Pipeline Cooling

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The Pipeline Cooling team aims to find solutions to reduce the amount of heat transferred to water in uncovered conduction lines leading to AguaClara plants. Heat transferred to influent water is significant because the sedimentation tank plate settlers are reliant on minimal fluid circulation, which increases as the water temperature increases.

Current & Future Research

Prompted by the partially exposed pipeline leading to the San Nicolas AguaClara plant, the Pipeline Cooling team began research focused on examining possible treatments that would reduce the amount of heat transferred to the influent water. One proposed solution would paint the exposed pipeline with "cool roof coatings." These coatings are designed to reduce the effective heat transfer from the sun but have no effect on the impact of the ambient air. Product inquiries were made with two "cool roof coating" paints, AcryShield A590 by National Coatings and NXT Cool Zone Gloss White by NuTech Paint. While these products would decrease the maximum temperature increase of the influent water, the water would still be warmer than ideal and the product cost is very high.

Before significant financial investment is made in expensive coatings, more research is required to understand the impact of temperature increase on sedimentation tank performance. It may become clear that redesigning the sedimentation tank and plate settlers to accommodate warmer influent water is a more efficient and effective solution than trying to control the heating effects of the natural environment.

Team Members

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	Challenges	Tasks	Symposium	Final Presentation	Final Report
Spring '14				? Unknown Attachment	? Unknown Attachment

File	Modified
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