

PUBLIC VERSION

July 17, 2023

Via Electronic Filing

Andrew S. Johnston
Executive Secretary
Maryland Public Service Commission
6 St. Paul Street, 16th Floor
Baltimore, MD 21202

Re: Case No. 9035 Washington Gas' 69th Quarterly Leak Report

Mr. Johnston:

Pursuant to the Commission's April 7, 2005 Notice of Inquiry, as modified by the Notice of Change in Reporting dated April 12, 2006 in the above-referenced proceeding, Washington Gas hereby files its 69th Quarterly Report in this proceeding.

Please contact me if you have any questions.

Sincerely,



Spencer Nichols
Assistant General Counsel

cc: John Clementson, Assistant Chief Engineer
Lloyd Spivak, Chief Staff Counsel
David S. Lapp, Maryland People's Counsel
Joel L. Greene, Esq.

IN THE MATTER OF THE INQUIRY INTO NATURAL GAS :
LEAKS FROM THE WASHINGTON GAS LIGHT COMPANY : CASE NO. 9035
DISTRIBUTION SYSTEM :

WASHINGTON GAS LIGHT COMPANY
69th QUARTERLY REPORT

Pursuant to the Notice of Inquiry dated April 7, 2005 in the captioned proceeding, as modified by the Notice of Change in Reporting dated April 12, 2006, Washington Gas Light Company ("Washington Gas" or "Company") files its 69th Quarterly Report in this proceeding.

The rehabilitation project to address the increase in mechanical coupling leaks in the affected area in Prince George's County, as modified by the Company on August 8, 2006, has been completed. Washington Gas is continuing to conduct leak surveys within the affected area in accordance with applicable regulations. All new Grade 1 leaks continue to be repaired immediately upon discovery and all new Grade 2 leaks within the affected area will be repaired within normal timeframes.

Washington Gas, Staff and the Office of People's Counsel ("OPC") met during the fall of 2015 to review the data submitted in the quarterly reports filed by the Company, including data regarding hexane injections. The Company offered to supplement its quarterly reports and OPC offered to develop a quarterly data protocol. The parties agreed that going forward an annual meeting regarding the Company's hexane injection program would be sufficient.

A **CONFIDENTIAL** report showing for each gate station on each of Washington Gas's interstate pipeline suppliers whether there is hexane injection capability at the gate station. Also attached are an annual summary of coupling leaks in Montgomery and Prince George's Counties from 2000 to date and the monthly leaks, along with the calculation of the Z Value, for both Counties.

In response to the specific questions raised by the Commission in the April 7, 2005 Notice of Inquiry, Washington Gas states as follows:

1. The written project plan and future revisions, including maps of the affected area.

The rehabilitation project in the affected area has been completed. However, the Company continues planned replacement of coupled pipe in Prince George's County based on engineering analysis of leak data.

2. Operator Qualification plans for additional crews and progress in obtaining the additional crews.

The rehabilitation project in the affected area has been completed.

3. Construction notices of planned repairs of known leaks.

The rehabilitation project in the affected area has been completed.

4. Construction notices for planned replacements of gas service lines and repairs of gas mains in the affected area.

The rehabilitation project in the affected area has been completed.

5. Updates on the investigations of the reason(s) for the degradation of the seals in the couplings.

Washington Gas is continuing to monitor coupling leaks throughout its distribution system.

6. Descriptions of any “temporary” remediation plans to correct or reduce future leaks until the rehabilitation program is completed.

Washington Gas continues to operate three hexane injection facilities. These facilities are used to condition domestic gas having low C5+ concentrations.

Washington Gas is continuing to monitor and analyze coupling leak rates in all areas of the system, including in the affected area of Prince George’s County. All leaks which are found are being addressed in compliance with DOT requirements.

Summary of Coupling Leaks
In Montgomery and Prince George's Counties, Maryland
2000 through 2023 (1st Quarter)
69th Quarterly Report

	Coupling Leaks	
Year	Montgomery County	Prince George's County
2000	140	206
2001	171	241
2002	231	122
2003	167	429
2004	193	1870
2005	229	1929
2006	274	1163
2007	252	783
2008	329	487
2009	313	464
2010	211	319
2011	130	108
2012	160	68
2013	279	132
2014	425	209
2015	360	227
2016	460	340
2017	925	636
2018	1371	711
2019	1353	765
2020	1006	615
2021	862	527
2022	657	375
2023	230	131

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County

yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
200001	12			
200002	20			
200003	10			
200004	9			
200005	6			
200006	6			
200007	9			
200008	14			
200009	14			
200010	18			
200011	15			
200012	7			
200101	26			
200102	19			
200103	14			
200104	6			
200105	7			
200106	8			
200107	10			
200108	10			
200109	21			
200110	16			
200111	18			
200112	16			
200201	44			
200202	15			
200203	7			
200204	15			
200205	19			
200206	20			
200207	10			
200208	12			
200209	15			
200210	22			
200211	19			
200212	33			
200301	14	15.06	7.87	-0.13
200302	15	15.11	7.85	-0.01
200303	19	14.97	7.81	0.52
200304	6	15.22	7.79	-1.18
200305	11	15.14	7.87	-0.53
200306	8	15.28	7.75	-0.94
200307	4	15.33	7.69	-1.47

Prince George's County

yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
200001	14			
200002	36			
200003	6			
200004	7			
200005	14			
200006	15			
200007	20			
200008	7			
200009	18			
200010	30			
200011	25			
200012	14			
200101	30			
200102	39			
200103	55			
200104	9			
200105	7			
200106	8			
200107	11			
200108	8			
200109	10			
200110	22			
200111	20			
200112	22			
200201	22			
200202	8			
200203	8			
200204	11			
200205	8			
200206	3			
200207	2			
200208	4			
200209	8			
200210	12			
200211	8			
200212	28			
200301	24	15.81	11.56	0.71
200302	26	16.08	11.63	0.85
200303	20	15.81	11.26	0.37
200304	12	16.19	11.15	-0.38
200305	10	16.33	11.06	-0.57
200306	10	16.22	11.10	-0.56
200307	9	16.08	11.15	-0.64

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County					Prince George's County				
yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value	yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
200308	12	15.19	7.85	-0.41	200308	9	15.78	11.19	-0.61
200309	23	15.14	7.86	1.00	200309	19	15.83	11.15	0.28
200310	17	15.39	7.97	0.20	200310	19	15.86	11.16	0.28
200311	23	15.36	7.96	0.96	200311	61	15.56	10.91	4.17
200312	15	15.58	8.06	-0.07	200312	210	16.56	13.21	14.65
200401	18	15.81	7.93	0.28	200401	250	22.00	34.83	6.55
200402	11	15.58	7.74	-0.59	200402	365	28.11	51.56	6.53
200403	7	15.36	7.76	-1.08	200403	102	37.17	76.24	0.85
200404	10	15.17	7.88	-0.66	200404	79	38.47	76.96	0.53
200405	6	15.28	7.77	-1.19	200405	29	40.42	77.07	-0.15
200406	4	15.25	7.81	-1.44	200406	52	41.03	76.89	0.14
200407	6	15.14	7.94	-1.15	200407	32	42.25	76.70	-0.13
200408	15	15.03	8.04	0.00	200408	92	42.83	76.53	0.64
200409	26	15.17	7.99	1.36	200409	136	45.17	76.72	1.18
200410	18	15.31	8.14	0.33	200410	200	48.67	77.94	1.94
200411	39	15.36	8.15	2.90	200411	241	53.61	81.75	2.29
200412	33	15.94	9.05	1.88	200412	292	59.75	87.26	2.66
200501	27	16.42	9.48	1.12	200501	273	67.25	95.17	2.16
200502	18	15.94	8.44	0.24	200502	319	74.22	100.79	2.43
200503	15	16.03	8.44	-0.12	200503	245	82.86	108.02	1.50
200504	18	16.25	8.30	0.21	200504	149	89.44	110.52	0.54
200505	19	16.33	8.30	0.32	200505	91	93.28	110.11	-0.02
200506	11	16.33	8.30	-0.64	200506	68	95.58	109.14	-0.25
200507	7	16.08	8.33	-1.09	200507	67	97.39	108.10	-0.28
200508	15	16.00	8.40	-0.12	200508	57	99.19	107.00	-0.39
200509	16	16.08	8.38	-0.01	200509	93	100.67	106.01	-0.07
200510	37	16.11	8.38	2.49	200510	114	103.03	104.83	0.10
200511	18	16.53	9.03	0.16	200511	145	105.86	103.67	0.38
200512	28	16.50	9.02	1.28	200512	308	109.67	102.48	1.94
200601	41	16.36	8.79	2.80	200601	278	117.44	106.65	1.51
200602	21	17.11	9.69	0.40	200602	210	124.50	108.67	0.79
200603	13	17.28	9.71	-0.44	200603	85	129.61	108.23	-0.41
200604	7	17.11	9.73	-1.04	200604	41	131.42	106.89	-0.85
200605	14	17.14	9.70	-0.32	200605	43	132.22	106.07	-0.84
200606	10	17.22	9.65	-0.75	200606	20	133.14	105.12	-1.08
200607	17	17.28	9.61	-0.03	200607	35	133.42	104.80	-0.94
200608	20	17.64	9.33	0.25	200608	23	134.14	104.00	-1.07
200609	24	17.86	9.29	0.66	200609	63	134.53	103.55	-0.69
200610	31	17.89	9.31	1.41	200610	97	135.75	102.40	-0.38
200611	39	18.28	9.56	2.17	200611	124	137.92	100.67	-0.14
200612	37	18.72	10.14	1.80	200612	144	139.67	99.83	0.04
200701	35	19.33	10.56	1.48	200701	182	137.83	99.11	0.45
200702	21	19.81	10.88	0.11	200702	125	135.94	97.55	-0.11
200703	16	20.08	10.77	-0.38	200703	99	129.28	89.30	-0.34
200704	10	20.33	10.56	-0.98	200704	61	129.19	89.32	-0.76
200705	13	20.33	10.56	-0.69	200705	51	128.69	89.66	-0.87
200706	11	20.53	10.35	-0.92	200706	28	129.31	89.04	-1.14

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County					Prince George's County				
yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value	yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
200707	10	20.72	10.10	-1.06	200707	19	128.64	89.72	-1.22
200708	8	20.83	9.95	-1.29	200708	14	128.28	90.14	-1.27
200709	20	20.64	10.13	-0.06	200709	25	126.11	91.96	-1.10
200710	19	20.47	10.09	-0.15	200710	31	123.03	93.47	-0.98
200711	37	20.50	10.09	1.64	200711	67	118.33	93.74	-0.55
200712	52	20.44	9.99	3.16	200712	81	113.50	91.69	-0.35
200801	40	20.97	11.11	1.71	200801	98	107.64	86.56	-0.11
200802	37	21.33	11.51	1.36	200802	79	102.78	81.79	-0.29
200803	29	21.86	11.79	0.61	200803	43	96.11	72.96	-0.73
200804	28	22.25	11.79	0.49	200804	24	90.50	68.84	-0.97
200805	15	22.53	11.80	-0.64	200805	22	87.03	68.96	-0.94
200806	18	22.42	11.85	-0.37	200806	17	85.11	69.80	-0.98
200807	10	22.61	11.72	-1.08	200807	12	83.69	70.67	-1.01
200808	15	22.69	11.61	-0.66	200808	21	82.17	71.62	-0.85
200809	16	22.69	11.61	-0.58	200809	20	81.17	72.23	-0.85
200810	37	22.69	11.61	1.23	200810	38	79.14	72.91	-0.56
200811	37	22.69	11.61	1.23	200811	33	77.03	72.98	-0.60
200812	47	23.22	11.83	2.01	200812	80	73.92	72.38	0.08
200901	54	23.75	12.45	2.43	200901	80	67.58	60.28	0.21
200902	24	24.11	13.14	-0.01	200902	51	62.08	48.39	-0.23
200903	22	24.19	13.13	-0.17	200903	39	57.67	41.23	-0.45
200904	9	24.44	12.99	-1.19	200904	23	56.39	41.07	-0.81
200905	9	24.50	12.92	-1.20	200905	22	55.89	41.37	-0.82
200906	13	24.36	13.06	-0.87	200906	12	55.31	41.70	-1.04
200907	23	24.44	12.98	-0.11	200907	10	55.08	41.92	-1.08
200908	17	24.61	12.92	-0.59	200908	10	54.39	42.46	-1.05
200909	18	24.53	12.96	-0.50	200909	10	54.03	42.79	-1.03
200910	36	24.36	13.00	0.90	200910	47	52.56	43.38	-0.13
200911	37	24.50	13.10	0.95	200911	53	51.17	42.72	0.04
200912	51	24.44	13.04	2.04	200912	107	49.19	40.86	1.41
201001	30	24.83	13.62	0.38	201001	87	48.17	38.82	1.00
201002	34	24.69	13.54	0.69	201002	87	45.53	32.11	1.29
201003	23	25.06	13.61	-0.15	201003	46	44.47	29.97	0.05
201004	18	25.25	13.53	-0.54	201004	17	43.00	28.48	-0.91
201005	16	25.47	13.34	-0.71	201005	13	41.78	28.63	-1.01
201006	13	25.56	13.27	-0.95	201006	6	40.72	28.98	-1.20
201007	10	25.61	13.21	-1.18	201007	9	40.11	29.48	-1.06
201008	18	25.61	13.21	-0.58	201008	6	39.83	29.74	-1.14
201009	10	25.89	12.93	-1.23	201009	12	39.61	29.96	-0.92
201010	19	25.61	13.16	-0.50	201010	14	39.25	30.22	-0.84
201011	13	25.61	13.16	-0.96	201011	11	38.78	30.49	-0.91
201012	7	24.94	13.18	-1.36	201012	11	37.22	30.43	-0.86
201101	9	23.69	12.66	-1.16	201101	25	35.28	29.79	-0.35
201102	11	22.83	12.58	-0.94	201102	14	33.25	27.81	-0.69
201103	15	22.11	12.48	-0.57	201103	12	31.44	26.85	-0.72
201104	9	21.72	12.48	-1.02	201104	4	30.58	26.97	-0.99
201105	4	21.19	12.61	-1.36	201105	5	30.03	27.31	-0.92

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County					Prince George's County				
yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value	yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
201106	5	20.89	12.89	-1.23	201106		29.56	27.60	-1.07
201107	5	20.53	13.16	-1.18	201107	3	29.91	27.92	-0.96
201108	4	20.39	13.30	-1.23	201108	10	29.66	28.13	-0.70
201109	11	20.08	13.55	-0.67	201109	6	29.34	28.29	-0.83
201110	21	19.94	13.62	0.08	201110	10	28.94	28.52	-0.66
201111	15	19.50	13.30	-0.34	201111	12	28.14	28.65	-0.56
201112	21	18.89	12.98	0.16	201112	7	27.54	28.77	-0.71
201201	18	18.17	12.06	-0.01	201201	6	25.46	27.47	-0.71
201202	11	17.17	10.38	-0.59	201202	9	23.34	25.95	-0.55
201203	9	16.81	10.36	-0.75	201203	2	22.14	25.61	-0.79
201204	7	16.44	10.40	-0.91	201204		21.09	25.65	-0.82
201205	3	16.39	10.45	-1.28	201205	1	21.03	26.04	-0.77
201206	7	16.22	10.61	-0.87	201206	1	20.41	26.26	-0.74
201207	2	16.06	10.71	-1.31	201207	1	20.09	26.44	-0.72
201208	6	15.47	10.89	-0.87	201208	3	19.82	26.58	-0.63
201209	6	15.17	11.00	-0.83	201209	2	19.62	26.69	-0.66
201210	27	14.83	11.10	1.10	201210	11	19.38	26.81	-0.31
201211	47	14.58	10.70	3.03	201211	21	18.32	26.40	0.10
201212	17	14.86	11.40	0.19	201212	11	17.38	25.68	-0.25
201301	14	13.92	9.59	0.01	201301	8	14.56	20.23	-0.32
201302	10	13.47	9.19	-0.38	201302	9	12.24	15.68	-0.21
201303	12	12.81	8.50	-0.09	201303	4	9.94	8.45	-0.70
201304	9	12.50	8.32	-0.42	201304	4	8.71	5.62	-0.84
201305	9	12.25	8.28	-0.39	201305		8.32	5.48	-1.52
201306	2	12.06	8.27	-1.22	201306	4	8.18	5.50	-0.76
201307	9	11.75	8.44	-0.33	201307	4	8.12	5.53	-0.74
201308	19	11.72	8.45	0.86	201308	7	7.97	5.58	-0.17
201309	14	11.75	8.47	0.27	201309	12	8.00	5.57	0.72
201310	20	11.86	8.47	0.96	201310	27	8.00	5.57	3.41
201311	102	11.89	8.50	10.60	201311	22	8.39	6.40	2.13
201312	59	14.36	17.26	2.59	201312	31	8.73	6.82	3.27
201401	26	15.81	18.74	0.54	201401	26	9.33	7.84	2.13
201402	32	16.28	18.78	0.84	201402	22	9.36	7.90	1.60
201403	35	16.86	18.93	0.96	201403	18	9.61	8.17	1.03
201404	19	17.42	19.17	0.08	201404	17	9.79	8.29	0.87
201405	39	17.69	19.12	1.11	201405	13	10.18	8.31	0.34
201406	44	18.67	19.29	1.31	201406	8	10.42	8.27	-0.29
201407	42	19.75	19.59	1.14	201407	8	10.35	8.16	-0.29
201408	35	20.78	19.77	0.72	201408	15	10.50	8.07	0.56
201409	22	21.64	19.69	0.02	201409	6	10.65	8.10	-0.57
201410	29	21.94	19.60	0.36	201410	17	10.65	8.10	0.78
201411	39	22.17	19.64	0.86	201411	20	10.85	8.17	1.12
201412	63	22.83	19.80	2.03	201412	39	11.09	8.32	3.35
201501	84	24.00	20.89	2.87	201501	55	12.03	9.56	4.49
201502	47	25.83	23.13	0.92	201502	21	13.47	12.01	0.63
201503	67	26.83	23.24	1.73	201503	43	13.82	12.05	2.42
201504	27	28.44	23.97	-0.06	201504	9	15.03	12.85	-0.47

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County					Prince George's County				
yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value	yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
201505	12	29.00	23.69	-0.72	201505	4	14.86	12.70	-0.85
201506	10	29.25	23.45	-0.82	201506	14	14.94	12.62	-0.07
201507	10	29.33	23.38	-0.83	201507	14	15.31	12.38	-0.11
201508	18	29.56	23.15	-0.50	201508	7	15.69	12.13	-0.72
201509	12	29.89	22.88	-0.78	201509	6	15.80	12.03	-0.81
201510	20	30.06	22.73	-0.44	201510	15	15.91	11.91	-0.08
201511	21	29.86	22.78	-0.39	201511	12	16.03	11.88	-0.34
201512	32	29.14	22.64	0.13	201512	27	15.77	11.87	0.95
201601	42	29.56	22.54	0.55	201601	60	16.23	11.99	3.65
201602	97	30.33	22.48	2.97	201602	58	17.71	13.99	2.88
201603	47	32.75	24.79	0.57	201603	32	19.11	15.47	0.83
201604	16	33.72	24.63	-0.72	201604	12	19.91	15.39	-0.51
201605	24	33.92	24.46	-0.41	201605	13	20.14	15.20	-0.47
201606	23	34.33	24.15	-0.47	201606	12	19.94	15.03	-0.53
201607	6	34.92	23.59	-1.23	201607	7	20.17	14.85	-0.89
201608	11	34.83	23.69	-1.01	201608	14	20.25	14.76	-0.42
201609	10	34.61	23.88	-1.03	201609	11	20.44	14.63	-0.65
201610	26	34.50	23.99	-0.35	201610	18	20.42	14.65	-0.17
201611	68	34.67	23.91	1.39	201611	32	20.17	14.61	0.81
201612	90	33.72	21.74	2.59	201612	71	20.44	14.74	3.43
201701	118	34.58	23.33	3.58	201701	102	21.56	16.90	4.76
201702	104	37.14	27.10	2.47	201702	61	23.67	21.58	1.73
201703	83	39.14	29.28	1.50	201703	54	24.75	22.45	1.30
201704	55	40.47	30.16	0.48	201704	46	25.75	22.94	0.88
201705	35	41.47	30.03	-0.22	201705	27	26.56	23.13	0.02
201706	42	41.36	30.04	0.02	201706	9	26.94	23.01	-0.78
201707	25	41.31	30.04	-0.54	201707	15	26.97	22.99	-0.52
201708	58	40.83	30.16	0.57	201708	24	27.17	22.85	-0.14
201709	39	41.47	30.28	-0.08	201709	33	27.42	22.77	0.25
201710	54	41.94	30.10	0.40	201710	45	28.17	22.48	0.75
201711	135	42.64	30.08	3.07	201711	87	28.94	22.57	2.57
201712	177	45.31	33.78	3.90	201712	133	30.81	24.49	4.17
201801	218	48.47	40.21	4.22	201801	125	33.42	29.82	3.07
201802	211	52.19	48.87	3.25	201802	100	35.36	33.34	1.94
201803	129	56.75	55.56	1.30	201803	59	37.56	34.93	0.61
201804	99	58.47	56.83	0.71	201804	51	38.00	35.11	0.37
201805	37	60.47	56.96	-0.41	201805	37	39.17	34.81	-0.06
201806	55	61.17	56.50	-0.11	201806	22	40.08	34.29	-0.53
201807	60	62.42	55.83	-0.04	201807	11	40.31	34.14	-0.86
201808	38	63.81	55.10	-0.47	201808	32	40.22	34.21	-0.24
201809	61	64.36	54.73	-0.06	201809	17	40.92	33.77	-0.71
201810	91	65.72	53.99	0.47	201810	42	41.22	33.49	0.02
201811	111	67.69	53.57	0.81	201811	76	41.97	33.19	1.03
201812	261	70.19	53.43	3.57	201812	139	43.75	33.25	2.86
201901	236	76.56	61.74	2.58	201901	183	46.86	36.70	3.71
201902	264	81.94	66.89	2.72	201902	123	50.28	43.12	1.69
201903	185	86.58	73.43	1.34	201903	100	52.08	44.78	1.07

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County					Prince George's County				
yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value	yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
201904	61	90.42	74.89	-0.39	201904	39	53.97	45.34	-0.33
201905	35	91.67	73.99	-0.77	201905	19	54.72	44.85	-0.80
201906	24	91.97	73.72	-0.92	201906	16	54.89	44.70	-0.87
201907	21	92.00	73.70	-0.96	201907	20	55.00	44.60	-0.78
201908	29	92.42	73.24	-0.87	201908	15	55.36	44.25	-0.91
201909	55	92.92	72.72	-0.52	201909	27	55.39	44.22	-0.64
201910	105	94.17	71.64	0.15	201910	41	55.83	43.84	-0.34
201911	122	96.36	70.69	0.36	201911	67	56.47	43.44	0.24
201912	216	97.86	70.65	1.67	201912	115	57.44	43.27	1.33
202001	188	101.36	73.32	1.18	202001	134	58.67	44.27	1.70
202002	172	103.31	74.69	0.92	202002	86	59.56	45.47	0.58
202003	127	105.19	75.56	0.29	202003	66	60.25	45.68	0.13
202004	50	106.42	75.55	-0.75	202004	56	60.58	45.68	-0.10
202005	47	106.28	75.65	-0.78	202005	28	60.86	45.62	-0.72
202006	45	106.61	75.35	-0.82	202006	16	60.89	45.60	-0.98
202007	24	106.69	75.28	-1.10	202007	10	61.08	45.39	-1.13
202008	33	106.67	75.31	-0.98	202008	15	60.94	45.54	-1.01
202009	39	105.97	75.88	-0.88	202009	25	60.69	45.77	-0.78
202010	54	105.97	75.88	-0.68	202010	32	60.47	45.93	-0.62
202011	77	105.97	75.88	-0.38	202011	52	60.11	46.10	-0.18
202012	150	104.36	75.87	0.60	202012	95	59.14	45.89	0.78
202101	130	103.61	75.26	0.35	202101	102	58.08	44.56	0.99
202102	173	101.17	72.83	0.99	202102	119	57.44	43.73	1.41
202103	140	100.11	71.45	0.56	202103	109	57.97	44.37	1.15
202104	43	100.42	71.60	-0.80	202104	38	59.36	45.18	-0.47
202105	25	98.86	72.24	-1.02	202105	16	59.00	45.30	-0.95
202106	18	98.53	72.56	-1.11	202106	11	58.42	45.72	-1.04
202107	21	97.50	73.45	-1.04	202107	5	58.11	46.01	-1.15
202108	14	96.42	74.30	-1.11	202108	6	57.94	46.19	-1.12
202109	28	95.75	74.95	-0.90	202109	14	57.22	46.81	-0.92
202110	47	94.83	75.58	-0.63	202110	17	57.14	46.89	-0.86
202111	81	93.61	76.00	-0.17	202111	41	56.44	47.30	-0.33
202112	142	92.78	75.97	0.65	202112	49	55.47	47.25	-0.14
202201	108	89.47	70.86	0.26	202201	79	52.97	45.03	0.58
202202	150	85.92	66.36	0.97	202202	87	50.08	39.44	0.94
202203	86	82.75	60.04	0.05	202203	53	49.08	37.97	0.10
202204	48	80.00	57.44	-0.56	202204	21	47.78	36.96	-0.72
202205	35	79.64	57.60	-0.77	202205	9	47.28	37.20	-1.03
202206	10	79.64	57.60	-1.21	202206	6	47.00	37.46	-1.09
202207	3	79.25	58.03	-1.31	202207	4	46.72	37.73	-1.13
202208	17	78.75	58.62	-1.05	202208	6	46.28	38.14	-1.06
202209	10	78.42	58.95	-1.16	202209	10	46.03	38.38	-0.94
202210	46	77.17	59.93	-0.52	202210	9	45.56	38.73	-0.94
202211	48	75.53	59.95	-0.46	202211	20	44.67	39.20	-0.63
202212	96	73.47	59.58	0.38	202212	71	43.36	39.22	0.70
202301	92	70.14	54.52	0.40	202301	59	42.14	37.57	0.45
202302	61	67.47	50.81	-0.13	202302	28	40.06	34.27	-0.35

Case No. 9035
69th Quarterly Report
Montgomery and Prince George's County
Z-Value Calculation

Montgomery County

yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
202303	45	64.39	47.55	-0.41
202304	16	62.11	46.41	-0.99
202305	8	61.17	47.01	-1.13
202306	8	60.08	47.79	-1.09
Grand Total	10728			

Prince George's County

yyyymm	Total	Rolling 36 Month Average	Rolling 36 Month Standard Deviation	Z Value
202303	14	38.44	33.40	-0.73
202304	10	37.00	33.30	-0.81
202305	12	35.72	33.43	-0.71
202306	8	35.28	33.64	-0.81
Grand Total	12857			

The Z Value represents the (i) number of mechanical coupling leaks initiated during the current month -
(ii) the average number of monthly leaks over the prior 36 months/the standard deviation of monthly leaks
over the prior 36 months.