

Surface Tension of Water Samples Before and After Treatment with the Superior Water Conditioner from Superior Manufacturing, LLC.

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KRÜSS Americas
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SUPERIOR MANUFACTURING, LLC._FRESNO, CA

Contact: Scott Sanderson

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Objective: to measure the surface tension of city water, city water with chlorine removed, and well water before and after 1-pass through the Superior Water Conditioner.

Number of Samples: 3

Sample ID:

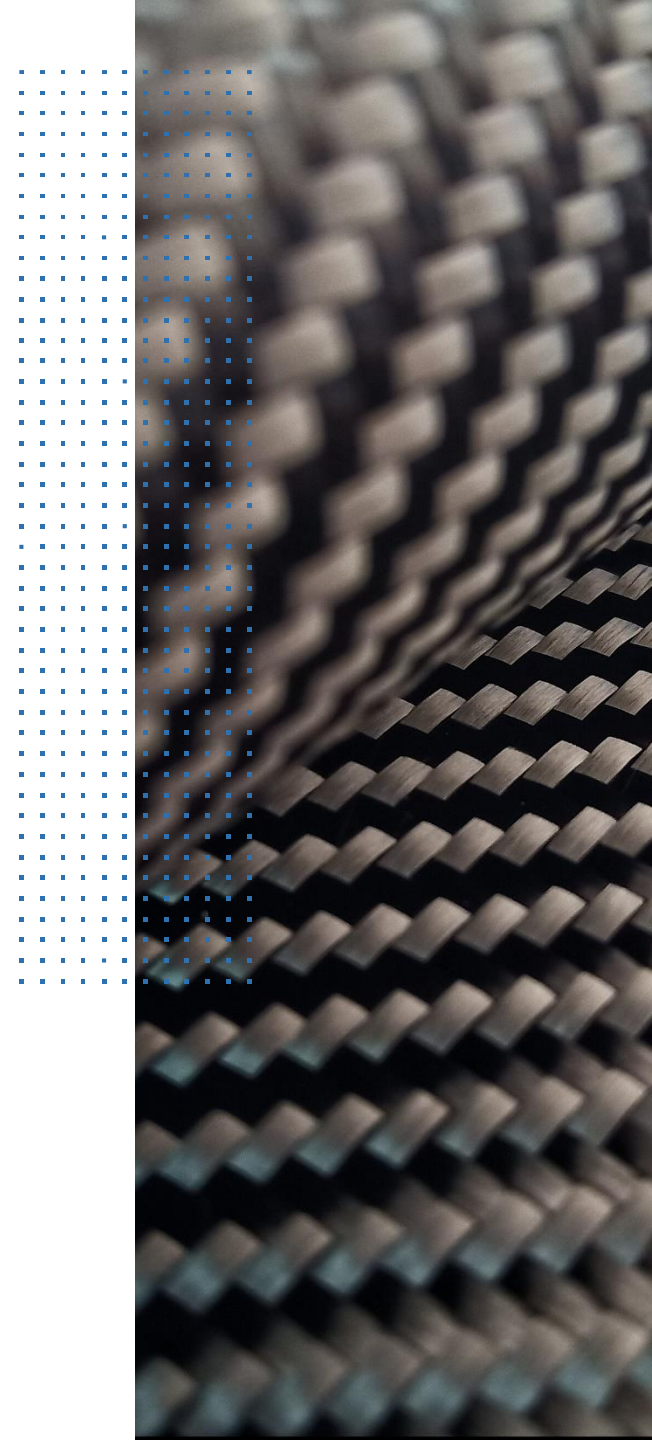
City Water (Fort Wayne, IN)

City Water (chlorine removed) (Fort Wayne, IN)

Well Water (Indiana)

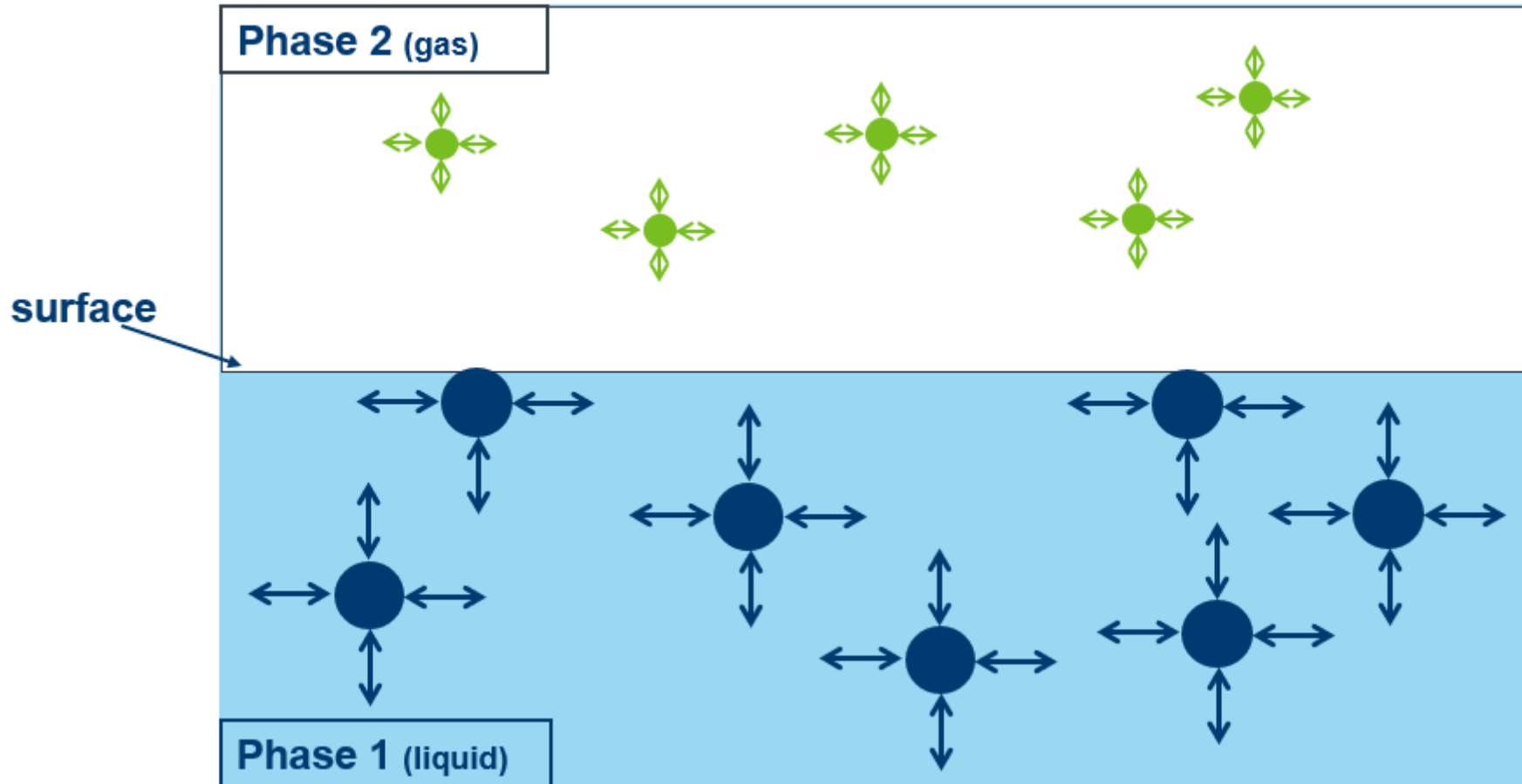
Background Information

01



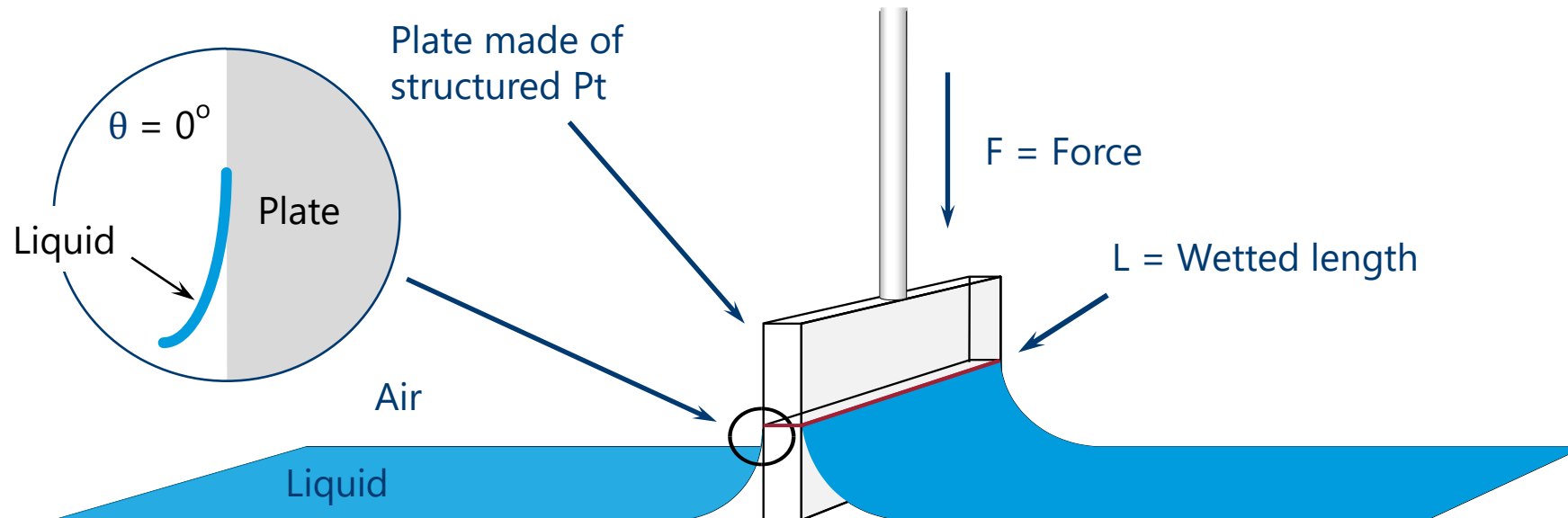
Surface tension is a result of intermolecular interactions within the liquid phase

Interactions with the gas phase can be neglected



The Wilhelmy method measures the force of a liquid wetting a Pt plate

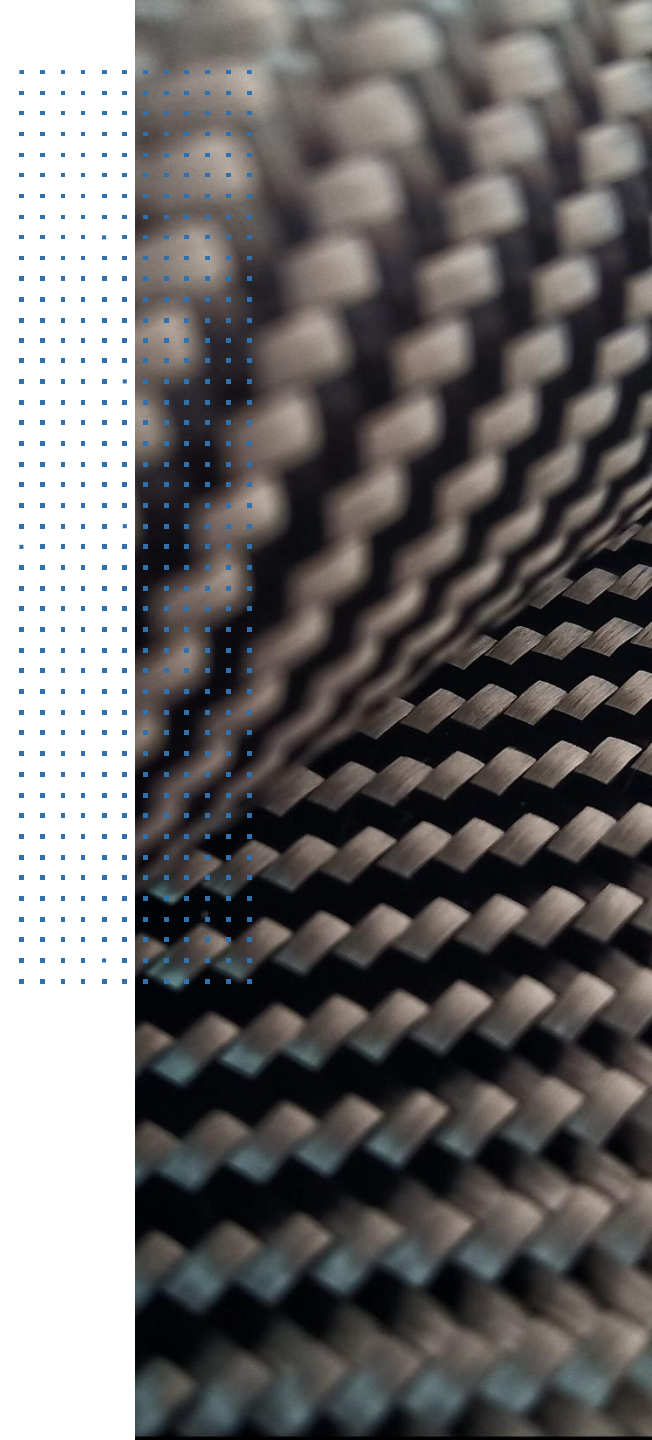
Direct measurement of surface tension without correction



$$\sigma = \frac{F}{L \cos \theta}$$

Instruments and Procedure

02



Procedure

1. The Tensió tensiometer from KRUSS was validated by measuring surface tension of distilled at room temperature using a cleaned, flame-treated Wilhelmy Plate. Literature value states that surface tension of distilled water should be 72.8 mN/m +/- 1 at 20°C. The distilled water measured 72.28 mN/m prior to testing the samples from Superior Manufacturing, LLC.
2. The surface tension of CITY WATER with CHLORINE was measured at room temperature using a cleaned, flame-treated Wilhelmy Plate.
3. The sample of CITY WATER with CHLORINE was passed through the Superior Water Conditioner 1x by Scott Sanderson and the sample was measured using a cleaned, flame-treated Wilhelmy plate.
4. Steps #2 and #3 were repeated for the remaining samples, CITY WATER CHLORINE REMOVED and WELL WATER.

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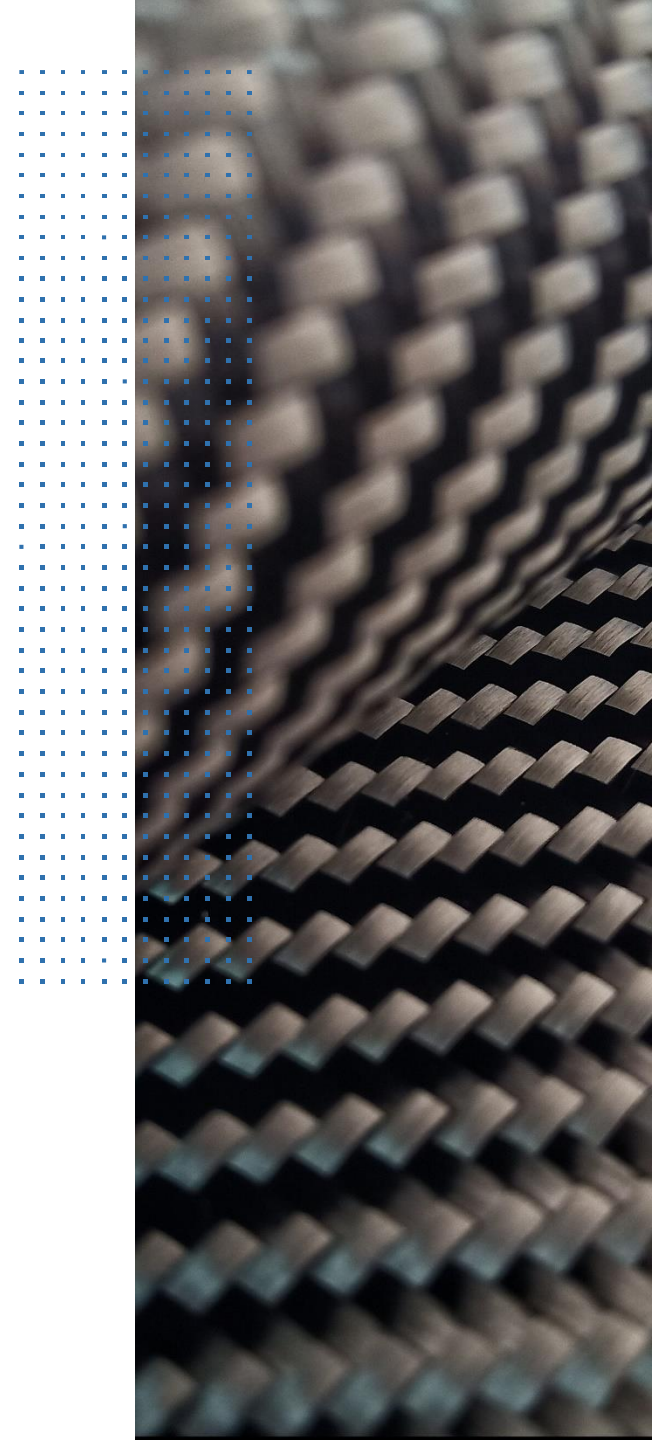
Instrument: Tensiio with ADVANCE software



Results and Conclusion

All samples were tested before and after treatment for surface tension reduction and the results are as follows:

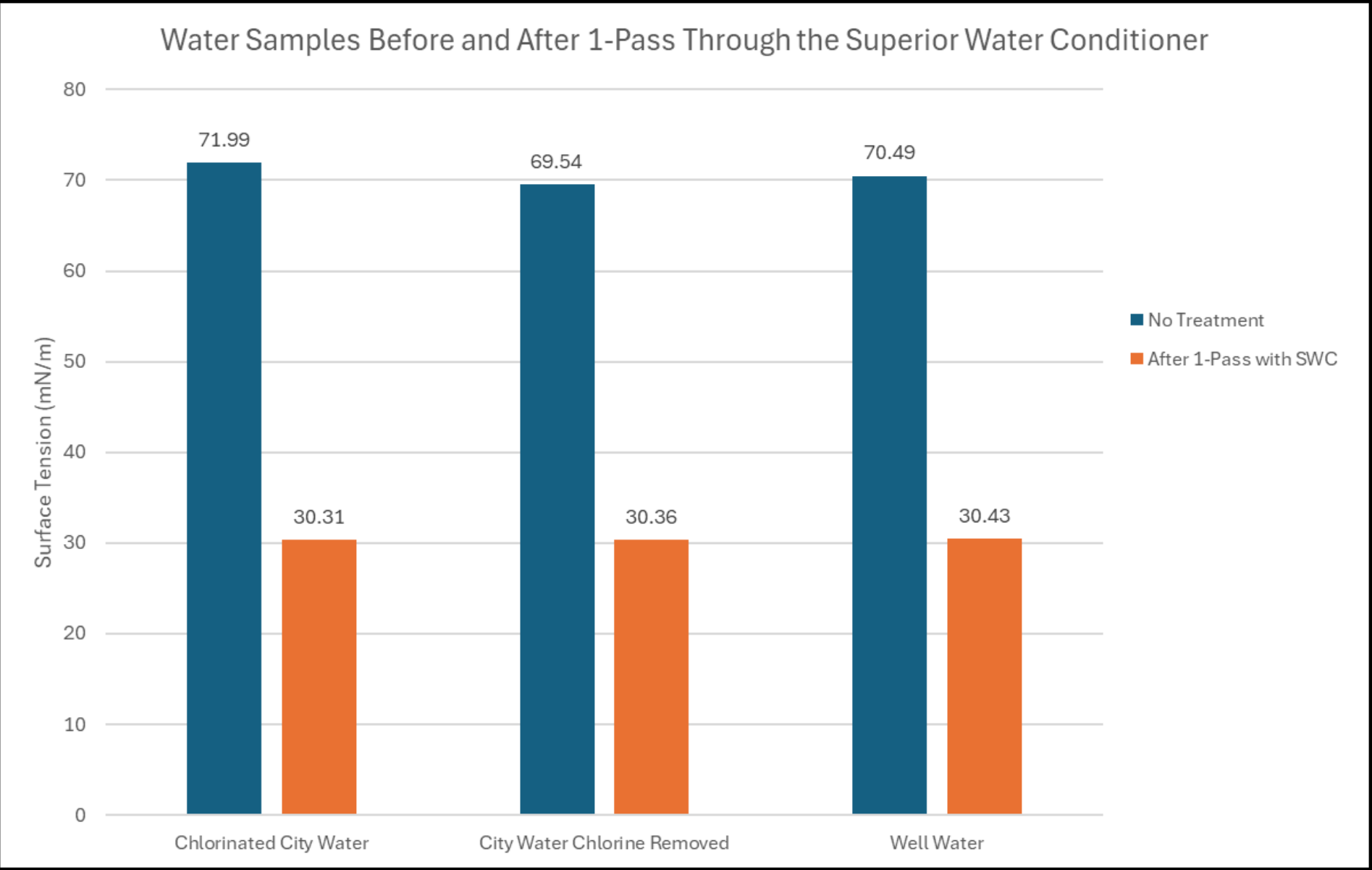
03



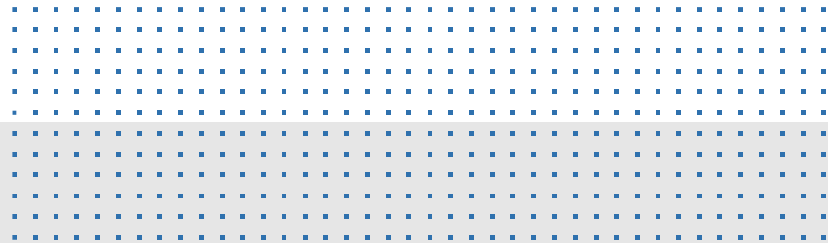
Surface Tension of Samples using Wilhelmy Plate Method

	Surface Tension of sample with <u>NO</u> Superior Water Conditioner treatment (mN/m)	Surface Tension of sample <u>AFTER</u> the Superior Water Conditioner treatment (mN/m)
City Water with Chlorine	71.99	30.31
City Water Chlorine Removed	69.54	30.36
Well Water	70.49	30.43

Surface Tension of Samples using Wilhelmy Plate Method



Let us know if you have any questions!



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