

State of Florida



## Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

**-M-E-M-O-R-A-N-D-U-M-**

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**DATE:** February 26, 2018  
**TO:** Carlotta S. Stauffer, Commission Clerk, Office of Commission Clerk  
**FROM:** Penelope Buys, Engineering Specialist, Division of Engineering *ly pss*  
**RE:** Docket No. 20170166-WS- Application for limited proceeding rate increase in Orange County by Pluris Wedgefield, Inc.

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Please file the attached email answers to staff's questions in the above mentioned docket file.

Thank you

## Penny Buys

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**From:** Martin S. Friedman <mfriedman@ff-attorneys.com>  
**Sent:** Friday, February 23, 2018 1:32 PM  
**To:** Penny Buys  
**Cc:** Robert Graves; Maurice Gallarda; Joe Kuhns  
**Subject:** RE: Docket No. 20170166-WS Pluris Wedgefield Limited Proceeding  
**Attachments:** Hard Water Response.docx

Penny,  
Please see the attached. Let me know if you need anything further.  
Regards, Marty

**MARTIN S. FRIEDMAN, ESQ.**  
*Shareholder*



766 North Sun Drive  
Suite 4030  
Lake Mary, FL 32746  
T: 407.830.6331  
F: 407.878.2178  
C: 407.310.2077  
[mfriedman@ff-attorneys.com](mailto:mfriedman@ff-attorneys.com)  
[Facebook | ff-attorneys.com](#)

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**From:** Penny Buys [<mailto:PBuys@PSC.STATE.FL.US>]  
**Sent:** Friday, February 23, 2018 10:27 AM  
**To:** Martin S. Friedman <mfriedman@ff-attorneys.com>  
**Cc:** Robert Graves <[RGRAVES@PSC.STATE.FL.US](mailto:RGRAVES@PSC.STATE.FL.US)>  
**Subject:** Docket No. 20170166-WS Pluris Wedgefield Limited Proceeding

Mr. Friedman,

Regarding the water softener pro forma project, please provide documentation that shows 3 to 4 grains of hardness is an acceptable level of hardness for water. If possible please provide a scale of water hardness. Include in this response when issues would arise at the different levels of hardness. Please contact me if you have any questions.

Thank you,

*Penelope Buys*  
*Engineering Specialist*  
*Division of Engineering*  
*Florida Public Service Commission*  
*(850) 413-6518*  
*Fax – (850) 413-6519*  
[pbuys@psc.state.fl.us](mailto:pbuys@psc.state.fl.us)

The effects of hard water are observed in residential use such as cleaning glassware, utensils and vehicles. In addition, residential laundry washing with hard water is observed in the linen and clothes feeling stiffer than water that is soft. Hard water often produces a noticeable deposit of precipitate (e.g. insoluble metals, soaps or salts) in containers, including "bathtub ring". These effects occur by a variety of dissolved polyvalent metallic ions, predominantly calcium and magnesium cations, although other cations including aluminum, barium, iron, manganese, strontium and zinc.

In addition to residential use, hard water is responsible for most scaling build up in water distribution pipelines, and water heaters, shortening the life of water heaters.

Hardness classification and ranges have been quantified and the standard table for hardness with relative values is presented below.

The degree of hardness standard as established by the American Society of Agricultural Engineers (S-339) and the Water Quality Association (WQA) is shown in the following table.

<b>Degree of Hardness</b>	<b>Grains per Gallon (gpg)</b>	<b>Milligrams per Liter (mg/l)</b>
Soft	< 1.0	< 17.0
Slightly Hard	1.0 - 3.5	17.1 - 60
Moderately Hard	3.5 - 7.0	60 - 120
Hard	7.0 - 10.5	120 - 180
Very Hard	> 10.5	> 180

Wedgefield's raw water from the aquifer beneath the geographical area is very hard with hardness in excess of the 10.5 grains per gallon (greater than 180 mg/l. Pluris Wedgefield received numerous complaints in the last rate case regarding the effects of hardness, including "white film" on customer vehicles during washing, glassware and kitchen pots having build up and faucets with calcium build up to a degree of having to replace the fixtures. Following replacements of the previous softeners, Pluris has not received complaints regarding hard water effects.

## Penny Buys

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**To:** Robert Graves  
**Subject:** RE: Question about Pluris

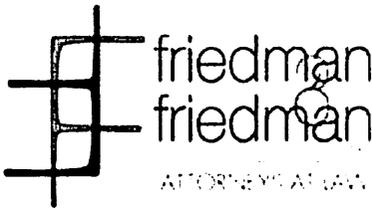
**From:** Martin S. Friedman [<mailto:mfriedman@ff-attorneys.com>]  
**Sent:** Thursday, February 22, 2018 3:56 PM  
**To:** Robert Graves  
**Subject:** RE: Question about Pluris

Robert,

One of guys at the plant says the original softeners were installed in 1996. After 11 years of use, the original softeners were failing and UI installed new softeners in 2008. After 5 years the UI softeners were not meeting treatment levels and were experiencing ongoing mechanical and SCADA related problems so after 10 years of use, Pluris replaced them with the current units with commercial AdEdge softeners. AdEdge's engineering group designed the commercial softeners for a 20 year design life.

Marty

**MARTIN S. FRIEDMAN, ESQ.**  
*Shareholder*



766 North Sun Drive  
Suite 4030  
Lake Mary, FL 32746  
T: 407.830.6331  
F: 407.878.2178  
C: 407.310.2077  
[mfriedman@ff-attorneys.com](mailto:mfriedman@ff-attorneys.com)  
[Facebook](#) | [ff-attorneys.com](http://ff-attorneys.com)

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