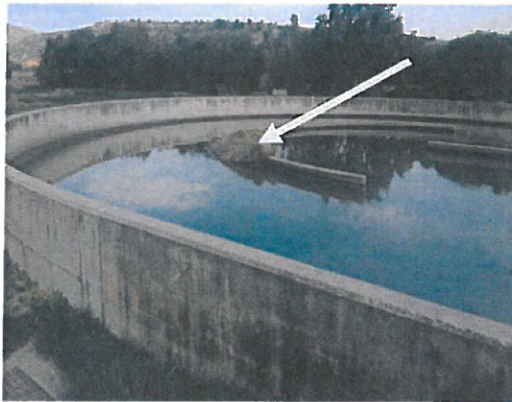


Fig5: Grass growing (Aerator tank)



Fig6: Sludged pond



Fig7: Sludged pond



Fig8: Sludged pond



Fig9: Aerator removed



Fig10: Settling tank (material floating)

Challenges

- Aerators not functioning properly they are not effective.
- Grass growing on the aeration chamber is also affecting the effectiveness of the current working aerators.
- The grit channel is full of grit
- Ponds are not well maintained, grass is growing and they are sludged up.

Recommendations

- It is recommended that the maintenance of other aerators be fast tracked so that the plant can be fully functional properly
- It is recommended that the grass growing inside the aerator tank be removed because it affects the effectiveness of the aerators.
- The grit channel must be cleaned regularly
- The ponds must be well maintained, sludge must be removed.

An action plan should be submitted to the Department detailing how would the identified problems be addressed.

Conclusion

The plant is not functioning well; it has a lot of maintenance that needs to be done especially on the aerators. The plant is discharging to the Fish river water resource the effluent that is not complying with the standards. This is in breach of the exemption issued for the plant. The Water Services Authority must submit an action plan to the Department within 14 days of receiving this report.

Report Compiled by: Mr. N. Matana



Ntsika Matana
Environmental Officer

Rapid • Reliable • Resourceful

20 Pentrich Road, PO Box 3391, Pietermaritzburg, 3200, KwaZulu-Natal, South Africa • S 29°37.934, E 30°22.685
 Tel: +27 (0) 33 346 1444 • Fax: +27 (0) 33 346 1445 • E-mail: talbot@talbot.co.za • http://www.talbot.co.za

2014/09/19

ANALYTICAL REPORT

OUR REF: DWAF EASTERN CAPE 15384/14
 COMPANY NAME: DWAF EASTERN CAPE
 CONTACT ADDRESS: OCEAN TERRACE, MOORE ROAD, QUIGNEY, EAST LONDON
 CONTACT PERSON: N MNOTOZA
 SAMPLE TYPE: STW & RIVER WATER SAMPLES
 DATE SUBMITTED: 2014/09/12

Determinand	Units	Analyses commenced on	Method No	Results	
				15384/14	15385/14
				1.TARKASTAD PONDS 09/09/14 09:30	2.TARKASTAD D/S STW 50M 09/09/14 10:15
Ammonia	mg N/l	17.09.14	64	(26)	(4.08)
Chemical oxygen demand (total)	mg O ₂ /l	16.09.14	3	54	46
Conductivity at 25°C	mS/m	12.09.14	2	150	139
<i>E. coli</i> *	colonies per 100ml	11.09.14	31	4	6
Faecal coliforms*	colonies per 100ml	11.09.14	31	4	6
Nitrate/Nitrite	mg N/l	17.09.14	65	(0.83)	(10.6)
Orthophosphate	mg P/l	17.09.14	66	(3.31)	(2.35)
Oxygen absorbed	mg O ₂ /l	16.09.14	39	8	7
pH at 25°C	pH units	12.09.14	1	7.6	7.9
Suspended solids at 105°C	mg/l	15.09.14	5	18	27

Determinand	Units	Analyses commenced on	Method No	Results	
				15386/14	15387/14
				3.TARKA RIVER @ LIME BANK 09/09/14 11:00	4.GREAT FISH RIVER AT MORTIMER ROAD BRIDGE 09/09/14 11:15
Ammonia	mg N/l	17.09.14	64	(<0.08)	(<0.08)
Chemical oxygen demand (total)	mg O ₂ /l	16.09.14	3	38	25
Conductivity at 25°C	mS/m	12.09.14	2	264	47
<i>E. coli</i> *	colonies per 100ml	11.09.14	31	98	340
Faecal coliforms*	colonies per 100ml	11.09.14	31	130	410
Nitrate/Nitrite	mg N/l	17.09.14	65	(2.60)	(0.58)
Orthophosphate	mg P/l	17.09.14	66	(0.437)	(0.040)
Oxygen absorbed	mg O ₂ /l	16.09.14	39	4	4
pH at 25°C	pH units	12.09.14	1	8.0	8.2
Suspended solids at 105°C	mg/l	15.09.14	5	16	65

Directors: Dr MMJ-F Talbot, Mr FD Urbaniak-Hedley (British), Mrs VR Talbot
 Talbot & Talbot (Pty) Ltd - Company Registration Number 2000/021732/07

Determinand	Units	Analyses commenced on	Method No	Results	
				15388/14	15389/14
				5.GREAT FISH RIVER D/S OF STW CRADOCK 09.09.14 11:40	6.GREAT FISH RIVER @ TAMS LOW WATER BRIDGE 09.09.14 12:00
Ammonia	mg N/l	17.09.14	64	(0.10)	(<0.08)
Chemical oxygen demand (total)	mg O ₂ /l	16.09.14	3	21	21
Conductivity at 25°C	mS/m	12.09.14	2	37	37
<i>E. coli</i> *	colonies per 100ml	11.09.14	31	190	620
Faecal coliforms*	colonies per 100ml	11.09.14	31	210	760
Nitrate/Nitrite	mg N/l	17.09.14	65	(0.38)	(0.36)
Orthophosphate	mg P/l	17.09.14	66	(0.020)	(0.015)
Oxygen absorbed	mg O ₂ /l	16.09.14	39	4	3
pH at 25°C	pH units	12.09.14	1	8.1	8.1
Suspended solids at 105°C	mg/l	15.09.14	5	68	68

Determinand	Units	Analyses commenced on	Method No	Results	
				15390/14	15391/14
				7.CRADOCK STW 09.09.14 12:05	8.GREAT FISH RIVER @ VISRIVIER - N10 09.09.14 14:20
Ammonia	mg N/l	17.09.14	64	(34.1)	(0.13)
Chemical oxygen demand (total)	mg O ₂ /l	16.09.14	3	172	21
Conductivity at 25°C	mS/m	12.09.14	2	91	115
<i>E. coli</i> *	colonies per 100ml	11.09.14	31	35 000	12
Faecal coliforms*	colonies per 100ml	11.09.14	31	43 000	14
Nitrate/Nitrite	mg N/l	17.09.14	65	(0.05)	(1.05)
Orthophosphate	mg P/l	17.09.14	66	(4.12)	(0.179)
Oxygen absorbed	mg O ₂ /l	16.09.14	39	17	2
pH at 25°C	pH units	12.09.14	1	7.3	7.9
Suspended solids at 105°C	mg/l	15.09.14	5	54	15