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March 4, 2022

**VIA ELECTRONIC FILING**

Public Utility Commission of Oregon  
201 High Street SE, Suite 100  
Post Office Box 1088  
Salem, Oregon 97308-1088

Re: RG 41: Meter Sampling Program Report for 2021

At the request of Commission Staff, Northwest Natural Gas Company, dba NW Natural, submits herewith its 2021 Meter Sampling Program Report.

As required by our Meter Testing Standards and Procedures document, the accuracies of all operating families of diaphragm meters with capacities 1000 ft<sup>3</sup>/hr and below have been statistically analyzed for the year 2021. This analysis utilized all relevant meter tests conducted during the five calendar years between January 1, 2016 and December 31, 2021. The results of this analysis are as follows:

- As of December 31, 2021, 787,474 meters are installed and covered under the Meter Sampling Program. Of these, 735,372 meters, forming 368 distinct meter families, are conforming. The remaining 52,102 are non-conforming and are scheduled for replacement.
- Over the course of 2021, the company tested 5,790 meters. Over the five-year period of 2016 through 2021, the company had a total of 31,609 meter samples from which to base its results.
- 357 meter families either had sufficient meter samples to establish statistical confidence in their accuracy, or are so new that they do not yet require minimum sampling. These meter families amount to 719,174 meters, or 91 percent of the total meter population. The performances of these families are exhibited in Appendix A.
- 12 new meter families were added in 2021. 14 meter families were removed from service due to small family size, during the normal course of business. 4 meter families were removed from service due to the number of supplementary samples required exceeding 50% of the family size, with a family size less than 100 meters.
- 30 meter families, consisting of a total of 35,677 meters, are not conforming. Due to the number of meters requiring change-out (4.5% of the total population), these meters have been put on the list to be removed over the course of the next 4 years, by December 2025, per Meter Sampling Program (MSP) guidelines outlined in NW Natural Engineering Procedure Z-1. The performance of these families is exhibited in Appendix B.
- A further breakdown of the non-conforming meter families and associated meters described above are as follows, the performance of these families is exhibited in Appendix B:
  - 12 meter families, totaling 35,511 meters had sufficient meter tests available to have their accuracy determined statistically and determined non-conforming.

- 14 meter families, totaling 41 meters, will be removed from service due to their small population size and age.
- 4 meter families, totaling 125 meters, will be removed from service due to a family size less than 100 meters, and sampling requirements exceeding 50% of the total family population.
- Compared to the results above, the Year 2020 report resulted in 27,204 meters being put on the list for removal by December 2024.
- Regarding the planned 4-year removal of meters determined non-conforming in 2019 and 2020, the following meters remain:
  - PCC Year 2020 (for removal 2020 to 2023): 5,906 remain out of 42,046 determined
  - PCC Year 2021 (for removal 2021 to 2024): 14,113 remain out of 27,204 determined
  - PCC Year 2022 (for removal 2022 to 2025): 32,083 remain out of 35,677 determined

If you have any questions or comments, please contact me at 503-610-7494.

Sincerely,  
*/s/ Michael J. McKenzie*

Michael J. McKenzie, PE  
Gas Measurement and Station Design Engineering Supervisor

cc:

Andy Fortier  
Jon Huddleston  
Joe Karney

Dave Weber  
Kim Heiting  
Dan Kizer

**Appendix A  
 Meter Families in Conformance**

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
120	0	1968	Rockwell	175	53	55	41	2	0
120	0	1969	Rockwell	175	52	166	66	5	0
120	0	1972	Rockwell	175	49	805	83	10	2
120	0	1973	Rockwell	175	48	595	81	10	1
120	0	1974	Rockwell	175	47	2501	176	15	3
120	0	1975	Rockwell	175	46	1726	113	15	1
120	0	1976	Rockwell	175	45	1049	89	7	3
120	0	1978	Rockwell	175	43	1401	103	6	4
120	0	1979	Rockwell	175	42	1561	115	8	4
120	0	1982	Rockwell	175	39	1140	90	14	1
120	0	1983	Rockwell	175	38	1293	108	14	2
120	0	1984	Rockwell	175	37	1410	91	15	1
120	0	1985	Rockwell	175	36	1882	104	12	2
120	0	1987	Rockwell	175	34	2145	139	10	2
120	0	1988	Rockwell	175	33	2101	117	8	5
120	0	1989	Rockwell	175	32	3385	181	11	6
120	0	1990	Rockwell	175	31	3450	156	15	5
120	0	1991	Rockwell	175	30	3716	208	6	8
120	0	1992	Rockwell	175	29	6535	312	10	9
120	0	1993	Rockwell	175	28	2577	131	7	3
120	0	1994	Rockwell	175	27	1329	69	3	4
120	0	1996	Rockwell	175	25	720	86	3	0
120	0	2012	Rockwell	175	9	1	0	0	0
120	0	2013	Rockwell	175	8	1	0	0	0
120	0	2014	Rockwell	175	7	1	0	0	0
125	0	1978	Rockwell	200	43	1527	112	3	1
125	0	1980	Rockwell	200	41	1778	99	12	0
125	0	1981	Rockwell	200	40	2426	105	13	0
125	0	1982	Rockwell	200	39	3020	137	8	0
125	0	1983	Rockwell	200	38	1713	104	5	1
125	0	1984	Rockwell	200	37	2042	108	11	1
125	0	1986	Rockwell	200	35	333	74	3	0
125	0	1988	Rockwell	200	33	342	88	4	0
125	0	1991	Rockwell	200	30	673	49	0	0
125	0	1992	Rockwell	200	29	594	48	1	0
125	0	1993	Rockwell	200	28	469	74	7	2
125	0	1994	Rockwell	200	27	383	78	6	1

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
125	0	1995	Rockwell	200	26	69	46	5	0
125	0	1996	Rockwell	200	25	227	30	0	0
125	0	1999	Rockwell	200	22	132	23	0	0
125	0	2017	Rockwell	200	4	1	3	0	0
125	0	2019	Rockwell	200	2	1	3	0	0
130	0	1973	American	175	48	710	82	11	1
130	0	1975	American	175	46	23	14	0	0
130	0	1977	American	175	44	3158	141	13	4
130	0	1979	American	175	42	6200	275	13	3
130	0	1980	American	175	41	5995	289	15	3
130	0	1984	American	175	37	4634	224	23	6
130	0	1985	American	175	36	2002	103	10	2
130	0	1986	American	175	35	3875	166	17	2
130	0	1987	American	175	34	5766	208	28	2
130	0	1988	American	175	33	3033	152	18	2
130	0	1989	American	175	32	3162	124	18	4
130	0	1991	American	175	30	4758	166	24	5
130	0	1994	American	175	27	2569	96	13	0
130	0	1996	American	175	25	1031	41	1	1
130	0	1997	American	175	24	197	53	1	1
130	0	2013	American	175	8	1	0	0	0
130	0	2014	American	175	7	3	0	0	0
130	0	2016	American	175	5	2	7	0	0
130	0	2020	American	175	1	1	13	1	0
140	0	1968	Sprague	175	53	957	78	0	14
140	0	1970	Sprague	175	51	329	38	0	3
140	0	1971	Sprague	175	50	935	71	0	7
140	0	1972	Sprague	175	49	145	26	0	2
140	0	1973	Sprague	175	48	2780	172	3	7
140	0	1974	Sprague	175	47	605	34	0	2
140	0	1975	Sprague	175	46	697	44	0	0
140	0	1976	Sprague	175	45	1057	55	2	4
140	0	1977	Sprague	175	44	289	36	0	4
140	0	1978	Sprague	175	43	240	30	0	2
140	0	1979	Sprague	175	42	126	37	1	1
140	0	1980	Sprague	175	41	270	61	4	7
140	0	1981	Sprague	175	40	610	42	0	1
140	0	1982	Sprague	175	39	549	58	2	3
140	0	1983	Sprague	175	38	786	56	0	3
140	0	1985	Sprague	175	36	1102	76	1	5

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
140	0	1986	Sprague	175	35	929	54	1	3
140	0	1987	Sprague	175	34	2870	153	0	13
140	0	1988	Sprague	175	33	718	73	2	3
140	0	1989	Sprague	175	32	743	37	0	4
140	0	1990	Sprague	175	31	995	56	0	1
140	0	1991	Sprague	175	30	431	36	0	3
140	0	1992	Sprague	175	29	549	33	0	1
140	0	1993	Sprague	175	28	624	40	0	4
140	0	1994	Sprague	175	27	554	52	1	2
140	0	1997	Sprague	175	24	454	28	0	0
140	0	1998	Sprague	175	23	8	9	0	0
140	0	2016	Sprague	175	5	1	3	0	0
270	0	2000	Schlumberger	1000	21	17	13	0	0
270	0	2001	Schlumberger	1000	20	25	34	2	0
272	0	2004	Actaris	1000	17	7	9	1	0
450	0	1993	Schlumberger	400	28	180	29	0	0
450	0	1996	Schlumberger	400	25	254	32	0	0
450	0	1998	Schlumberger	400	23	426	45	0	1
450	0	2003	Schlumberger	400	18	16	13	0	0
450	0	2013	Schlumberger	400	8	1	0	0	0
452	0	2003	Actaris	400	18	77	39	1	0
470	472	1982	American	425	39	16	12	0	0
470	472	1984	American	425	37	102	20	0	0
470	472	1985	American	425	36	22	23	2	0
470	472	1986	American	425	35	51	18	0	0
470	472	1987	American	425	34	107	59	2	0
470	472	1989	American	425	32	18	20	2	0
470	472	1992	American	425	29	138	21	0	0
470	472	1995	American	425	26	75	21	0	0
470	472	1996	American	425	25	9	12	1	1
470	472	1997	American	425	24	275	73	5	0
470	472	1998	American	425	23	135	55	6	0
470	472	1999	American	425	22	243	28	0	0
470	472	2000	American	425	21	380	47	1	0
470	472	2004	American	425	17	46	38	4	1
470	472	2006	American	425	15	34	35	0	0
470	472	2008	American	425	13	11	12	0	0
470	472	2012	American	425	9	1	0	0	0
470	472	2017	American	425	4	1	0	0	0
471	0	2007	American	425	14	464	79	8	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
471	0	2008	American	425	13	37	37	3	0
471	0	2012	American	425	9	10	0	0	0
475	0	2011	American	630	10	1029	61	1	0
475	0	2012	American	630	9	1419	80	1	0
475	0	2013	American	630	8	1472	90	2	0
475	0	2014	American	630	7	1531	67	0	1
475	0	2015	American	630	6	1244	62	2	0
475	0	2016	American	630	5	1617	51	1	0
475	0	2017	American	630	4	1678	47	2	0
475	0	2018	American	630	3	4664	86	2	1
475	0	2019	American	630	2	2980	59	0	0
475	0	2020	American	630	1	899	9	0	0
480	486	1989	American	800	32	22	13	0	0
480	486	2002	American	800	19	20	12	0	0
485	0	1981	American	800	40	19	17	0	3
485	0	1984	American	800	37	50	30	1	1
485	0	2016	American	800	5	1	0	0	0
487	0	2017	American	800	4	58	2	0	0
487	0	2018	American	800	3	193	9	0	0
487	0	2019	American	800	2	318	8	0	0
487	0	2020	American	800	1	237	5	0	0
487	0	2021	American	800	0	1	0	0	0
505	507	1981	American	1000	40	7	9	0	2
505	507	2008	American	1000	13	286	70	11	0
505	507	2012	American	1000	9	379	43	2	0
505	507	2013	American	1000	8	372	34	0	0
505	507	2014	American	1000	7	428	34	0	0
505	507	2015	American	1000	6	354	26	0	0
505	507	2016	American	1000	5	516	38	1	0
505	507	2017	American	1000	4	199	11	0	0
505	507	2018	American	1000	3	345	19	2	0
505	507	2019	American	1000	2	300	19	1	0
505	507	2020	American	1000	1	15	2	1	0
510	515	1973	Rockwell	310	48	62	30	1	3
510	515	1974	Rockwell	310	47	22	22	0	4
510	515	1976	Rockwell	310	45	241	50	2	4
510	515	1978	Rockwell	310	43	93	46	1	3
510	515	1979	Rockwell	310	42	116	48	5	7
510	515	1982	Rockwell	310	39	37	40	1	3
510	515	1983	Rockwell	310	38	103	36	1	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
510	515	1984	Rockwell	310	37	15	15	1	1
510	515	1986	Rockwell	310	35	15	11	0	0
510	515	1987	Rockwell	310	34	198	54	2	3
510	515	1991	Rockwell	310	30	202	22	0	1
510	515	1992	Rockwell	310	29	114	39	1	4
510	515	1994	Rockwell	310	27	29	14	0	0
510	515	1996	Rockwell	310	25	18	20	0	1
510	515	2013	Rockwell	310	8	1	0	0	0
520	0	1978	Rockwell	415	43	30	15	0	0
520	0	1980	Rockwell	415	41	54	32	1	0
520	0	1982	Rockwell	415	39	32	16	0	0
520	0	1987	Rockwell	415	34	37	20	0	2
520	0	1988	Rockwell	415	33	42	15	0	1
520	0	1994	Rockwell	415	27	82	19	0	1
520	0	1996	Rockwell	415	25	93	48	2	1
520	0	1997	Rockwell	415	24	43	18	0	0
520	0	2000	Rockwell	415	21	82	43	7	0
520	0	2004	Rockwell	415	17	59	40	4	0
520	0	2017	Rockwell	415	4	1	0	0	0
520	0	2018	Rockwell	415	3	1	0	0	0
520	0	2019	Rockwell	415	2	1	0	0	0
555	0	1980	American	310	41	56	38	4	0
555	0	1981	American	310	40	27	19	1	1
555	0	1984	American	310	37	159	59	2	2
555	0	1987	American	310	34	30	33	2	1
555	0	2012	American	310	9	1	0	0	0
560	0	1985	American	250	36	1390	73	2	1
560	0	1986	American	250	35	6030	251	6	3
560	0	1988	American	250	33	3078	105	2	0
560	0	1989	American	250	32	6813	279	5	5
560	0	1990	American	250	31	6126	236	6	6
560	0	1991	American	250	30	5412	231	4	4
560	0	1992	American	250	29	4722	118	2	3
560	0	1993	American	250	28	3984	124	0	2
560	0	1994	American	250	27	6021	157	8	1
560	0	1995	American	250	26	8019	217	13	4
560	0	1996	American	250	25	10895	297	13	4
560	0	1998	American	250	23	14194	292	38	3
560	0	1999	American	250	22	11081	195	14	1
560	0	2000	American	250	21	11087	247	6	1



Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
560	0	2001	American	250	20	9293	198	3	2
560	0	2002	American	250	19	8388	147	6	0
560	0	2003	American	250	18	422	61	1	1
560	0	2006	American	250	15	602	56	1	0
560	0	2007	American	250	14	183	26	0	0
560	0	2012	American	250	9	6	0	0	0
560	0	2013	American	250	8	3	0	0	0
560	0	2014	American	250	7	5	0	0	0
560	0	2015	American	250	6	1	1	0	0
560	0	2018	American	250	3	3	14	1	0
561	0	2006	American	250	15	21165	454	59	1
561	0	2007	American	250	14	21587	536	70	2
561	0	2010	American	250	11	9912	310	7	1
561	0	2011	American	250	10	10450	317	4	0
561	0	2012	American	250	9	11754	295	2	2
561	0	2013	American	250	8	15144	335	2	5
561	0	2014	American	250	7	14508	295	3	1
561	0	2015	American	250	6	17781	295	0	0
561	0	2016	American	250	5	12582	186	0	0
561	0	2017	American	250	4	11750	174	2	1
561	0	2018	American	250	3	9707	114	2	1
561	0	2019	American	250	2	14566	104	2	0
561	0	2020	American	250	1	10701	46	9	0
561	0	2021	American	250	0	5	0	0	0
562	0	2017	American	250	4	22	0	0	0
562	0	2018	American	250	3	695	0	0	0
562	0	2020	American	250	1	996	0	0	0
570	0	1990	Rockwell	275	31	5274	174	8	3
570	0	1991	Rockwell	275	30	2825	108	9	0
570	0	1992	Rockwell	275	29	127	56	5	0
570	0	1993	Rockwell	275	28	61	30	1	0
570	0	1994	Rockwell	275	27	4953	137	9	0
570	0	1995	Rockwell	275	26	6370	167	10	4
570	0	1996	Rockwell	275	25	7563	173	3	1
570	0	1997	Rockwell	275	24	2330	51	1	0
570	0	1998	Rockwell	275	23	5327	136	13	1
570	0	1999	Rockwell	275	22	10380	196	26	1
570	0	2000	Rockwell	275	21	8363	161	18	1
570	0	2001	Rockwell	275	20	8593	161	6	0
570	0	2002	Rockwell	275	19	10704	194	3	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
570	0	2003	Rockwell	275	18	19571	408	5	2
570	0	2004	Rockwell	275	17	3551	71	0	0
570	0	2012	Rockwell	275	9	4	1	0	0
570	0	2013	Rockwell	275	8	1	0	0	0
570	0	2014	Rockwell	275	7	2	0	0	0
570	0	2016	Rockwell	275	5	2	2	0	0
570	0	2017	Rockwell	275	4	3	3	0	0
570	0	2018	Rockwell	275	3	2	2	0	0
572	0	2004	Sensus	275	17	13742	258	25	2
572	0	2008	Sensus	275	13	37	38	1	0
572	0	2009	Sensus	275	12	735	50	1	0
572	0	2012	Sensus	275	9	3	1	0	0
572	0	2013	Sensus	275	8	1	0	0	0
572	0	2014	Sensus	275	7	1	0	0	0
572	0	2015	Sensus	275	6	2	0	0	0
572	0	2016	Sensus	275	5	3	0	0	0
572	0	2020	Sensus	275	1	9458	24	2	0
572	0	2021	Sensus	275	0	15	0	0	0
585	0	1992	Sprague	250	29	2049	91	0	1
585	0	1993	Sprague	250	28	3762	135	1	0
585	0	1994	Sprague	250	27	1625	56	0	1
585	0	1996	Sprague	250	25	4358	133	1	0
585	0	1997	Sprague	250	24	5821	163	2	2
585	0	1998	Sprague	250	23	5309	173	0	1
585	0	2001	Sprague	250	20	49	17	0	0
585	0	2002	Sprague	250	19	43	16	0	0
585	0	2004	Sprague	250	17	47	17	0	0
585	0	2014	Sprague	250	7	2	0	0	0
590	0	1989	Lancaster	250	32	1278	78	0	0
590	0	1990	Lancaster	250	31	1290	66	0	1
590	0	1991	Lancaster	250	30	1679	82	1	0
590	0	1992	Lancaster	250	29	2603	114	1	1
590	0	1993	Lancaster	250	28	2788	82	1	0
590	0	1994	Lancaster	250	27	4273	203	11	5
590	0	1995	Lancaster	250	26	4723	168	11	14
590	0	1996	Lancaster	250	25	26	21	0	0
590	0	1997	Lancaster	250	24	2085	60	1	3
590	0	1999	Lancaster	250	22	140	24	0	0
590	0	2016	Lancaster	250	5	1	2	0	0
590	0	2019	Lancaster	250	2	1	1	0	0

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
595	600	2000	Schlumberger	250	21	3078	341	16	12
595	600	2001	Schlumberger	250	20	3711	190	4	1
595	600	2002	Schlumberger	250	19	3200	166	0	5
595	600	2003	Schlumberger	250	18	47	20	0	0
595	600	2004	Schlumberger	250	17	21	13	0	0
595	600	2012	Schlumberger	250	9	1	0	0	0
595	600	2016	Schlumberger	250	5	1	1	0	0
595	600	2019	Schlumberger	250	2	1	3	0	0
602	0	2016	Itron	250	5	4339	55	0	0
602	0	2017	Itron	250	4	4561	66	0	1
602	0	2018	Itron	250	3	8145	76	2	0
602	0	2019	Itron	250	2	11507	76	0	0
602	0	2020	Itron	250	1	21437	51	0	0
602	0	2020	Itron	250	1	21437	51	0	0
602	0	2021	Itron	250	0	2	0	0	0
603	0	2020	Itron	400	1	438	2	0	0
555	0	1983	American	310	38	78	40	2	0
120	0	1980	Rockwell	175	41	983	81	8	1
140	0	1984	Sprague	175	37	673	42	0	5
560	0	1987	American	250	34	419	24	0	0
120	0	1986	Rockwell	175	35	1238	97	6	3
125	0	1979	Rockwell	200	42	147	37	1	0
452	0	2004	Actaris	400	17	395	73	4	3
570	0	2005	Rockwell	275	16	7	6	0	0
585	0	1991	Sprague	250	30	701	43	1	0
585	0	2000	Sprague	250	21	32	28	2	0
585	0	1988	Sprague	250	33	174	22	0	0
585	0	1995	Sprague	250	26	1474	54	2	1
120	0	1977	Rockwell	175	44	1295	92	5	3
130	0	1992	American	175	29	1353	92	10	0
450	0	1997	Schlumberger	400	24	53	18	0	0
480	486	1990	American	800	31	20	12	0	0
480	486	2001	American	800	20	11	10	1	0
510	515	1981	Rockwell	310	40	182	21	0	1
570	0	1989	Rockwell	275	32	701	71	3	0
125	0	1989	Rockwell	200	32	503	27	0	2
450	0	1999	Schlumberger	400	22	87	20	0	0
470	472	2001	American	425	20	55	36	2	0
470	472	2002	American	425	19	378	76	4	0
500	502	2002	American	1000	19	33	23	1	1

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
510	515	1977	Rockwell	310	44	129	36	1	0
520	0	1981	Rockwell	415	40	213	24	0	2
520	0	2003	Rockwell	415	18	139	21	0	0
585	0	1999	Sprague	250	22	240	23	0	0
120	0	1970	Rockwell	175	51	559	79	10	1
120	0	1997	Rockwell	175	24	133	54	5	1
480	486	1995	American	800	26	15	12	0	2
510	515	1993	Rockwell	310	28	88	22	0	2
120	0	1995	Rockwell	175	26	277	70	8	0
270	0	1998	Schlumberger	1000	23	20	12	0	0
520	0	1979	Rockwell	415	42	66	28	1	2
590	0	1988	Lancaster	250	33	70	20	0	0
520	0	1977	Rockwell	415	44	36	15	0	0
130	0	1971	American	175	50	1001	81	9	0
130	0	1995	American	175	26	470	72	8	0
475	0	2010	American	630	11	584	82	8	0
480	486	1992	American	800	29	21	12	0	0
560	0	2005	American	250	16	57	18	0	0
120	0	1981	Rockwell	175	40	640	80	9	1
470	472	1994	American	425	27	182	59	3	1
471	0	2010	American	425	11	74	31	1	0
505	507	2011	American	1000	10	312	75	6	0
510	515	1989	Rockwell	310	32	75	31	1	0
562	0	2019	American	250	2	1371	5	1	0
470	472	1983	American	425	38	21	12	0	0
510	515	1990	Rockwell	310	31	189	63	5	2
120	0	1998	Rockwell	175	23	45	28	1	1
125	0	1987	Rockwell	200	34	496	68	3	0
520	0	1992	Rockwell	415	29	47	27	1	3
470	472	2007	American	425	14	190	50	2	0
471	0	2011	American	425	10	79	33	1	0
590	0	1998	Lancaster	250	23	16	10	0	0
125	0	1998	Rockwell	200	23	39	35	3	0
520	0	1991	Rockwell	415	30	62	17	0	1
125	0	1990	Rockwell	200	31	282	70	10	0
470	472	2003	American	425	18	139	59	3	0
555	0	1985	American	310	36	74	40	2	0
555	0	1989	American	310	32	8	7	0	0
572	0	2011	Sensus	275	10	65	19	0	0
520	0	2005	Rockwell	415	16	19	26	1	0

**Appendix B  
 Meter Families Not Conforming (To Be Removed Over 4 Years)**

<b>Perf</b>	<b>Alt. Perf</b>	<b>Year Set</b>	<b>Manufacturer</b>	<b>Size</b>	<b>Age</b>	<b># Meters in Family</b>	<b>Determination</b>
130	0	1983	American	175	38	2890	Determined
130	0	1990	American	175	31	3041	Determined
130	0	1993	American	175	28	3073	Determined
140	0	2011	Sprague	175	10	2	Small Family
300	540	1996	Rockwell	800	25	18	Determined
470	472	1993	American	425	28	59	Determined
480	486	1993	American	800	28	24	Determined
485	0	2011	American	800	10	1	Small Family
500	502	2001	American	1000	20	10	Determined
505	507	2007	American	1000	14	330	Determined
510	515	2011	Rockwell	310	10	1	Small Family
520	0	2011	Rockwell	415	10	1	Small Family
560	0	2011	American	250	10	3	Small Family
560	0	2020	American	250	1	7	Small Family
561	0	2005	American	250	16	1621	Determined
570	0	2011	Rockwell	275	10	1	Small Family
570	0	2020	Rockwell	275	1	2	Small Family
572	0	2003	Sensus	275	18	1	Small Family
572	0	2005	Sensus	275	16	24364	Determined
590	0	2011	Lancaster	250	10	1	Small Family
480	486	1996	American	800	25	6	Small Family
300	540	2005	Rockwell	800	16	5	Small Family
450	0	2005	Schlumberger	400	16	5	Small Family
485	0	1997	American	800	24	5	Small Family
500	502	1998	American	1000	23	62	Determined
555	0	1986	American	310	35	75	Small Family - Samples > 50%
555	0	1997	American	310	24	19	Determined
470	472	2005	American	425	16	17	Small Family - Samples > 50%
470	472	1990	American	425	31	17	Small Family - Samples > 50%
452	0	2005	Actaris	400	16	16	Small Family - Samples > 50%
<b>Total</b>						<b>35677</b>	