METER ERROR REPORT

FINAL

Reconcile?	Y
Safety Issue?	N
Thesis Report No.	

1. EXECUTIVE SUMMARY

SITE NAME	Ilchester
LDZ	South West
START DATE (actual)	25th September 2010 (02:53)
LAST GOOD DATE	
END DATE	25th September 2010 (05:17)
SIZE OF ERROR (No reconciliation required if under 0.1%)	24,149. SCM over registration (equivalent to 2.70%)
ESTIMATE – Y/N?	N
ROOT CAUSE	Pressure transducer locking up
ANALYSIS	HPMIS RBD data
METER TYPE	Orifice Plate
AUTHOR	S Western
CHECKED BY	C Stock

2. BACKGROUND

Gas is supplied to part of the South West LDZ, Wales & West Utilities Network, at Ilchester FWACV offtake. The site metering system comprises a single Orifice meter with an isolated bypass.

On the 25th of September 2010 the pressure transducer locked up for some undiscovered reason for a period of 2 hours 10 minutes. This caused the standard flow rate to be incorrectly calculated. The condition was rectified by turning the power to the transmitter off and then on again.

3. ERROR QUANTIFICATION AND IMPACT

The RBD data was reviewed before and after the pressure transducer (PT) locked up. The ten PT readings prior to and after the locking of the PT were averaged to estimate the actual pressure reading during the period of the PT locking up.

Using the HPMIS orifice plate design calculation (See Fig. 1a & 1b) together with the 8 minute RBD and gas composition data the volume flow for the period where the PT locked was calculated. In each instance, the volume flow for the locked up PT and the estimated PT reading were calculated. By comparing these calculated flows over the period of the PT locking up it was estimated that orifice metering system over-registered 24,149.91scm of gas.

From HPMIS, the Dvol for Gas Day the 24th of September 2010 was 0.894117mscm so the over-registration equates to 2.700 % of Dvol. A spreadsheet detailing the calculations is available on request.

The error would have had a minor affect on odorisation.

Fig. 1a - HPMIS screen shot for flow calculation using calculated average pressure

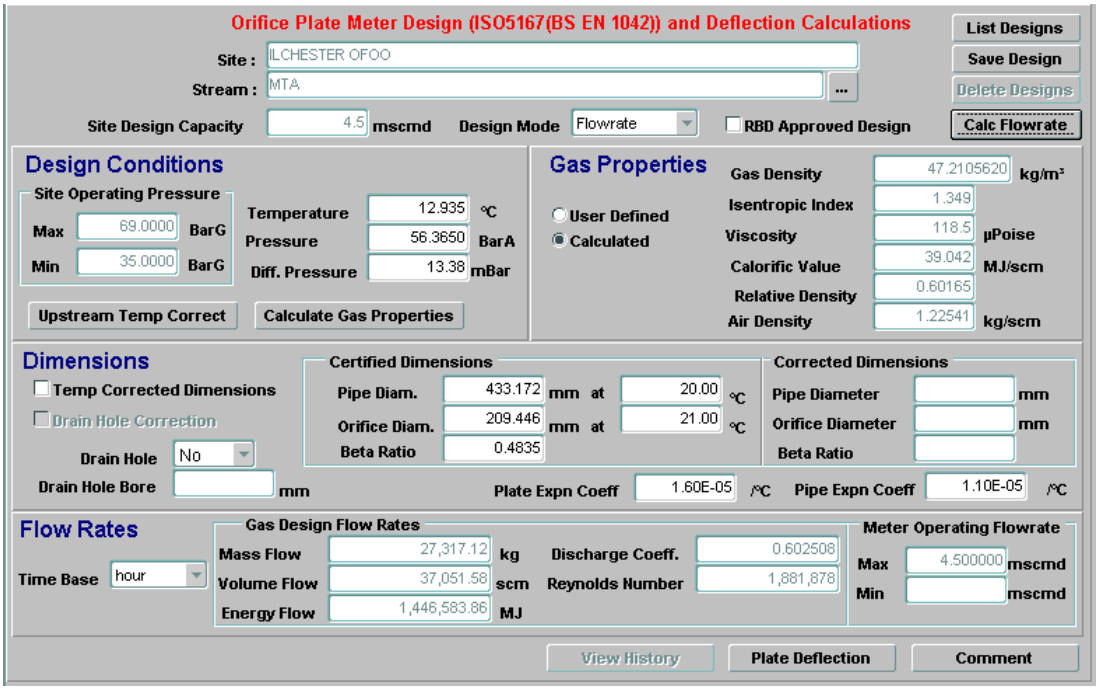
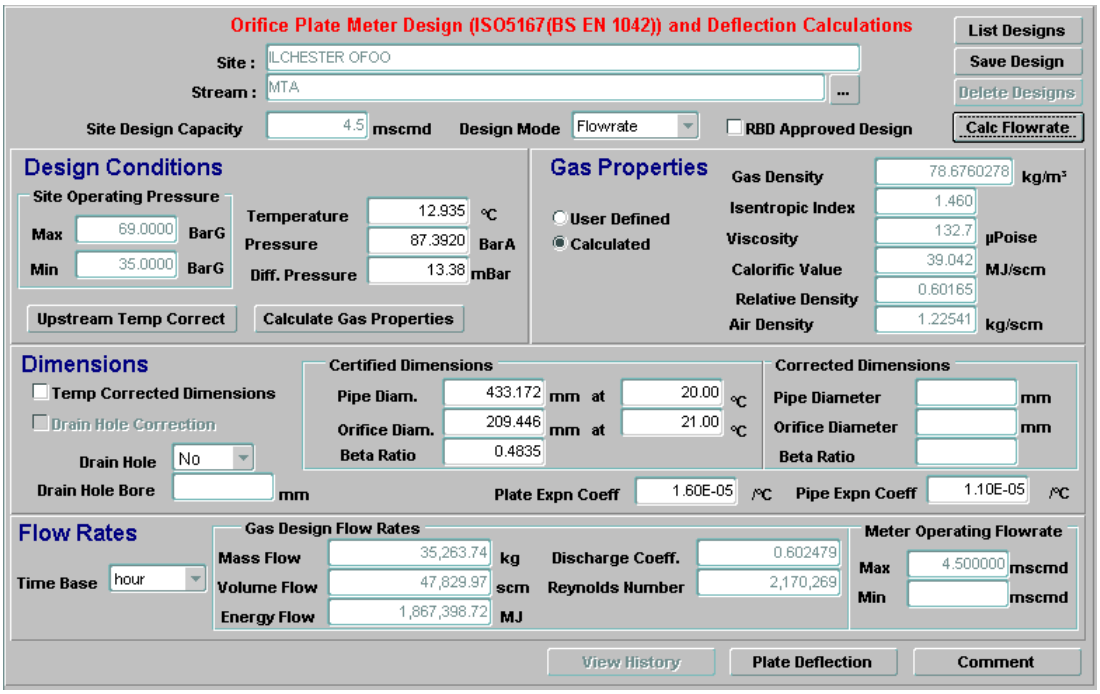


Fig. 1b - HPMIS screen shot for flow calculation using locked pressure value



4. RECOMMENDATIONS AND LEARNING

HPMIS (RBD data) should be monitored to identify any such future errors. Should the error re-occur an assessment of the transmitter may be required to ensure its integrity.

REFERENCES

ISO 5167

HPMIS database

VERSION HISTORY

Version	*Changes*	*Author*	*Date*
Rev0	*First draft*	*S Western*	*13/10/2010*
Rev1	*First draft*	*S Western*	*04/01/2011*