

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

Reconcile?	N
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Safety Issue?	N
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Thesis Report No.	N/A
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**1. EXECUTIVE SUMMARY**

SITE NAME	SHORNE OFFTAKE
LDZ	SOUTHEAST
LAST GOOD DATE	N/A
START DATE	N/A
END DATE	N/A
SIZE OF ERROR (No reconciliation required if under 0.1%)	< 0.1%
ESTIMATE – Y/N?	N/A
ROOT CAUSE	ME2 CALIBRATION FAILURE
ANALYSIS	IN REPORT
METER TYPE	ORIFICE
AUTHOR	T Roberts
CHECKED BY	S Howells

**2. BACKGROUND**

Gas is supplied to part of the Southeast network at Shorne Offtake, which employs an orifice meter to measure the volumetric flow rate in accordance with BS5167.

The high differential pressure transmitter failed ME2 calibration tolerance on 14/7/2009.

The transmitter was subsequently adjusted to within tolerance and passed recalibration.

HDP 0 – 1000 mbar range

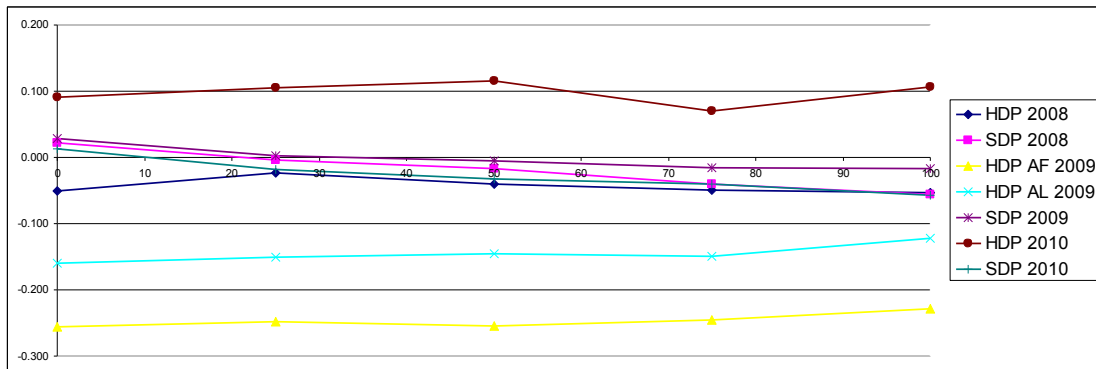
SDP 0 – 1000 mbar range

**3. ERROR QUANTIFICATION AND IMPACT**

Results from the ME2 calibrations of the HDP transmitter in 2008, 2009, and 2010 have been plotted below. In 2008 both HDP and SDP are well within the ME2 tolerance of +/- 0.2% fsd. The 2009 HDP A/F errors of around -0.25% fsd can be seen to have been adjusted A/L to around -0.15%. In 2010 the HDP A/F error is around +0.1% fsd.

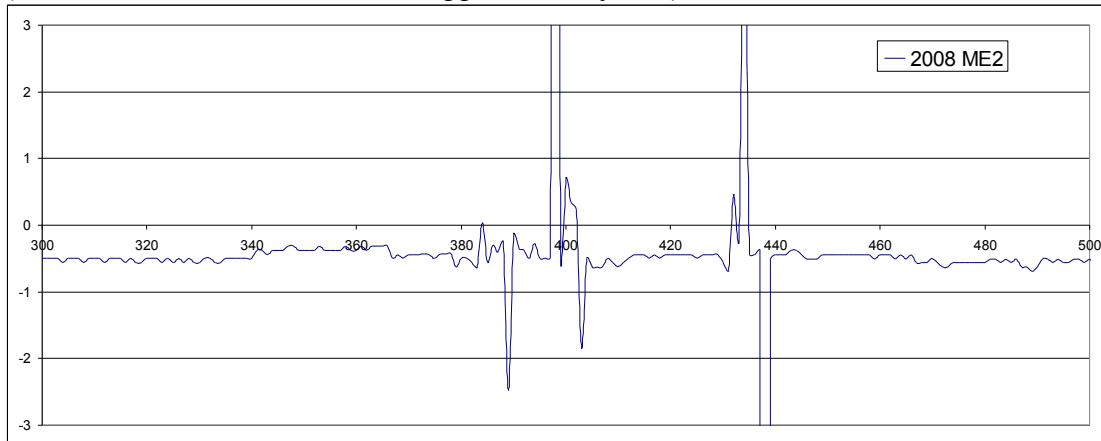
Plotted below the ME2 calibration chart are 3 further charts of the difference, in mbars, between the HDP and SDP transmitters (HDP – SDP mbars). These have been plotted against time for the period before and after the actual HDP ME2 calibrations for each year 2008, 2009, and 2010.

ME2 calibrations : X axis = input % Y axis = error % fsd

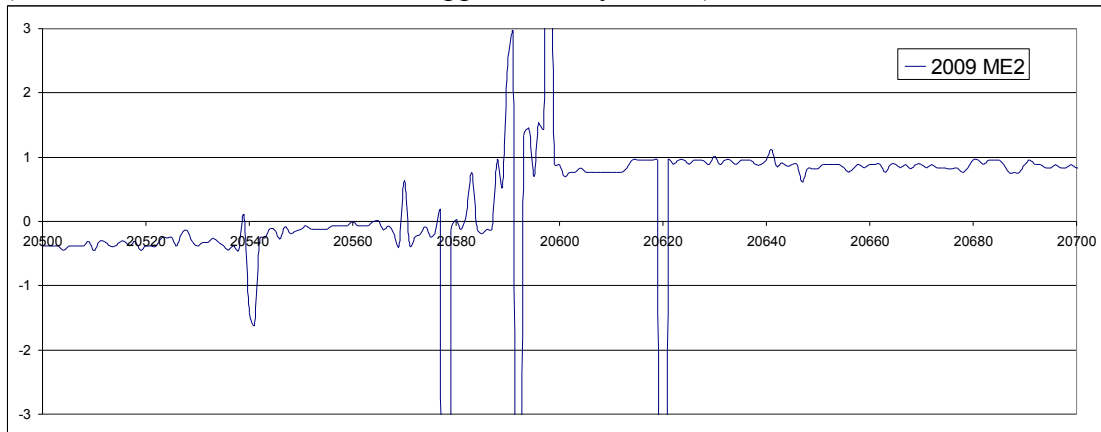


# Shorne MER SE003 R2.0

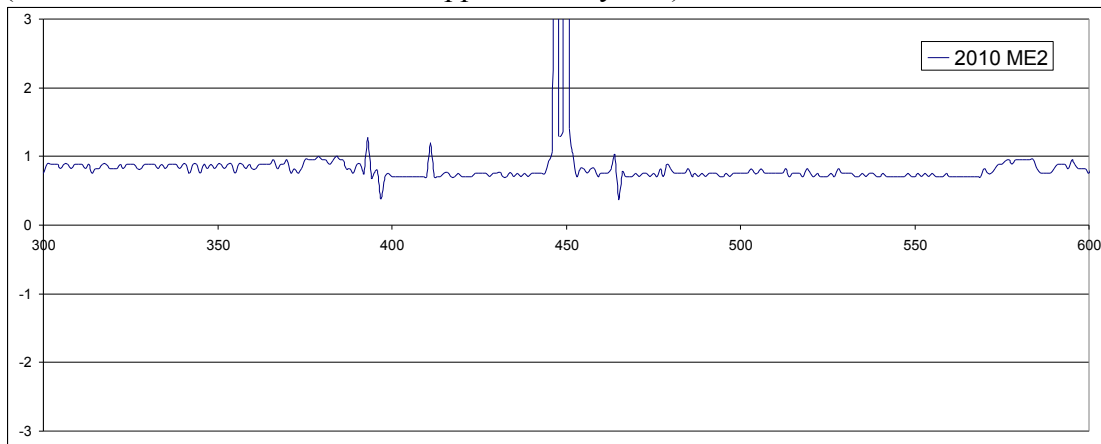
2008 ME2 RBD data : X axis = time Y axis = HDP-SDP mbar  
(Calibration date of 15/7/2008 at approximately 400)



2009 ME2 RBD data : X axis = time Y axis = HDP-SDP mbar  
(Calibration date of 14/7/2009 at approximately 20590)



2010 ME2 RBD data : X axis = time Y axis = HDP-SDP mbar  
(Calibration date of 23/7/2010 at approximately 450)



The 2008 RBD data plot illustrates that the difference between the HDP and SDP results was well within tolerance.

The 2009 RBD data plot illustrates a difference similar to 2008 before the ME2 calibration, but after adjustment a positive difference of around 1 mbar (0.1% fsd) is evident.

The 2010 RBD data plot illustrates a difference similar to that of the 2009 A/L value.

Taking the SDP transmitter as a reference it is concluded that the 2009 A/F and A/L results were not true representations of transmitter performance.

RBD data does not support these errors being present and would suggest that the HDP transmitter was in fact well within tolerance in 2009 and the adjustment at that time of around +0.1% fsd actually left the transmitter with an error of around +0.1% fsd.

#### **4. CAUSES**

Unknown, but related to the 2009 ME2 HDP calibration.

#### **5. RECOMMENDATIONS AND LEARNING**

Consideration be given where ME2 calibration failures give rise to errors in flowrate in excess of 0.1% to repeating the tests with different personnel and test equipment.

#### **REFERENCES**

HPMIS data

ME2 reports for 2008, 2009, and 2010

#### **VERSION HISTORY**

<i>Version</i>	<i>Changes</i>	<i>Author</i>	<i>Date</i>
<i>R2.0</i>	<i>First draft</i>	<i>T Roberts</i>	<i>30/8/2012</i>

#### **DISTRIBUTION**

NG UKT Data assurance and Quality Team

SGN S Skipp

SGN E Melen

SGN S Howells

Joint Office of Gas Transporters