

Case Study C. SKT Electronic CT Water Treatment

– latest report on heat exchangers tubes inspection with test

We are excited to share with you the ongoing amazing results we have had in replacing a chemical CT water treatment system with our fully electronic solution. The Mall Engineer is delighted with the smooth and trouble free operation of this new system, as well as the savings he has seen in labor, chemical costs, water usage and efficiency over the last 3 ½ years.

Our last inspection and water test of the electronic descaling and silver – copper ionization at the Supermal Karawaci (SKT) “North” Cooling Tower on August 3, 2017 has again shown excellent results!

Report on Inspection and Test Results of August 3rd, 2017:

- See bottom of email for actual test results
- Inspection of HE condenser tubes showed complete absence of scale and rust
- No chemicals have been used to treat the CT water since installation in February, 2014
- No blow downs have taken place since installation
- Ph level shows moderately alkaline water. This minimizes the risk of corrosion in piping system
- EC reading was high at 1580. Note: this is of no concern with the Vulcan Scale and Rust control system, because the Vulcan unit electronically ‘modifies’ the structure of the scale-forming molecules – therefore rendering them incapable of attaching themselves to piping or to each other, with the result that the metal and mineral molecules circulate harmlessly in the CT water.
- No scale also means that bacteria have fewer places to grow and thrive

This system, running continuously (7/7) at this busy Mall for more than 3 ½ years, continues to provide the following benefits:

- direct savings in chemical expenses
- savings in energy (clean pipes and valves)
- savings in water consumption (no blow downs)
- savings in water testing expenses (results are more reliable)
- savings in manpower expenses (no manual scale removal)



We are very pleased with the ongoing performance of this technology and are happy to share the two previous (June 2015 and December 2016) detailed Inspection & Test reports if you would like us to send these to you.

If you have any questions about this technology or would like to discuss what it can do in your application we would be pleased to hear from you.

Sincerely,

Rudy G. Schouten
 Director, Pt. Biosolutions Indonesia
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Test Results

Job Number : EV171466
 Customer : PT. Biosolutions Indonesia
 Project Name : SKT
 Customer Ref : 4291.r1/IUS-EV/X/2016

Laboratory Sample I.D :				EV171466-1
Customer Sample I.D :				Cooling Water SP Karawaci
Date Sampled :				03-Aug-17
Sample Matrix :				Water-1
No.	Test Description	Units	Regulatory Limit	Results
Physical Tests				
1	Carbonate Hardness	mg/L	1000	218
2	Conductivity	µS/cm	1200	1580
3	pH	S.U.	7.0 - 8.3	8.62
4	Total Dissolved Solids, TDS	mg/L	2000	984
5	Total Hardness as CaCO ₃	mg/L	500	375
6	Total Suspended Solids, TSS	mg/L	50	2
Anions				
1	Alkalinity Bicarbonate as CaCO ₃	mg/L	80 to 400	189
2	Alkalinity Carbonate as CaCO ₃	mg/L	80 to 400	29
3	Alkalinity Total as CaCO ₃	mg/L	80 to 400	218
4	Chloride, Cl ⁻	mg/L	300	123
5	Sulphate, SO ₄ ²⁻	mg/L	500	228
Nutrients				
1	Nitrite, NO ₂ -N	mg/L	200 to 700	0.006
Total Metals				
1	Iron, Fe	mg/L	0.3	0.022
Microbiology				
1	Legionella pneumophila***	CFU/100 ml	N.A	ND
2	Total Plate Count, TPC	CFU/ml	N.A	1300

Note: Refer to QA/QC – Accuracy page for list of analytical methods used

Regulation Limit based on Superchill Australia

Note: Maximum Recommended Levels

TIMELINE: “Electronic “only”) CT Water Treatment at North Entrance CT. 408 TR. 88L/Sec Flow at Supermal Karawaci Tangerang (SKT).

- **February 24, 2014:** Installation of Vulcan (scale & rust control) and Silver/Copper Ionization (algae/biocide control) systems in 1 of 6 operating Cooling Towers – the North CT at SKT
- **June 25, 2015:** 15 Months Report on Inspection and Water Testing.
- **December 6, 2016:** 32+ Months Report on Inspection and Water Testing.