

WATER BALANCE DISCUSSION PRESENTATION

Pieter Kriel





WATER BALANCE IN THE VOLUMETRIC BALANCE OF WATER THAT ENTERS A FACILITY AND WATER THAT LEAVES THAT FACILITY.

The incoming water may include:

- Water purchased from the water authority
- Water that occurs naturally on the site as ground water or springs
- Any precipitation on the site (stormwater)

Water leaving the site

- Effluent from any industrial processes that use water
- Effluent from other processes such as treatment works on a site
- Stormwater

CATO RIDGE WORKS

1 INTRODUCTION

2 POTABLE WATER

WATER USES

Furnace cooling

Scrubbers

Dust Suppression

Irrigation

Product cooling

Metal Recovery Plant (MRP)

Ablution facilities

3 WATER MEASUREMENT

Water Measurement

4 BALANCING WATER INPUTS AND OUTPUTS

5 GROUNDWATER

6 STORMWATER

7 REDUCING WATER USAGE

Sewage treatment plant

Dust suppression project

MRP

Water Meters

8 CONCLUSION AND RECOMMENDATIONS

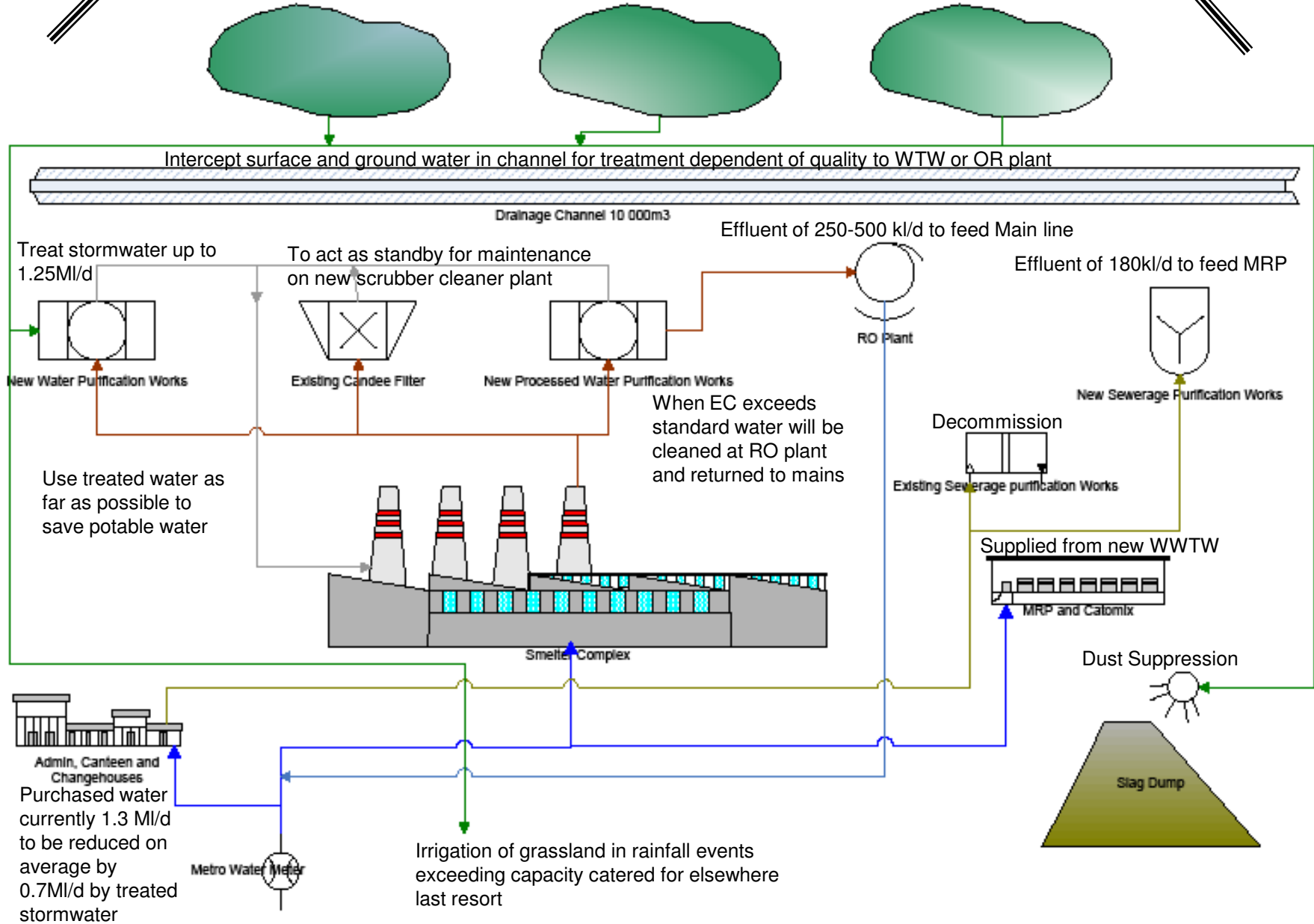
Planning of any upgrading of measuring equipment

Meter No	Location	Average Weekly Usage (kl)	Percentage of Overall
1	Bulk Water Meter	9577.67	
2	Hostel Meter	569.23	6.00%
3	Production Canteen and header tanks	123.63	1.32%
4	High Carbon plant and Ladies change room	50.10	0.51%
5	Men's change room and boilers	440.31	4.65%
6	Fire Hydrants	216.98	2.26%
7	CRA Furnace 1 and 2	113.60	1.19%
7a	CRA	209.33	2.17%
8	Furnace 5 and 6	2174.19	22.34%
8a	Furnace 5 Shell coolers	146.75	2.06%
8b	Furnace 5 Tanks	697.18	7.09%
8c	Furnace 6 Shell coolers	220.62	2.38%
8d	Furnace 6 Tanks	791.62	8.23%

Meter No	Location	Average Weekly Usage (kl)	Percentage of Overall
8e	Silica Manganese Crushing Plant	143.00	1.67%
8f	CRA Meter	77.17	0.82%
9	Furnace 3 and 4	905.56	9.76%
9a	Furnace 3 Shell coolers	132.48	1.32%
10	Filter Plant	82.02	0.86%
10a	Farm house	18.15	0.19%
10b	L Ore meter	12.65	0.13%
11	Furnace 1 and 2 coolers	2744.81	29.29%
12	Lab Engineering and Administration	212.46	2.34%
13	Compressors	0.00	0.00%
14	Silica Manganese	1251.60	13.16%
15	Cement Plant	73.31	0.76%
16		28.99	0.12%

Additional protection to prevent water from leaving site in major storms

Main Retention/storage Dam



Upstream Cut-off Surface and groundwater channel

RECOMMENDATIONS

- Upgrade, service and replace meters and associated pipework
- Install additional meters where required
- Integrate water usage
- Integrated water management
- Upgrade water balance continually