
To: Hugh Keane & Stuart Beard, Waikato Regional Council

From: Martin Mould, Waters Manager, Waikato District Council

Subject: Incident Investigation Report – Wastewater Overflow from Wainui Road Pump Station Raglan

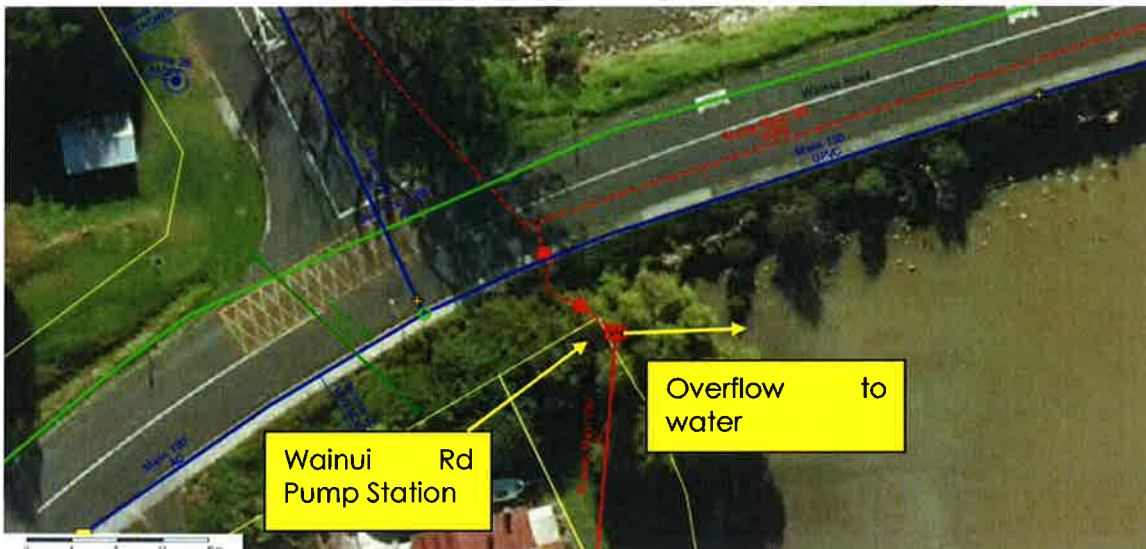
Incident Date: Saturday 9 & 10 August 2014

1. Purpose

To document the events surrounding the wastewater (WVW) overflow at Wainui Road Pump Station Raglan over the weekend of 9/10 August 2014.

2. Site Description

The overflow occurred at the Wainui Road Pump Station. This is situated close to the dry shore on the south west side of Wainui Road Bridge.



3. Incident Summary

- At 9.26am on 10 August 2014 a passerby noticed a wastewater overflow from the Wainui Road Pump Station and contacted the Waikato District Council's after hour services.
- At 9.30am the on-call Operations Engineer was notified of the possible WW overflow at the above pump station.
- The Operations Engineer immediately contacted the local on-call serviceman to investigate and then contacted the Waters Manager notifying him that an overflow had occurred which had possibly entered the Raglan Harbour.
- At 9.40am, 14 minutes after the first contact, the Serviceman arrived on site, found the pump tripped out and reset the electrical contactor to pump the well down. The system was partially blocked, requiring several resets to clear the blockage and restore pump levels back to normal settings. Blockages in the wastewater network and pumping station are a reasonably regular occurrence.

- Following an update from site, and at approximately 10.00am, 34 minutes from the initial call, the Operations Engineer contacted the Waikato Regional Council on their 0800 number to inform them of the overflow to Raglan Harbour. Warning signs were placed on site and at the entry to the estuary.
- At the same time the Waters Manager contacted the Waikato District Health Board and an iwi representative (Heather Thompson) to notify them of the issue. Other iwi calls were made, but unanswered.
- The overflow seeped into the surrounding ground, and once saturated entered the estuary for approximately 19 hours. Using previous pump data for the Wainui Road pump station it is estimated that 18.0m³ was discharged with lesser volume reaching the estuary direct.
- Once the overflow was stopped the area surrounding the pump station was disinfected by the Serviceman.

4. Issues Identified

- High wet well level alarms were generated by the system and sent to the datran base station.
- The on-call Operations Engineer did not receive any high level alarms from datran and this prevented earlier intervention by services staff to avoid the overflow.

5. Investigation

- The pump station was being upgraded and only one pump was in operation at the time of the overflow. Normal operation would have seen the second pump start following the failure of the first pump. During the week prior to the overflow WDC were installing new pipework, new valves and bigger pumps at the Wainui Rd Pumpstation. By COB on Friday 8 August 2014 one side of the upgrade had been completed. The second side was completed by COB Monday 11 August 2014.
- If the cause was a pipe blockage the second pump may have also tripped which would have triggered the same results. If the cause was a blocked pump then the second pump would have eliminated the overflow.
- The datran (alarm system) engineer investigated the reasons for the alarms not being received by the operator.
- The high level alarm from the pump station was sent via the scada network at 12.45pm on Saturday 9 August.
- The overflow would have started some time after that time as there is capacity between high level alarm and the site overflowing.
- Dependant on load and flow there would ordinarily be more than one hour of buffer time between the high level alarm and an overflow event occurring. This would normally provide sufficient time for a Service person to respond and be placed on-site for remedial action.

The high level alarm was received by the datran base station but failed to deliver the alarm to the Operations Engineer's phone.

The Scada System requires the Operations team to manually enter their phone number into the system (0278334567@etext.co.nz) on each change of Duty (weekly). An error was made in entering this text correctly on Friday 8 August. The system at the time was unable to identify and refuse incorrect entry.¹

The phone number entered into the system was incorrect and the system could not deliver the alarm message to the Operations Engineer.

1. The recommended changes have now been completed in the system.

6. Recommendations

- Install a drop down menu with preset loaded numbers to remove the possibility of error.
- Install a test button which immediately confirms a change of duty has been accepted.
- Add daily 8am and 6pm text messages confirming that system is active.
- Alarm escalation protocols have been added to the SCADA system.
- Create and implement a protocol in the case that this text is not received.
- Signage and monitoring to continue until clearance is received for public health risk.
- Council has approved the acceleration of the intended SCADA upgrade project.
- Future upgrades should be planned to ensure minimal time when only one pump is in service.
- Follow up with a report to the District Health Board.



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Martin Mould

WATERS MANAGER

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