

**NULL METER ERROR REPORT****FINAL**

Reconcile?	N
Safety Issue?	N
Thesis Report No.	

**1. EXECUTIVE SUMMARY**

SITE NAME	Bishop Auckland	
LDZ	NO	
START DATE (actual)	26 <sup>th</sup> March 2018	
LAST GOOD DATE		
END DATE	13 <sup>th</sup> September 2018	
SIZE OF ERROR (No reconciliation required if under 0.1%)	0.033% under read / (1.89 GWh)	
ESTIMATE – Y/N?	Y	
ROOT CAUSE	Temperature transmitter failed validation.	
ANALYSIS	In the attached spreadsheets	
METER TYPE	Ultrasonic	
AUTHOR	Catherine Jones	
CHECKED BY	Piers Eldridge	
ACCEPTED BY NGN NETWORK		
RECONCILIATION	Distribution	Transportation

## 2. BACKGROUND

The metering at Bishop Auckland consists of an ultrasonic meter. The following errors have occurred on stream 1.

During the annual validation the CP12 check (temperature transmitter) failed on 13<sup>th</sup> September 2018 and subsequently passed following re-calibration.

The last good date is the 26<sup>th</sup> March 2018 at the previous validation.

## 3. ERROR QUANTIFICATION AND IMPACT

The temperature measurement was corrected for the 'As Found' errors shown in Table 1 when the recorded measurement was in the appropriate range.

The temperature measurement has been corrected for as found error recorded at the September 2018 validation between 26<sup>th</sup> March 2018 and 13<sup>th</sup> September 2018. As the start of the temperature transmitter error cannot be determined the half the error has been applied to the period between the validations.

Temperature (degC)	Measured Temp (degC)	Error (% span)
-10	-10.0276	0.2761
2.5	2.5059	0.2350
15.0	15.0697	0.4647
27.5	27.6136	0.4131
40.0	40.1613	0.4031

Table 1 – Temperature As Found errors (13<sup>th</sup> September 2018)

The flow rates and daily volumes were recalculated using the measured pressure, frequency and k factors and the corrected temperature. The error was calculated on a daily basis as the difference between volume totals using measured and corrected values.

The overall error is an under-registration of 0.033%. The error is equivalent to 1.89 GWh.

## 4. CAUSES

Temperature transmitter check failed during routine validation.

## 5. RECOMMENDATIONS AND LEARNING

Failures of this type will occur occasionally, if the same checks fail regularly then it suggests a fundamental problem with the equipment being tested and repairs or replacements should be made.

The measurement error notification guidelines published on the joint office of gas transporters website states "If, for every day within the identified error duration, the error represents less than 0.1% of the end of Day quantities

measured at that Offtake, then no reconciliation will be made for any day within the error duration and a null report written;”. Therefore, no reconciliation should be made.

Appendix A shows the daily correction factors, which have already been halved.

## REFERENCES

MER Data.xls  
Bishop Auckland Summary.xls

## VERSION HISTORY

<i>Version</i>	<i>Changes</i>	<i>Author</i>	<i>Date</i>
<i>0</i>	<i>First draft</i>	<i>Catherine Jones</i>	<i>22/01/2019</i>
<i>1</i>	<i>The period of the MER has been changed after the results of the 26 March 2018 validation was received.</i>	<i>Piers Eldridge</i>	<i>28/01/2019</i>

## DISTRIBUTION

*Asset Owner*  
*Energy Performance*  
*Network Lead Group*  
*Asset Strategy*

**Appendix A**

<b>Gas Day</b>	<b>Daily Correction Factor</b>
26/03/2018	1.000732
27/03/2018	1.000737
28/03/2018	1.000797
29/03/2018	1.000719
30/03/2018	1.000731
31/03/2018	1.000739
01/04/2018	1.000709
02/04/2018	1.000713
03/04/2018	1.000714
04/04/2018	1.000709
05/04/2018	1.000697
06/04/2018	1.000708
07/04/2018	1.000707
08/04/2018	1.000719
09/04/2018	1.000716
10/04/2018	1.000726
11/04/2018	1.000725
12/04/2018	1.000714
13/04/2018	1.000713
14/04/2018	1.000723
15/04/2018	1.000717
16/04/2018	1.000714
17/04/2018	1.000709
18/04/2018	1.000693
19/04/2018	1.000686
20/04/2018	1.000701
21/04/2018	1.000706
22/04/2018	1.000710
23/04/2018	1.000709
24/04/2018	1.000704
25/04/2018	1.000691
26/04/2018	1.000699
27/04/2018	1.000689
28/04/2018	1.000692
29/04/2018	1.000696
30/04/2018	1.000684
01/05/2018	1.000691
02/05/2018	1.000707
03/05/2018	1.000705
04/05/2018	1.000680
05/05/2018	1.000693

06/05/2018	1.000683
07/05/2018	1.000669
08/05/2018	1.000686
09/05/2018	1.000690
10/05/2018	1.000693
11/05/2018	1.000695
12/05/2018	1.000696
13/05/2018	1.000699
14/05/2018	1.000688
15/05/2018	1.000689
16/05/2018	1.000689
17/05/2018	1.000684
18/05/2018	1.000680
19/05/2018	1.000675
20/05/2018	1.000674
21/05/2018	1.000675
22/05/2018	1.000692
23/05/2018	1.000694
24/05/2018	1.000692
25/05/2018	1.000689
26/05/2018	1.000680
27/05/2018	1.000653
28/05/2018	1.000648
29/05/2018	1.000654
30/05/2018	1.000655
31/05/2018	1.000649
01/06/2018	1.000642
02/06/2018	1.000636
03/06/2018	1.000640
04/06/2018	1.000650
05/06/2018	1.000687
06/06/2018	1.000660
07/06/2018	1.000653
08/06/2018	1.000647
09/06/2018	1.000642
10/06/2018	1.000644
11/06/2018	1.000640
12/06/2018	1.000644
13/06/2018	1.000685
14/06/2018	1.000628
15/06/2018	1.000642
16/06/2018	1.000650
17/06/2018	1.000640
18/06/2018	1.000641
19/06/2018	1.000645

20/06/2018	1.000649
21/06/2018	1.000640
22/06/2018	1.000639
23/06/2018	1.000636
24/06/2018	1.000659
25/06/2018	1.000676
26/06/2018	1.000654
27/06/2018	1.000695
28/06/2018	1.000649
29/06/2018	1.000683
30/06/2018	1.000651
01/07/2018	1.000653
02/07/2018	1.000641
03/07/2018	1.000634
04/07/2018	1.000617
05/07/2018	1.000646
06/07/2018	1.000630
07/07/2018	1.000617
08/07/2018	1.000644
09/07/2018	1.000652
10/07/2018	1.000640
11/07/2018	1.000621
12/07/2018	1.000624
13/07/2018	1.000611
14/07/2018	1.000601
15/07/2018	1.000599
16/07/2018	1.000641
17/07/2018	1.000600
18/07/2018	1.000595
19/07/2018	1.000589
20/07/2018	1.000592
21/07/2018	1.000585
22/07/2018	1.000583
23/07/2018	1.000588
24/07/2018	1.000607
25/07/2018	1.000589
26/07/2018	1.000587
27/07/2018	1.000582
28/07/2018	1.000586
29/07/2018	1.000593
30/07/2018	1.000595
31/07/2018	1.000598
01/08/2018	1.000603
02/08/2018	1.000575
03/08/2018	1.000597

04/08/2018	1.000605
05/08/2018	1.000585
06/08/2018	1.000580
07/08/2018	1.000564
08/08/2018	1.000584
09/08/2018	1.000593
10/08/2018	1.000597
11/08/2018	1.000570
12/08/2018	1.000565
13/08/2018	1.000572
14/08/2018	1.000570
15/08/2018	1.000575
16/08/2018	1.000595
17/08/2018	1.000598
18/08/2018	1.000583
19/08/2018	1.000586
20/08/2018	1.000593
21/08/2018	1.000588
22/08/2018	1.000602
23/08/2018	1.000600
24/08/2018	1.000662
25/08/2018	1.000606
26/08/2018	1.000629
27/08/2018	1.000627
28/08/2018	1.000640
29/08/2018	1.000660
30/08/2018	1.000653
31/08/2018	1.000641
01/09/2018	1.000633
02/09/2018	1.000615
03/09/2018	1.000618
04/09/2018	1.000617
05/09/2018	1.000631
06/09/2018	1.000625
07/09/2018	1.000615
08/09/2018	1.000617
09/09/2018	1.000609
10/09/2018	1.000611
11/09/2018	1.000640
12/09/2018	1.000706
13/09/2018	1.000614