THE WATER SUPPLY (WATER QUALITY) REGULATIONS 2016 (AS AMENDED)

NOTICE UNDER REGULATION 28(4)

UNITED UTILITIES: Zones supplied by Vyrnwy Large Diameter Trunk Main

Version Number: 4


Legal Instrument Database Reference number: UUT 3477

THE SECRETARY OF STATE:

1. has on received a report from UNITED UTILITIES (the “Company”) dated 19 December 2014 (the “Report”) which states that there is or has been a significant risk of supplying water from Vyrnwy Large Diameter Trunk Main (LDTM) that could constitute a potential danger to human health.

2. GIVES NOTICE to the Company under regulation 28(4) of the Water Supply (Water Quality) Regulations 2016 (as amended) that it must satisfy the following requirements:

For risks associated with:
- Iron
- Manganese
- Turbidity
- Colour
- THMs

Requirements

(a) to maintain the following measures for the period specified in each case

i. Planned flow changes to be carried out in line with Calm Network philosophy and operational risk assessments to mitigate impacts on water quality Ongoing

ii. Enhanced monitoring of the Vyrnwy LDTM at strategic points Ongoing
iii. Establish a proactive maintenance programme for all tanks and valves on the Vyrnwy system  

iv. Optimise existing treatment processes at Oswestry works to minimise THM formation, maximise colour reduction and to ensure continuous compliance with regulation 26  

(b) to review, revise and/or make operational the following measures, by the date specified below:

v. Make operational by 31 July 2015, and maintain until revocation of this Notice, the short-term measures listed below;  

Submit a specific Action Plan identifying short, medium and long term mitigating steps to address the risk to the wholesomeness of water from the colour, turbidity, THM, iron and manganese parameters associated with the water supply zones receiving >50% supply from the Vyrnwy LDTM. To include as a minimum the requirements below:

vi. Make operational the medium-term measures listed by the date specified below;

- Phase 1: Undertake an investigation into the relationship between manganese concentration and iron non-compliance in Vyrnwy LDTM supply system and other high risk works supply systems.  

- Phase 2: Continue with the PODDS modelling work to determine if any of the remaining sections of the Vyrnwy LDTM pose an unacceptable risk to wholesomeness of water.  

- Phase 3: Submit a summary of the investigations carried out to confirm the appropriateness of all proposed works at Oswestry works including: the remedial measures proposed for Oswestry works to reduce the colour and concentrations of THMs and manganese leaving the works. This should comprise a method statement which includes:

  a. The methodology used to determine/confirm the source of the problem and where it impacts, the
improvement options considered and solution proposed.

b. Measures to address the deterioration in raw water colour, changes to reduce colour and the concentration of manganese and THMs leaving the works, the provision of a new contact tank and the upgrade to the final water lime dosing plant including the specification for sustainable operational performance necessary to deliver the agreed outcomes.

- Phase 4: Submit a summary of the programme of work for additional WSZ cleaning in zones supplied from Vyrnwy LDTM >50%. COMPLETE
- Confirm programme of work associated with the control and automation of the Vyrnwy LDTM. COMPLETE

vii. Make operational by the date specified the long-term measures listed below;

- Renovation of the Vyrnwy LDTM between Oswestry and Malpas. COMPLETE
- Complete planning, design and procurement arrangements for the improvements identified in Step (vi) at Oswestry works COMPLETE
- Complete trials to optimise the Chlorine dioxide dosing. 31 December 2019
- Complete construction, installation and commissioning of:
  - the improvements identified at Oswestry works 31 July 2020
  - complete the cleaning of the identified distribution mains in the zones supplied by the Vyrnwy LDTM COMPLETE
- Installation of the shutdown and Start up to waste capability at Oswestry WTW. 31 October 2020
- Complete programme of work to improve control and automation of the Vyrnwy LDTM. COMPLETE

(c) to audit whether the measures have been effective by the following means:
viii. Define a strategy for auditing the effectiveness of the above measures by 31 July 2015 and to include the following:

- Oswestry works
  - Raw and final water iron and manganese monitoring sufficient to continuously verify iron and manganese concentrations in the final water.
  - Raw and final water colour and downstream zonal THM monitoring sufficient to continuously verify the colour and THM concentrations in water supplied by Oswestry works.

- Vyrnwy LDTM
  - Install additional in-line monitoring for iron, manganese and turbidity at strategic points on the Vyrnwy LDTM to monitor performance and condition of the sections of mains. Supplement the in-line monitoring with 26 operational samples per year at each location.
  - Record flow and turbidity data on the LDTM in sufficient detail to enable the PODDS model to be updated and validated during periods of flow changes (planned works) and the anticipated increased output from Oswestry works.
  - Establish base-line condition of the Vyrnwy LDTM by completion of step vii

- Vyrnwy WSZs:
  - Establish baseline condition of the monitored downstream WSZs by completion of step vii

- The strategy should consider but not be limited to the following assessment techniques in WSZs:
  - Review of water quality operational and compliance data, event evidence and customer contact data.
  - In line zonal turbidity monitoring
  - Hydrant colour grade analysis at set locations post cleaning
  - Enhanced operational monitoring

- The strategy should include but not be limited to the following assessment techniques in the LDTM:
  - CCTV/endoscope inspections
  - Trunk main sampling
  - Enhanced sampling and continuous on line monitoring
• Record customer contact and complaint data in sufficient detail (including during events) to enable spatial and temporal analysis.

• Take and analyse a minimum of 12 samples for iron, manganese and THMs throughout the year from the area supplied from the Vyrnwy LDTM to supplement current regulatory monitoring. If the concentration of iron in any sample exceeds the maximum concentration the Company has agreed with the local Health Protection Team in the downstream water supply zones, take reasonable measures in consultation with Public Health England to minimise the impact of discoloured water on customers. Report regulatory exceedances of the Standards to DWI as part of current monthly exception reporting procedures.

• With reference to previous Undertakings UUT2343, UUT2349 and UUT2801, the criteria and method of post-assessment to determine that the work has delivered the required outcomes for consumers as agreed with the Inspectorate for Undertakings UUT2343, UUT 2349 and UUT2801

ix. Implement the audit strategy outlined in (viii) until the revocation of this notice.

(d) not to supply water for regulation 4(1) purposes from TREATMENT WORKS OR SUPPLY SYSTEMS]unless the conditions specified below are satisfied

NA

(e) to provide the following information in the time and manner specified below to enable monitoring of progress towards the mitigation of the risk of supplying water that would constitute a potential danger to human health:

x. Provide a progress report annually by 31 January: reports to include the following:

• All iron, manganese, turbidity, and colour data for treated water leaving Oswestry works, all iron, manganese and turbidity data in the Vyrnwy LDTM and iron, manganese, turbidity and THM data in the downstream WSZs which are >50% supplied by Oswestry works

• Details of the remedial steps that comprise the programme of work including commencement and completion dates for investigations, design, tendering, construction and commissioning

Ongoing
• Current state of progress with (a) (b) and (c) above;
• A statement of implications of any slippage of the programme and details of activities planned to bring programme back on target
• Whether the Company has any other reason to believe it may not be able to meet any of the key dates set out in this Schedule of Work.

And against the following milestones

• Provide a report to DWI on the success of the manganese investigations and the relationship with iron non-compliance and discoloured water contacts by 31 July 2014
  COMPLETE

• Submit an Action Plan as detailed in (v) by 31 July 2015
  COMPLETE

• Completion of planning, design and procurement arrangements for the improvements identified in (vi) at Oswestry works by 30 September 2015
  COMPLETE

• Provide a summary report following the completion of the validated PODDS modelling work by 31 January 2017
  COMPLETE

• Confirmation of the programme of work for the control and automation of the Vyrnwy LDTM
  COMPLETE

• Completion of the shutdown and start up to waste capability

• Provide a report on the outcome of the Chlorine dioxide dosing trials.

• Construction, installation and commissioning of the improvements at Oswestry WTW.

• Completion of the mains cleaning programme.
  COMPLETE

• Completion of the Vyrnwy control and automation project by 31 August 2019.
  For duration of notice and by 31 January 2021

xi. Review the risk assessment for the connected supply system associated with the Vyrnwy LDTM as required by Regulation 27(4) and subsequently submit a revised Regulation 28 report (in accordance with Regulation 28(1)) from time to time; and by 31 October 2019

xii. Submit both an interim and final satisfactory report to DWI on the efficacy of the works
  By 31 December 2020 for the interim report. By 30
improvements to reduce the risk of iron, manganese, turbidity, colour and THM non-compliance in the WSZs supplied from the Vyrnwy LDTM. Report to include summary of work completed and benefits realised to date, and to outline the proposed longer term strategy for the Vyrnwy LDTM to mitigate risk of non-compliance with the iron standard.

Include as evidence of closure for this scheme appropriate documentation to confirm that the all work detailed in the action plan has been implemented, or if risk has not been mitigated, include the proposed future programme of work for the zones supplied by Vyrnwy LDTM to reduce risk of non-compliance with the iron standard by 30 September 2020 for the interim report 31 August 2021 for the final completion report.

Failure by the Company to comply with this Notice may result in enforcement proceedings under section 18 of the Act

Signed by authority of the Secretary of State

Milo Purcell
Deputy Chief Inspector
25 October 2019
DWI ref: UUT 3477