

METER ERROR REPORT**FINAL**

Reconcile?	Y
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Safety Issue?	Y
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Thesis Report No.	
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1. EXECUTIVE SUMMARY

SITE NAME	Pucklechurch	
LDZ	SW (Wales & West)	
START DATE (actual)	1 st June 2012	
LAST GOOD DATE		
END DATE	14 th June 2012	
SIZE OF ERROR (No reconciliation required if under 0.1%)	20.9 % under-registration (1,578,555 kWh)	
ESTIMATE – Y/N?		
ROOT CAUSE	Fixed values for pressure and temperature	
ANALYSIS	Site inlet pressure and offset temperature from nearby site used to correct data	
METER TYPE	Turbine	
AUTHOR	B. Kirkman	
CHECKED BY	C. Jones	
ACCEPTED BY NETWORK		
RECONCILIATION	Distribution	Transportation

2. BACKGROUND

Pucklechurch Offtake is a two turbine meter stream site using a gas chromatograph for RD and CV determination and PTZ correction. On 1st June 2012 the pressure and temperature inputs were left in override mode (fixed values of 50 barg and 15 °C) following routine maintenance. The site only flowed on 1st, 12th, 13th and 14th June 2012 before the problem was discovered and resolved.

3. ERROR QUANTIFICATION AND IMPACT

The archived metering and gas quality data was downloaded from HPMIS. The meter pressure at Pucklechurch was compared to the iGMS telemetered site inlet pressure, P1, (see Figure 1). The pressures matched to within 0.01 bar average offset and so were considered identical.

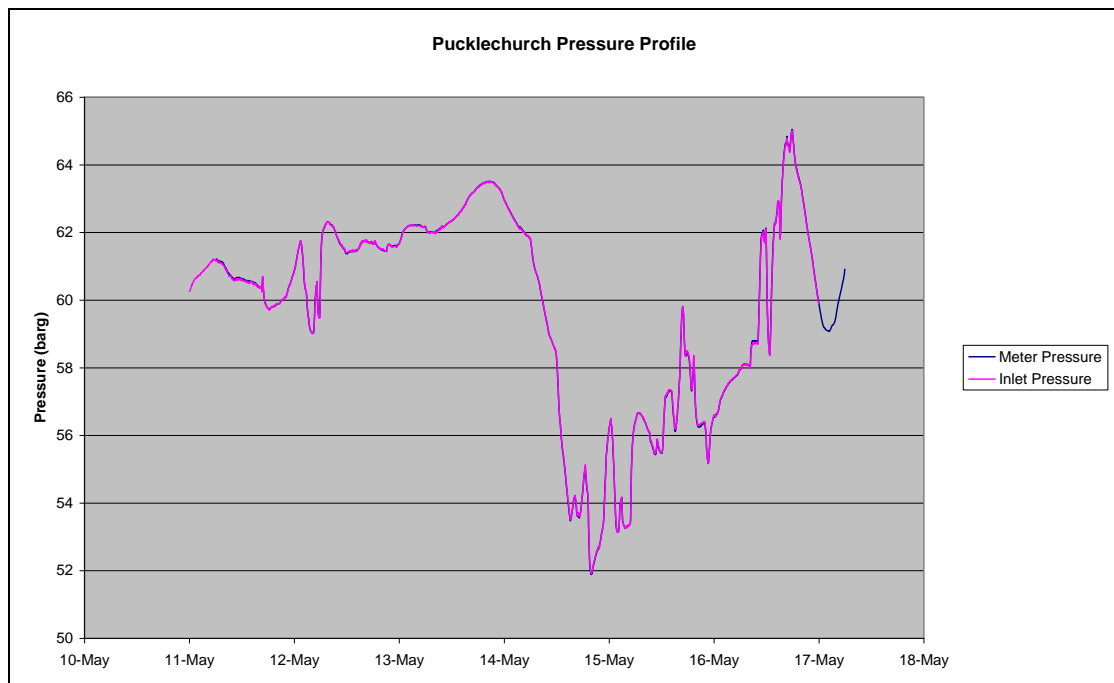


Figure 1 - Pressure Comparison

The only other recorded temperature at Pucklechurch is the site outlet temperature which does not correspond to the meter temperature because of the pre-heaters and regulators between the two measurement points.

The meter temperature at Pucklechurch was compared to the nearby offtake at Seabank (see Figure 2). The temperature profiles matched, when both sites were flowing, with an average offset of -0.52 °C which was corrected for.

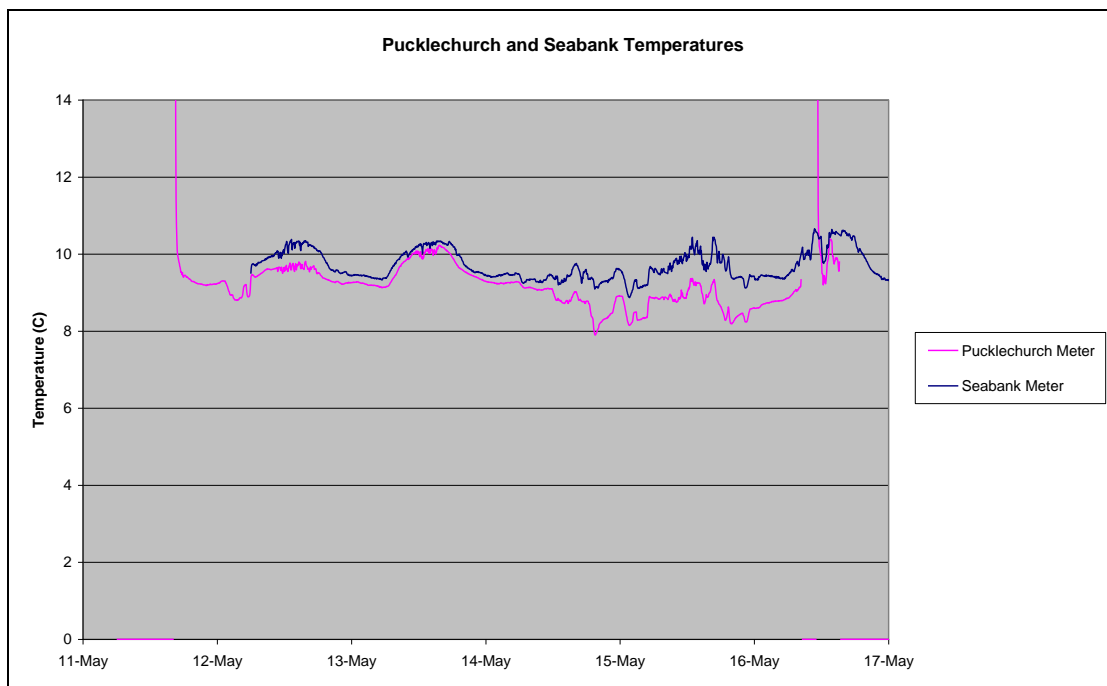


Figure 2 - Temperature Comparison

The site inlet pressure and offset temperature from Seabank offtake were used to calculate the density and correct volume of gas that went through the metering system. The density was also calculated using the fixed pressure and temperature to give the volume of gas measured by the metering system.

The volumetric error was calculated as the difference between the measured and corrected volumes. A daily correction factor was calculated to be applied to the Gemini billed volumes.

The overall error is an under-registration of 20.9%.

4. CAUSES

Pressure and temperature inputs were left in override mode following routine maintenance.

5. RECOMMENDATIONS AND LEARNING

The gas flowing through the site will have been under-odorised and the impact of reduced odorant injection should be assessed. The error should be reconciled using the following daily correction factors applied to the Gemini billed totals.

Gas Day	Daily Correction Factor
01-JUN-2012	1.165495
12-JUN-2012	1.165559
13-JUN-2012	1.226364
14-JUN-2012	1.217577

REFERENCES

HPMIS & iGMS Databases

May Pressure Profiles.xls – Spreadsheet showing pressure comparison

May Temperature Profiles.xls – Spreadsheet showing temperature comparison

Pucklechurch MER Data.xls – Spreadsheet showing error calculation

VERSION HISTORY

<i>Version</i>	<i>Changes</i>	<i>Author</i>	<i>Date</i>
0	<i>First Issue</i>	<i>B. Kirkman</i>	<i>23/08/12</i>

DISTRIBUTION

Wales & West Utilities