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Client : SCOTIA GAS NETWORKS

Project Title : MEASUREMENT ERROR REPORTS

Document Title : MER SC010 ST FERGUS OFFTAKE

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REV	ISSUE DATE	DESCRIPTION	PREP. BY	APP. BY
1	31/03/14	Issue for Comment	BK	KV

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1.0 EXECUTIVE SUMMARY

Site Name	St Fergus Offtake
DNO	Scotia Gas Networks
LDZ	Scotland
Error Start Date	
(Or) Last Good Date	1 st April 2009
Error Corrected Date	28 th April 2011
Size of Error (over or under read)	1.6160 % under-registration (0.4876 Mscm)
Error Description	'As Found' errors during recalibration of turbine meters
Methodology	Correction of flow rates for 'As Found' errors
Meter Type	Turbine
MER Unique Reference Number	SC010

2.0 ERROR DESCRIPTION

St Fergus Offtake has two turbine meter streams with a GasPT for determination of density. The 4" Schlumberger turbine meters (s/n: 10409 and 10410) were installed in 1991 and removed in 2011 to be replaced by new Elster Instromet turbine meters (s/n: 10514905 and 10514906). The meters were not originally high pressure calibrated and the manufacturer's K factor (3018.350098 pulse/m³) was entered into the flow computer. The meters were calibrated following removal to determine the 'As Found' errors for streams 1 and 2, which are shown in Table 1 and Table 2 respectively.

Indicated Flow Rate (m³/h)	Error (%)	Frequency (Hz)	Corrected K Factor (pulse/m³)
19.99	-1.66	17	2968.258767
65.16	-1.59	55	2970.352177
108.88	-1.61	91	2969.759313
161.94	-1.66	136	2968.243234
199.44	-1.67	167	2967.945634
258.13	-1.64	216	2968.841256

Table 1 – Stream 1 (s/n: 10409) As Found Calibration Errors

Indicated Flow Rate (m³/h)	Error (%)	Frequency (Hz)	Corrected K Factor (pulse/m³)
20.58	-1.04	18	2987.484244
62.98	-0.21	53	3012.012911
111.69	-0.20	94	3012.315716
164.69	-0.19	138	3012.614584
208.38	-0.20	175	3012.324371
255.18	-0.15	213	3013.785909

Table 2 – Stream 2 (s/n: 10410) As Found Calibration Errors

3.0 METHODOLOGY

The 'As Found' calibration errors for each meter were used to correct the recorded flow rates. The frequency corresponding to each calibration point was calculated and the errors were interpolated between these points based on the recorded frequency. The data was recalculated on a 4-minutely basis to give a daily volume. Two sets of calculations were made one using the recorded data and another using corrected data, the error being the difference between the two.

The point at which the turbine meter performance deteriorated cannot be established with any certainty and therefore the errors may have been present since installation. This analysis considers that the errors could have been present for the maximum reconcilable period from 1st April 2009 until the meters were replaced. The turbine meter in stream 2 was replaced on 27th April 2011. The turbine meter in stream 1 was then replaced on 28th April 2011.

The daily volumes calculated from the recorded data were compared to the Gemini billed volumes to establish significant discrepancies between the results. The calculated errors on days which showed significant discrepancies have been excluded and assigned a default daily correction factor.

4.0 ERROR QUANTIFICATION

The error is calculated to be an under-registration of 1.6160 % for the period. As the start of the error cannot be determined half of the error should be reconciled in accordance with the Measurement Error Guidelines. The error should be corrected using the daily correction factors in Appendix A, which have been halved to reflect the unknown start date.

5.0 REFERENCES

HPMIS Database
MER_SC010_Data.xls – Calculation spreadsheet
MER_SC010_Summary.xls – Summary spreadsheet

APPENDIX – DAILY CORRECTION FACTORS

The daily volumes calculated from the recorded data were compared to the Gemini billed volumes. There were significant discrepancies between the results on 5th to 9th September 2009, 7th February 2011 and 27th April 2011. There were gaps in the RBD data in all instances. The daily correction factor for these days has been calculated from the mean of the surrounding period. For 5th to 9th September 2009 the average of the 3 days before and 3 days after has been used. For 7th February 2011 and 27th April 2011 the average of the 3 preceding days has been used because the standby meter was brought online on the following day in each instance, changing the error.

Gas Date	Daily Correction Factor
01/04/2009	1.008192
02/04/2009	1.008198
03/04/2009	1.008175
04/04/2009	1.008186
05/04/2009	1.008182
06/04/2009	1.008173
07/04/2009	1.008185
08/04/2009	1.008156
09/04/2009	1.008166
10/04/2009	1.008199
11/04/2009	1.008246
12/04/2009	1.008247
13/04/2009	1.008205
14/04/2009	1.008169
15/04/2009	1.008182
16/04/2009	1.008185
17/04/2009	1.008182
18/04/2009	1.008188
19/04/2009	1.008219
20/04/2009	1.008228
21/04/2009	1.008203
22/04/2009	1.008216
23/04/2009	1.008213
24/04/2009	1.008218
25/04/2009	1.008233
26/04/2009	1.008237
27/04/2009	1.008196
28/04/2009	1.008182
29/04/2009	1.008219
30/04/2009	1.008217
01/05/2009	1.008234
02/05/2009	1.008273
03/05/2009	1.008261
04/05/2009	1.008195
05/05/2009	1.008199
06/05/2009	1.008209
07/05/2009	1.008215
08/05/2009	1.008223
09/05/2009	1.008206
10/05/2009	1.008265
11/05/2009	1.008281
12/05/2009	1.008267
13/05/2009	1.008257
14/05/2009	1.008290

Gas Date	Daily Correction Factor
15/05/2009	1.008210
16/05/2009	1.008176
17/05/2009	1.008278
18/05/2009	1.008271
19/05/2009	1.008262
20/05/2009	1.008268
21/05/2009	1.007753
22/05/2009	1.008334
23/05/2009	1.008320
24/05/2009	1.008359
25/05/2009	1.008303
26/05/2009	1.008299
27/05/2009	1.008267
28/05/2009	1.008308
29/05/2009	1.008383
30/05/2009	1.008406
31/05/2009	1.008416
01/06/2009	1.008397
02/06/2009	1.008388
03/06/2009	1.008342
04/06/2009	1.008289
05/06/2009	1.008297
06/06/2009	1.008317
07/06/2009	1.008367
08/06/2009	1.008331
09/06/2009	1.008356
10/06/2009	1.008282
11/06/2009	1.008318
12/06/2009	1.008358
13/06/2009	1.008347
14/06/2009	1.008386
15/06/2009	1.008357
16/06/2009	1.008367
17/06/2009	1.008300
18/06/2009	1.008333
19/06/2009	1.008299
20/06/2009	1.008382
21/06/2009	1.008405
22/06/2009	1.008382
23/06/2009	1.008403
24/06/2009	1.008388
25/06/2009	1.008348
26/06/2009	1.008414
27/06/2009	1.008431

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Gas Date	Daily Correction Factor
28/06/2009	1.008435
29/06/2009	1.008418
30/06/2009	1.008422
01/07/2009	1.008427
02/07/2009	1.008434
03/07/2009	1.008433
04/07/2009	1.008438
05/07/2009	1.008438
06/07/2009	1.008434
07/07/2009	1.008425
08/07/2009	1.008398
09/07/2009	1.008361
10/07/2009	1.008381
11/07/2009	1.008405
12/07/2009	1.008375
13/07/2009	1.008406
14/07/2009	1.008420
15/07/2009	1.008424
16/07/2009	1.008424
17/07/2009	1.008400
18/07/2009	1.008395
19/07/2009	1.008418
20/07/2009	1.008423
21/07/2009	1.008422
22/07/2009	1.008427
23/07/2009	1.008428
24/07/2009	1.008411
25/07/2009	1.008423
26/07/2009	1.008413
27/07/2009	1.008410
28/07/2009	1.008407
29/07/2009	1.008420
30/07/2009	1.008423
31/07/2009	1.008419
01/08/2009	1.008418
02/08/2009	1.008425
03/08/2009	1.008412
04/08/2009	1.008415
05/08/2009	1.008418
06/08/2009	1.008424
07/08/2009	1.008427
08/08/2009	1.008435
09/08/2009	1.008436
10/08/2009	1.008423
11/08/2009	1.008411
12/08/2009	1.008415
13/08/2009	1.008417
14/08/2009	1.008393
15/08/2009	1.008421
16/08/2009	1.008427
17/08/2009	1.008402
18/08/2009	1.008385
19/08/2009	1.008402
20/08/2009	1.008404
21/08/2009	1.008396
22/08/2009	1.008408

Gas Date	Daily Correction Factor
23/08/2009	1.008385
24/08/2009	1.008401
25/08/2009	1.008399
26/08/2009	1.008362
27/08/2009	1.008380
28/08/2009	1.008317
29/08/2009	1.008370
30/08/2009	1.008389
31/08/2009	1.008378
01/09/2009	1.008396
02/09/2009	1.008383
03/09/2009	1.008330
04/09/2009	1.008347
05/09/2009	1.008363*
06/09/2009	1.008363*
07/09/2009	1.008363*
08/09/2009	1.008363*
09/09/2009	1.008363*
10/09/2009	1.008369
11/09/2009	1.008374
12/09/2009	1.008377
13/09/2009	1.008365
14/09/2009	1.008331
15/09/2009	1.008317
16/09/2009	1.008316
17/09/2009	1.008332
18/09/2009	1.008343
19/09/2009	1.008374
20/09/2009	1.008362
21/09/2009	1.008327
22/09/2009	1.008333
23/09/2009	1.008304
24/09/2009	1.008328
25/09/2009	1.008356
26/09/2009	1.008386
27/09/2009	1.008379
28/09/2009	1.008300
29/09/2009	1.008271
30/09/2009	1.008253
01/10/2009	1.008199
02/10/2009	1.008210
03/10/2009	1.008220
04/10/2009	1.008202
05/10/2009	1.008214
06/10/2009	1.008220
07/10/2009	1.008203
08/10/2009	1.008174
09/10/2009	1.008166
10/10/2009	1.008216
11/10/2009	1.008216
12/10/2009	1.008214
13/10/2009	1.008191
14/10/2009	1.008270
15/10/2009	1.008263
16/10/2009	1.008213
17/10/2009	1.008239

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Gas Date	Daily Correction Factor
18/10/2009	1.008191
19/10/2009	1.008162
20/10/2009	1.008180
21/10/2009	1.008165
22/10/2009	1.008164
23/10/2009	1.008192
24/10/2009	1.008204
25/10/2009	1.008247
26/10/2009	1.008202
27/10/2009	1.008178
28/10/2009	1.008247
29/10/2009	1.008237
30/10/2009	1.008208
31/10/2009	1.008273
01/11/2009	1.008220
02/11/2009	1.008193
03/11/2009	1.008171
04/11/2009	1.008186
05/11/2009	1.008176
06/11/2009	1.008162
07/11/2009	1.008189
08/11/2009	1.008174
09/11/2009	1.008173
10/11/2009	1.008063
11/11/2009	1.008169
12/11/2009	1.008156
13/11/2009	1.008175
14/11/2009	1.008176
15/11/2009	1.008164
16/11/2009	1.008166
17/11/2009	1.008157
18/11/2009	1.008170
19/11/2009	1.008174
20/11/2009	1.008193
21/11/2009	1.008164
22/11/2009	1.008172
23/11/2009	1.008173
24/11/2009	1.008164
25/11/2009	1.008167
26/11/2009	1.008168
27/11/2009	1.008169
28/11/2009	1.008157
29/11/2009	1.008162
30/11/2009	1.008192
01/12/2009	1.008209
02/12/2009	1.008178
03/12/2009	1.008173
04/12/2009	1.008163
05/12/2009	1.008158
06/12/2009	1.008158
07/12/2009	1.008170
08/12/2009	1.008170
09/12/2009	1.008171
10/12/2009	1.008171
11/12/2009	1.008186
12/12/2009	1.008165

Gas Date	Daily Correction Factor
13/12/2009	1.008168
14/12/2009	1.008174
15/12/2009	1.008170
16/12/2009	1.008171
17/12/2009	1.008195
18/12/2009	1.008206
19/12/2009	1.008194
20/12/2009	1.008192
21/12/2009	1.008205
22/12/2009	1.008215
23/12/2009	1.008192
24/12/2009	1.008174
25/12/2009	1.008156
26/12/2009	1.008170
27/12/2009	1.008170
28/12/2009	1.008174
29/12/2009	1.008190
30/12/2009	1.008187
31/12/2009	1.008178
01/01/2010	1.008172
02/01/2010	1.008183
03/01/2010	1.008180
04/01/2010	1.008194
05/01/2010	1.008223
06/01/2010	1.008227
07/01/2010	1.008222
08/01/2010	1.008240
09/01/2010	1.008200
10/01/2010	1.008185
11/01/2010	1.008223
12/01/2010	1.008217
13/01/2010	1.008224
14/01/2010	1.008204
15/01/2010	1.008205
16/01/2010	1.008186
17/01/2010	1.008170
18/01/2010	1.008187
19/01/2010	1.008205
20/01/2010	1.008219
21/01/2010	1.008214
22/01/2010	1.008196
23/01/2010	1.008168
24/01/2010	1.008170
25/01/2010	1.008213
26/01/2010	1.008210
27/01/2010	1.008194
28/01/2010	1.008209
29/01/2010	1.008224
30/01/2010	1.008196
31/01/2010	1.008196
01/02/2010	1.008232
02/02/2010	1.008225
03/02/2010	1.008223
04/02/2010	1.008220
05/02/2010	1.008195
06/02/2010	1.008170

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Gas Date	Daily Correction Factor
07/02/2010	1.008159
08/02/2010	1.008199
09/02/2010	1.008207
10/02/2010	1.008192
11/02/2010	1.008194
12/02/2010	1.008182
13/02/2010	1.008164
14/02/2010	1.008155
15/02/2010	1.008185
16/02/2010	1.008233
17/02/2010	1.008190
18/02/2010	1.008222
19/02/2010	1.008205
20/02/2010	1.008182
21/02/2010	1.008180
22/02/2010	1.008223
23/02/2010	1.008211
24/02/2010	1.008232
25/02/2010	1.008244
26/02/2010	1.008223
27/02/2010	1.008182
28/02/2010	1.008164
01/03/2010	1.008207
02/03/2010	1.008208
03/03/2010	1.008202
04/03/2010	1.008200
05/03/2010	1.008194
06/03/2010	1.008165
07/03/2010	1.008158
08/03/2010	1.008169
09/03/2010	1.008186
10/03/2010	1.008189
11/03/2010	1.008175
12/03/2010	1.008172
13/03/2010	1.008164
14/03/2010	1.008154
15/03/2010	1.008171
16/03/2010	1.008184
17/03/2010	1.008194
18/03/2010	1.008187
19/03/2010	1.008195
20/03/2010	1.008188
21/03/2010	1.008192
22/03/2010	1.008161
23/03/2010	1.008191
24/03/2010	1.008168
25/03/2010	1.008165
26/03/2010	1.008175
27/03/2010	1.008191
28/03/2010	1.008153
29/03/2010	1.008169
30/03/2010	1.008192
31/03/2010	1.008206
01/04/2010	1.008182
02/04/2010	1.008182
03/04/2010	1.008157

Gas Date	Daily Correction Factor
04/04/2010	1.008164
05/04/2010	1.008168
06/04/2010	1.008161
07/04/2010	1.008186
08/04/2010	1.008186
09/04/2010	1.008192
10/04/2010	1.008252
11/04/2010	1.008231
12/04/2010	1.008199
13/04/2010	1.008203
14/04/2010	1.008179
15/04/2010	1.008184
16/04/2010	1.008218
17/04/2010	1.008210
18/04/2010	1.008192
19/04/2010	1.008174
20/04/2010	1.008167
21/04/2010	1.008170
22/04/2010	1.008169
23/04/2010	1.008172
24/04/2010	1.008190
25/04/2010	1.008228
26/04/2010	1.008250
27/04/2010	1.008216
28/04/2010	1.008259
29/04/2010	1.008267
30/04/2010	1.008281
01/05/2010	1.008259
02/05/2010	1.008217
03/05/2010	1.008178
04/05/2010	1.008154
05/05/2010	1.008167
06/05/2010	1.008185
07/05/2010	1.008251
08/05/2010	1.008242
09/05/2010	1.008226
10/05/2010	1.008155
11/05/2010	1.008184
12/05/2010	1.008221
13/05/2010	1.008198
14/05/2010	1.008215
15/05/2010	1.008292
16/05/2010	1.008313
17/05/2010	1.008290
18/05/2010	1.008314
19/05/2010	1.008332
20/05/2010	1.008370
21/05/2010	1.008399
22/05/2010	1.008423
23/05/2010	1.008422
24/05/2010	1.008316
25/05/2010	1.008278
26/05/2010	1.008269
27/05/2010	1.008041
28/05/2010	1.008257
29/05/2010	1.008323

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Gas Date	Daily Correction Factor
30/05/2010	1.008310
31/05/2010	1.008322
01/06/2010	1.008294
02/06/2010	1.008343
03/06/2010	1.008359
04/06/2010	1.008364
05/06/2010	1.008398
06/06/2010	1.008374
07/06/2010	1.008318
08/06/2010	1.008275
09/06/2010	1.008288
10/06/2010	1.008274
11/06/2010	1.008274
12/06/2010	1.008292
13/06/2010	1.008345
14/06/2010	1.008312
15/06/2010	1.008341
16/06/2010	1.008366
17/06/2010	1.008381
18/06/2010	1.008316
19/06/2010	1.008244
20/06/2010	1.008288
21/06/2010	1.008314
22/06/2010	1.008346
23/06/2010	1.008380
24/06/2010	1.008390
25/06/2010	1.008382
26/06/2010	1.008412
27/06/2010	1.008422
28/06/2010	1.008407
29/06/2010	1.008408
30/06/2010	1.008409
01/07/2010	1.008395
02/07/2010	1.008417
03/07/2010	1.008430
04/07/2010	1.008420
05/07/2010	1.008408
06/07/2010	1.008404
07/07/2010	1.008418
08/07/2010	1.008424
09/07/2010	1.008414
10/07/2010	1.008402
11/07/2010	1.008425
12/07/2010	1.008420
13/07/2010	1.008421
14/07/2010	1.008385
15/07/2010	1.008399
16/07/2010	1.008416
17/07/2010	1.008423
18/07/2010	1.008426
19/07/2010	1.008423
20/07/2010	1.008426
21/07/2010	1.008368
22/07/2010	1.008391
23/07/2010	1.008407
24/07/2010	1.008424

Gas Date	Daily Correction Factor
25/07/2010	1.008432
26/07/2010	1.008408
27/07/2010	1.008411
28/07/2010	1.008409
29/07/2010	1.008409
30/07/2010	1.008393
31/07/2010	1.008415
01/08/2010	1.008419
02/08/2010	1.008383
03/08/2010	1.008390
04/08/2010	1.008404
05/08/2010	1.008411
06/08/2010	1.008417
07/08/2010	1.008429
08/08/2010	1.008429
09/08/2010	1.008398
10/08/2010	1.008399
11/08/2010	1.008379
12/08/2010	1.008383
13/08/2010	1.008369
14/08/2010	1.008412
15/08/2010	1.008419
16/08/2010	1.008394
17/08/2010	1.008381
18/08/2010	1.008382
19/08/2010	1.008395
20/08/2010	1.008406
21/08/2010	1.008425
22/08/2010	1.008424
23/08/2010	1.008374
24/08/2010	1.008332
25/08/2010	1.008340
26/08/2010	1.008373
27/08/2010	1.008355
28/08/2010	1.008387
29/08/2010	1.008333
30/08/2010	1.008318
31/08/2010	1.008348
01/09/2010	1.008322
02/09/2010	1.008365
03/09/2010	1.008382
04/09/2010	1.008401
05/09/2010	1.008401
06/09/2010	1.008352
07/09/2010	1.008286
08/09/2010	1.008279
09/09/2010	1.008350
10/09/2010	1.008356
11/09/2010	1.008350
12/09/2010	1.008385
13/09/2010	1.008305
14/09/2010	1.008311
15/09/2010	1.008232
16/09/2010	1.008211
17/09/2010	1.008187
18/09/2010	1.008248

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Gas Date	Daily Correction Factor
19/09/2010	1.008262
20/09/2010	1.008247
21/09/2010	1.008240
22/09/2010	1.008287
23/09/2010	1.008189
24/09/2010	1.008169
25/09/2010	1.008190
26/09/2010	1.008257
27/09/2010	1.008215
28/09/2010	1.008193
29/09/2010	1.008182
30/09/2010	1.008246
01/10/2010	1.008203
02/10/2010	1.008247
03/10/2010	1.008268
04/10/2010	1.008242
05/10/2010	1.008240
06/10/2010	1.008220
07/10/2010	1.008225
08/10/2010	1.008207
09/10/2010	1.008247
10/10/2010	1.008256
11/10/2010	1.008230
12/10/2010	1.008206
13/10/2010	1.008179
14/10/2010	1.008199
15/10/2010	1.008196
16/10/2010	1.008226
17/10/2010	1.008203
18/10/2010	1.008180
19/10/2010	1.008157
20/10/2010	1.008167
21/10/2010	1.008169
22/10/2010	1.008164
23/10/2010	1.008176
24/10/2010	1.008153
25/10/2010	1.008171
26/10/2010	1.008167
27/10/2010	1.008191
28/10/2010	1.008179
29/10/2010	1.008190
30/10/2010	1.008203
31/10/2010	1.008185
01/11/2010	1.008174
02/11/2010	1.008178
03/11/2010	1.008174
04/11/2010	1.007389
05/11/2010	1.008168
06/11/2010	1.008154
07/11/2010	1.008162
08/11/2010	1.008184
09/11/2010	1.008178
10/11/2010	1.008172
11/11/2010	1.008176
12/11/2010	1.008167
13/11/2010	1.008153

Gas Date	Daily Correction Factor
14/11/2010	1.008149
15/11/2010	1.008176
16/11/2010	1.008191
17/11/2010	1.008194
18/11/2010	1.008190
19/11/2010	1.008171
20/11/2010	1.008156
21/11/2010	1.008153
22/11/2010	1.008171
23/11/2010	1.008184
24/11/2010	1.008204
25/11/2010	1.008223
26/11/2010	1.008213
27/11/2010	1.008193
28/11/2010	1.008199
29/11/2010	1.008251
30/11/2010	1.008241
01/12/2010	1.008260
02/12/2010	1.008236
03/12/2010	1.008286
04/12/2010	1.008203
05/12/2010	1.008190
06/12/2010	1.008232
07/12/2010	1.008240
08/12/2010	1.008250
09/12/2010	1.008230
10/12/2010	1.008192
11/12/2010	1.008168
12/12/2010	1.008159
13/12/2010	1.008199
14/12/2010	1.008189
15/12/2010	1.008188
16/12/2010	1.008245
17/12/2010	1.008264
18/12/2010	1.008214
19/12/2010	1.008193
20/12/2010	1.008213
21/12/2010	1.008232
22/12/2010	1.008229
23/12/2010	1.008221
24/12/2010	1.008196
25/12/2010	1.008181
26/12/2010	1.008186
27/12/2010	1.008193
28/12/2010	1.008188
29/12/2010	1.008174
30/12/2010	1.008166
31/12/2010	1.008170
01/01/2011	1.008171
02/01/2011	1.008178
03/01/2011	1.008184
04/01/2011	1.008189
05/01/2011	1.008205
06/01/2011	1.008237
07/01/2011	1.008264
08/01/2011	1.008199

**SCOTIA GAS NETWORKS
MEASUREMENT ERROR REPORTS**



Gas Date	Daily Correction Factor
09/01/2011	1.008208
10/01/2011	1.008223
11/01/2011	1.008220
12/01/2011	1.008223
13/01/2011	1.008202
14/01/2011	1.008192
15/01/2011	1.008166
16/01/2011	1.008158
17/01/2011	1.008185
18/01/2011	1.008215
19/01/2011	1.008200
20/01/2011	1.008213
21/01/2011	1.008208
22/01/2011	1.008167
23/01/2011	1.008160
24/01/2011	1.008196
25/01/2011	1.008185
26/01/2011	1.008199
27/01/2011	1.008193
28/01/2011	1.008205
29/01/2011	1.008178
30/01/2011	1.008171
31/01/2011	1.008204
01/02/2011	1.008187
02/02/2011	1.008192
03/02/2011	1.008218
04/02/2011	1.008209
05/02/2011	1.008173
06/02/2011	1.008173
07/02/2011	1.008185*
08/02/2011	1.007620
09/02/2011	1.008205
10/02/2011	1.008186
11/02/2011	1.008203
12/02/2011	1.008187
13/02/2011	1.008170
14/02/2011	1.008185
15/02/2011	1.008209
16/02/2011	1.008213
17/02/2011	1.008179
18/02/2011	1.008197
19/02/2011	1.008198
20/02/2011	1.008180
21/02/2011	1.008240
22/02/2011	1.008205
23/02/2011	1.008192
24/02/2011	1.008177
25/02/2011	1.008186
26/02/2011	1.008169
27/02/2011	1.008165
28/02/2011	1.008180
01/03/2011	1.008186
02/03/2011	1.008180
03/03/2011	1.008181
04/03/2011	1.008179
05/03/2011	1.008182

Gas Date	Daily Correction Factor
06/03/2011	1.008180
07/03/2011	1.008177
08/03/2011	1.008175
09/03/2011	1.008195
10/03/2011	1.008191
11/03/2011	1.008194
12/03/2011	1.008182
13/03/2011	1.008173
14/03/2011	1.008199
15/03/2011	1.008189
16/03/2011	1.008178
17/03/2011	1.008176
18/03/2011	1.008182
19/03/2011	1.008188
20/03/2011	1.008190
21/03/2011	1.008201
22/03/2011	1.008179
23/03/2011	1.008184
24/03/2011	1.008190
25/03/2011	1.008171
26/03/2011	1.008151
27/03/2011	1.008178
28/03/2011	1.008173
29/03/2011	1.008173
30/03/2011	1.008166
31/03/2011	1.008162
01/04/2011	1.008170
02/04/2011	1.008196
03/04/2011	1.008222
04/04/2011	1.008153
05/04/2011	1.008211
06/04/2011	1.008245
07/04/2011	1.008191
08/04/2011	1.008202
09/04/2011	1.008256
10/04/2011	1.008294
11/04/2011	1.008201
12/04/2011	1.008197
13/04/2011	1.008163
14/04/2011	1.008203
15/04/2011	1.008234
16/04/2011	1.008240
17/04/2011	1.008300
18/04/2011	1.008211
19/04/2011	1.008221
20/04/2011	1.008247
21/04/2011	1.008236
22/04/2011	1.008244
23/04/2011	1.008245
24/04/2011	1.008278
25/04/2011	1.008241
26/04/2011	1.008254
27/04/2011	1.008258*
28/04/2011	1.002400