

Sand Removal: Past Industry Operation in Present Water Treatment Process



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Historical Tuakau Sand Limited Operation



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Historical Tuakau Sand Limited Operation



Historical Puni Sand Dredging Operation



Waikato Water Treatment Plant



Waikato Water Treatment Plant



Waikato Water Treatment Plant

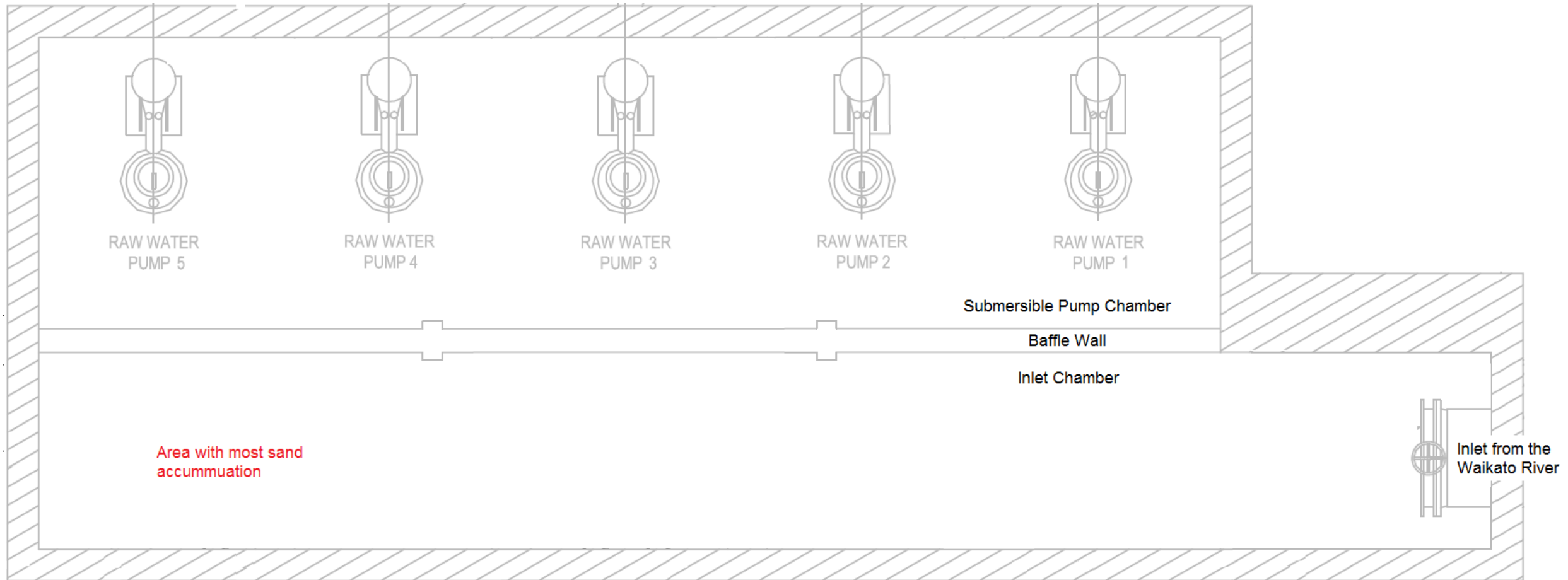


Issues: Pump Wear

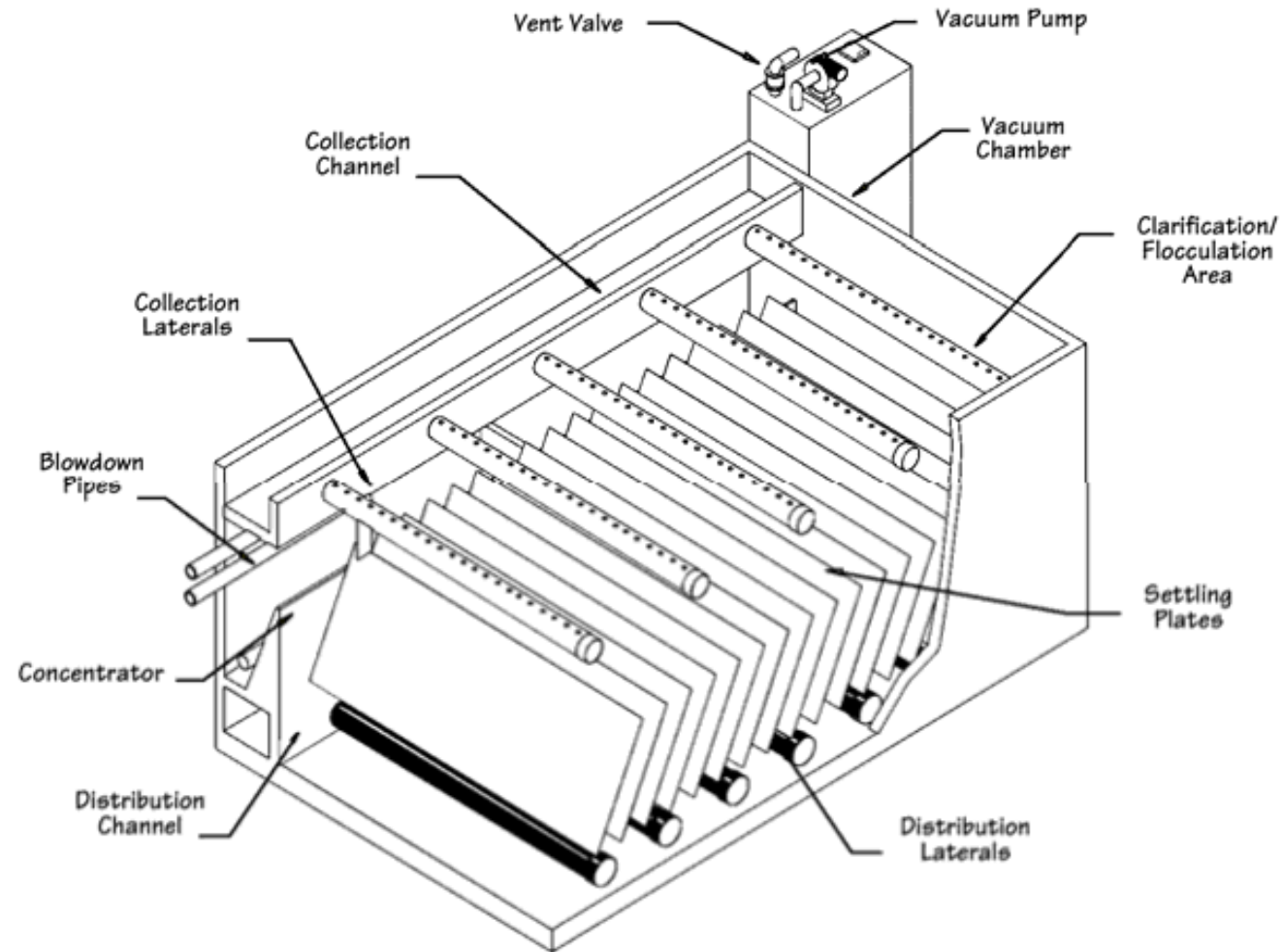


Issues:

Raw Water Wet Well Sand Accumulation



Issues: Clarifier Sand Accumulation



Issues: Clarifier Sand Accumulation



Issues: Clarifier Sand Accumulation



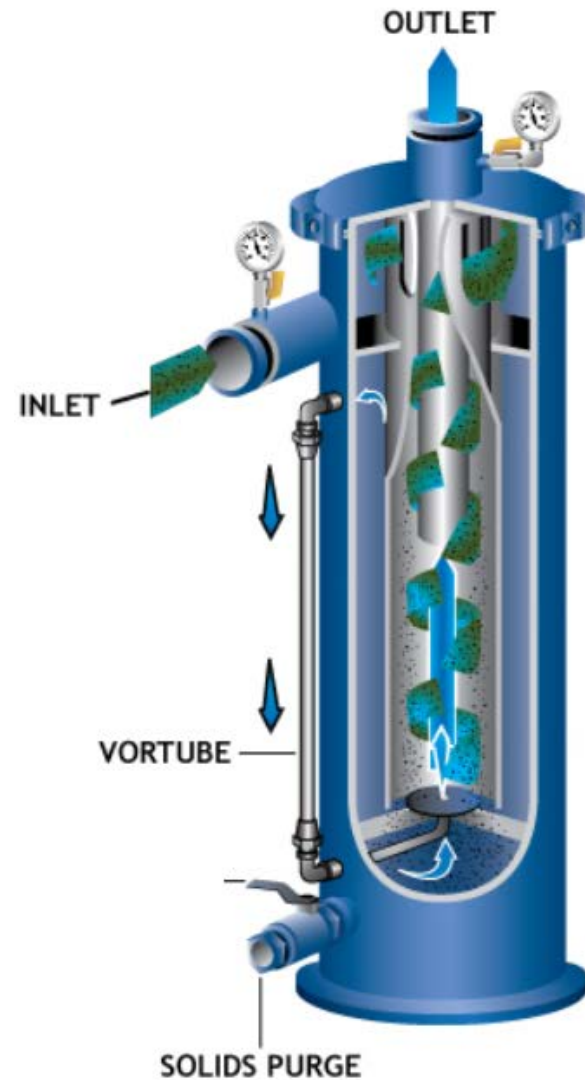
Sand Separation System Upgrade



Sand Separation System Upgrade



Sand Separation System Theory and Control



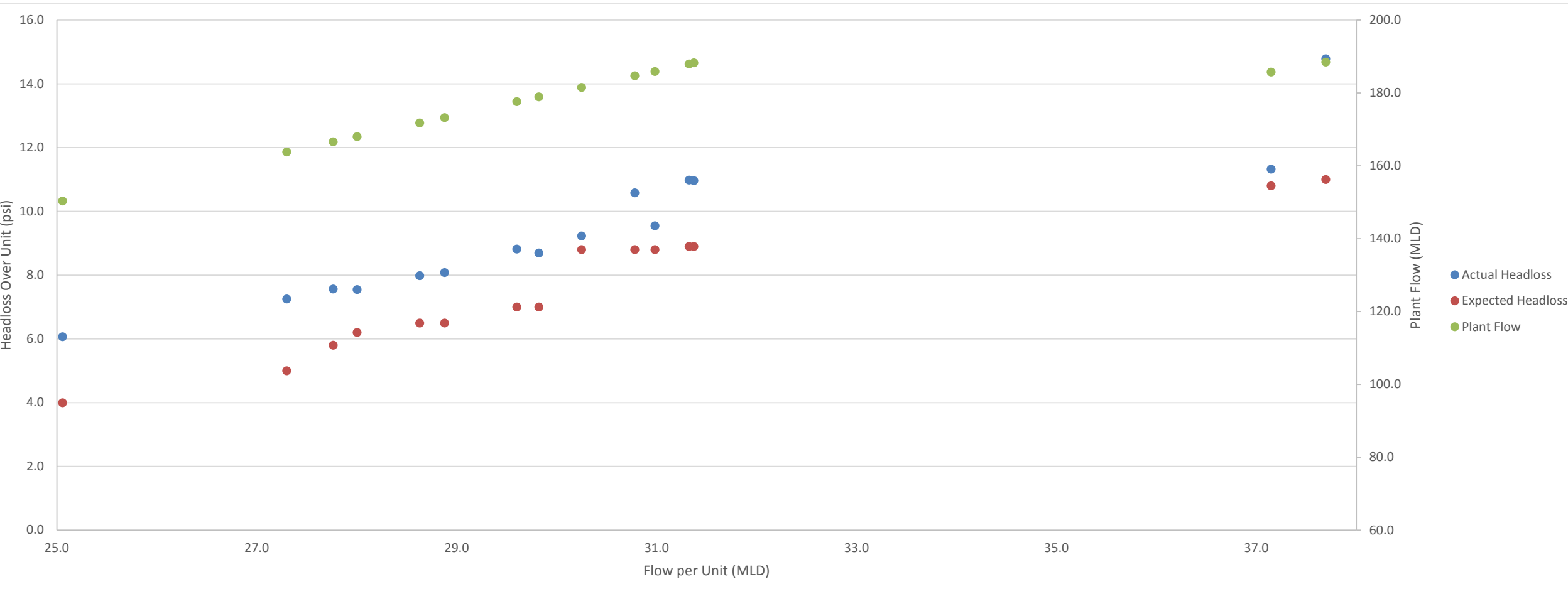
Sand Separation System Commissioning and Operation: Sand Accumulation



Sand Separation System Commissioning and Operation: Sand Accumulation



Sand Separation System Commissioning and Operation: Headloss and Raw Water Pump Performance



Sand Separation System Commissioning and Operation: Vibration



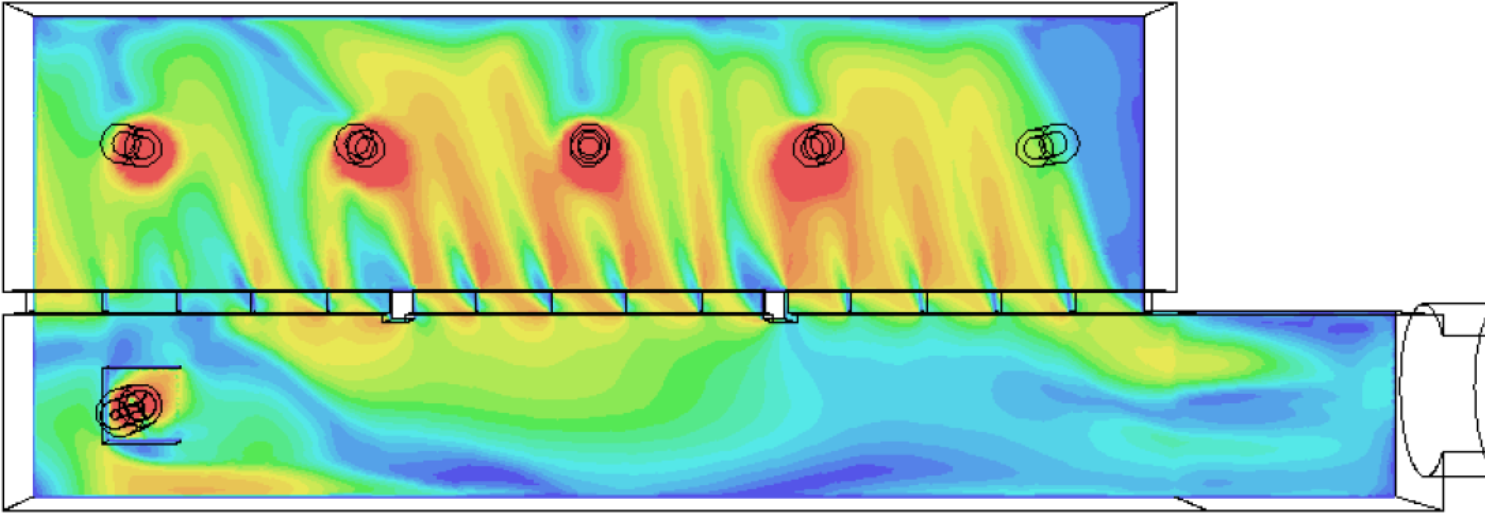
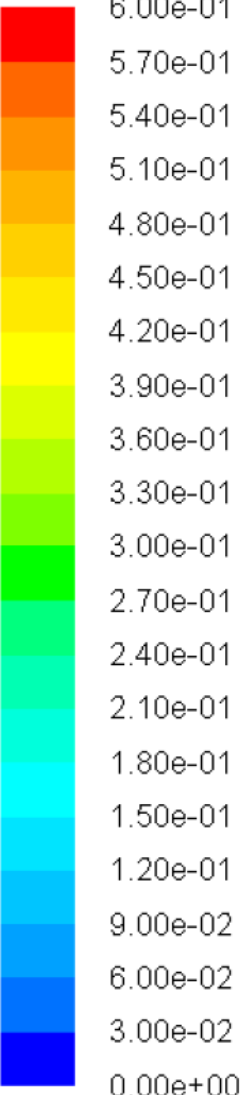
Sand Mobilisation Upgrade



Sand Mobilisation Upgrade



Sand Mobilisation Upgrade



Results



Conclusions

- Sand separation system successfully removing sand
- Sand is mobilised in the raw water wet well
- Process performance improved
- Maintenance costs reduced
- Removed sand has been repurposed within the business