Sweetwater Commissioning

Monthly progress report – 26th July 2023

MILESTONES

Milestone 1 – Sustainable flow rate at BH2 with current quality levels 1
Milestone 2 – Replace Pump and Screen in BH1 for additional resilience 2
Milestone 3 – Permanent Solution to fix water turbidity 3
Milestone 4 – Fix to address H2S (sulphur smell) 4
Milestone 5 - Operational Handover 5

PROJECT PROGRESS AND INDICATORS

Major Activities	Target	Actual	Indicator
Planning			
• Handover of 'Build Project'	30/09/22	28/09/22	100%
• Post-handover review (assessment of operational readiness)	16/09/22	16/09/22	100%
• Define 'Commissioning Project' (including financials)	14/10/22	14/10/22	100%
• Detailed design from WSP to address turbidity	25/11/22	N/A	100%
• Detailed design from WSP to address H2S	25/11/22		15%
• Engage contractors	14/10/23	14/10/22	100%
Physical Works			
• Replace air injection equipment, as a temporary solution, to improve water quality from BH2	19/10/22	19/10/22	100% 1
• Replace pump at BH1 with new pump/screen	18/11/22	18/11/22	100% 2
• Construct turbidity diversion and addition instrumentation	17/02/23	27/04/2023	100% 3
• Installation of permanent solution for H2S Treatment	27/01/23		15% 4
Operational Activities			
• Implement correct flowrates and shutdown procedure	18/11/22		80%
• Reconfigure SCADA so plants can operate remotely	24/02/23	27/04/2023	100%
• Test and commissioning of full system (incl. treatment plant)	17/03/23		70%
• Update As-builts and Operational Procedures	17/03/23		0% 5
Project Completion	17/03/23		0%

HIGHLIGHTS

Achieved in past period	Planned for next period
Milestones 1, 2, & 3 are complete for both bores. Water has been passed through the plant successfully in small batches, under operator supervision.	1.Cleaning of the flush outlet drain (approx. 1km long through neighbours' properties) must be done as the volumes of water needed to get turbidity below 1ntu is very high (approx. 400m3) each time it starts. This causes flooding to farm land. 2. Have had one of the turbidity bypass actuators fail – Replacements ordered and will be installed as soon as they arrive. 3. Post Reservoir online monitoring to provide treatment analysis and compliance to be installed – Equipment is in with project team awaiting installation. This provides continuous monitoring to the Drinking Water Standards that must be in place. 4. Tomata Arawai water Assy to be completed once we can flush water again, this is so we can assure Drinking Water Standards. 5. Connect NTU, Conductivity and Ph sensors at bore sites into Historian and Water outlook for compliance.

Still to resolve	
Generator Automatic start to be purchased and installed. The supplied generator is only able to run Bore 2 and the Transfer pump. Bore 1 Electrical circuit is entirely separate and off a different feed. Voltage drop if cabled from Bore 2 site, is expected to cause the bore to not run at Bore 1. Need to confirm if there was a VA for the Generator ATS? Automation of the plant needs to be resolved, will require a PLC replacement and delivery for these items are very long. Also as part of this the H2S design and work still needs to be finished. Another consideration is the MoH flouridisation works, this will require full automation works as well, along with many other plant changes, a membrane plant could resolve these issues as it has the automation, ability to treat both sources of water and assist with the Flouradisation works. Decision to put one at either the Kaitaia plant itself or one at both sites would need to be confirmed. Investigation as part of the plants filter media change out has identified that the blowers installed are 1/3 the correct size for the filters we have, and we will need to upgrade this. This work would need to be done even if Sweetwater was not involved, to put the filter backwash efficiency back to correct levels. A flush mechanism after the UV will need to be fitted, to enable water to be diverted away from the Reservoirs if the monitoring shows a breach in the treatment process. This will be relatively simple to install and source parts for.	

PROJECT TEAM

Project Sponsor: Karl Schenker / Peter Oliver **Project: Manager:** Mike Hayes **Senior Engineer:** Burkhart Glaser

Overall Status