Watterson Technology Sdn Bhd (787102-X)
No 22, Jalan TPP 1/10, Taman Perindustrian Puchong, 47100 Puchong, Selangor.
Tel. No : 03-8051 2310 Fax No : 03-8066 6292

JAR TEST REPORT

Water Source	: **Brackish River Water**
Sampling date	: 04/12/2019
Reported date	: 04/12/2019
Objective	: To test for Manganese removal using MOX and PAC
Parameter	: Manganese
Test Method	: Chemical Treatment
Sample Size	: 500ml
Initial pH Reading	: 3.85
Initial Manganese Reading	: 0.83ppm

Table 1 shows the dosage of each chemical for each jar test conducted.

Table 1: Jar Test Result

Sample No	MOX 0.1%	PAC	NaOH 10%	Anionic Polymer 0.2%	Manganese level*
Test 1	0.50ml (pH:7.02) (1.0ppm)	0.125ml (pH:4.16) (25ppm)	0.10ml (pH:7.02) (20ppm)	1.25ml (5ppm)	0.048ppm
Test 2	0.35ml (pH:7.05) (0.7ppm)	0.125ml (pH:4.16) (25ppm)	0.08ml (pH:7.05) (16ppm)	1.25ml (5ppm)	0.068ppm
Test 3	-	0.125ml (pH:4.18) (25ppm)	0.07ml (pH:7.03) (14ppm)	1.25ml (5ppm)	0.532ppm

* World Health Organization (WHO) recommended Manganese level in drinking water is 0.05ppm

**Note: a. Jar Test is conducted using PAC as coagulant, MOX as Manganese Oxidiser and Anionic Polymer as flocculation agent

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Conclusion

With the results from the Table 1, we can conclude that by dosing using Test 1 (25ppm of PAC and 1ppm of MOX), it can remove Manganese down to below 0.05ppm which is according to World Health Organization (WHO) drinking water standard of 0.05ppm. This shows the effective of MOX in removing Manganese without having to create an oxidation tank to oxidize Manganese which could incur more Capital Expenditure.