



Measurement Error Report

Air Liquide Biogas Solutions Europe

MER EM012 Hemswell BNEF

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1 Revision Control

Rev	Issue date	Description	Prep.	App.
1	29/07/2022	Issued for comment	CJ	LJ
2	22/09/2022	Final	CJ	BK

2 Executive Summary

Site Name	Hemswell BNEF
DNO	Cadent Gas Limited
LDZ	East Midlands
Error Start Date	31 st March 2022
(Or) Last Good Date	
Error Corrected Date	31 st March 2022
Size of Error (over or under read)	1,113.7 Sm ³ over registration (0.011 GWh)
Error Description	Erroneous readings on Fiscal meter
Methodology	Comparison of Inlet meter and Fiscal meter flow readings
Meter Type	Ultrasonic meter
MER Unique Reference Number	EM012
Cadent Internal Reference	MER/CAD/216/22

3 Error Description

Hemswell BNEF has a single 2" Sick FlowSic500 ultrasonic meter stream for measurement of gas exiting the grid entry unit (GEU) and entering the distribution network (referred to as Fiscal USM). A second 2" Sick FlowSic500 ultrasonic meter is located on the inlet to the GEU for process control (referred to in this report as Inlet USM). Propane injection is used to control the gas properties (e.g. calorific value, Wobbe number, etc.) to meet the requirements of the Gas Safety (Management) Regulations (GS(M)R). Gas that is not within specification is rejected by a diverter valve.

During normal operation the Fiscal USM will read slightly higher (~65 Sm³/h) than the Inlet USM due to the addition of propane.

Due to maintenance activities during the following time periods propane was not being injected therefore flow was registered on the Inlet USM but not the Fiscal USM

- 31/03/22 11:45-14:46

4 Methodology

Two sets of volume totals were calculated, one using the measured Fiscal USM flow and another using the corrected Fiscal USM flow, the error being the difference between the two. Figure 1 shows the volume flowrates for the Fiscal USM, the Inlet USM and the corrected Fiscal USM during the period of error on 31st March 2022.

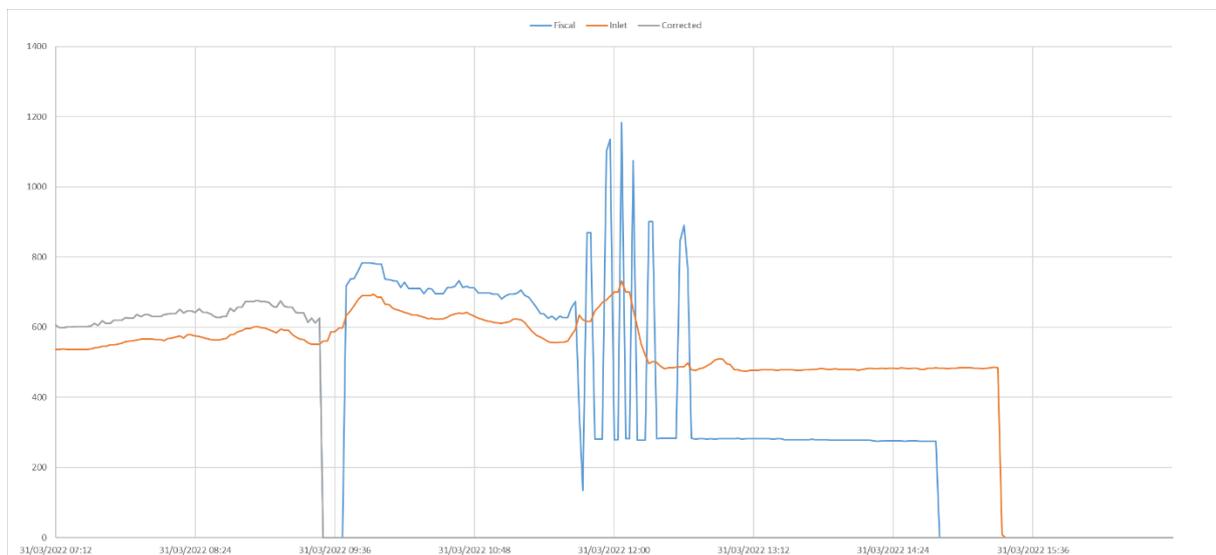


Figure 1 Volume flowrates for Fiscal USM, Inlet USM and corrected Fiscal USM

5 Error Quantification

The error is estimated to be an overall over registration of 39.03% or 1,113.72 Sm³.

6 Learning

Contamination on the Fiscal ultrasonic meter transducers has caused the meter to read erroneously. The pipework and meter were cleaned to prevent the issue from reoccurring. In addition, recommend considering additional liquid filtration on the propane injection line.

7 References

Hemswell MER Summary.xls
Hemswell MER data.xls

8 Appendix A – Daily Correction Factors

The error should be corrected using the Daily Correction Factors applied to the Gemini Daily Volumes as detailed below.

Gas Day	Gemini Daily Volume	Daily Correction Factor
31-03-22	4540	0.84402