

SDG&E, June 15th, 2023

Rulmaking (R) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.
In Response to Data Request, R15-01-008, 2023 June Report
Appendix 4: Rev. 05/30/2023

Notes:

Use a formula-derived value with the formula used in the Annual Emissions columns. Do not use a copy and paste-a-value.
All of the Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

If all the main and services are not surveyed annually, use the "Unsurveyed Pipeline Leaks" to represent unsurveyed emissions.

Do not record above ground MGA leaks on this table. Use Appendix 1 instead. Do not include to list above ground leaks associated with the Distribution Main & Services pipeline system.
After completing the table on "Pipeline Leaks" and "Unsurveyed Pipeline Leaks," fill in the table for "Pipeline Leak Summary."

Sum Total Emissions from leaks carried over from before 2022

7,309

Sum Total Emissions from Survey leaks discovered in 2022

196

Sum Total Emissions from O&M leaks discovered in 2022

7,239

Grand Total of all 2022 emissions from leaks

Note: No change to O&M last duration for this reporting year

Distribution Main & Service Pipeline Leaks:

ID	Geographic Location	Pipe Classification	Pipe Material	Pipe Size (nominal)	Pipe Age (years)	Pressure (psi)	Leak Grade	Upgraded Leak Grade or Downgraded Leak Grade	Below Ground or Above Ground	Leak Discovery Method	Discovery Date (MM/DD/YYYY)	No-Grade Date (MM/DD/YYYY)	Report Date (MM/DD/YYYY)	Scheduled Repair Date (MM/DD/YYYY)	Reason for Not Scheduling a Repair	Number of Days Leaking	Number of Days to Repair	Emission Factor (Mtu/Dur)	Annual Emissions (Mtu)	Explanatory Notes / Comments
220378	92105	MB	PC	1 1/2"	995	Less than or equal to 60	2	B	S	5/26/2022	7/7/2022					182	37	0.11537432	20.99820322	
2206194	92113	MB	P	3"	121	Less than or equal to 60	1	B	S	4/8/2022	4/8/2022					98		0.11537432	11.30672374	
221966	92056	DB	P	3"	539	Less than or equal to 60	1	B	S	10/24/2022	10/24/2022					297		0.11537432	34.26629064	
2207884	91945	DB	P	3/4"	767	Less than or equal to 60	2	B	S	5/6/2022	5/6/2022					139	14	0.11537432	16.03708775	
2212366	92113	DB	P	3/4"	779	Less than or equal to 60	1	B	M	12/70/2022	12/70/2022					1		0.11537432	0.11537432	
220920	92116	DB	PC	3/4"	1141	Less than or equal to 60	2	B	S	5/25/2022	6/23/2022					174	30	0.000519372	0.09037012	
2202176	91910	DB	PC	1"	875	Less than or equal to 60	2	B	S	2/5/2022	2/17/2022					48	17	0.11537432	5.53798736	
2202752	92007	DB	PC	3/4"	751	Less than or equal to 60	2	B	M	2/9/2022	2/17/2022					9	9	0.11537432	1.03877288	
2209528	92103	DB	P	Unknown	507	Less than or equal to 60	1	B	S	3/31/2022	3/31/2022					151	1	0.11537432	17.42158453	
2201765	92139	MB	P	3"	611	Less than or equal to 60	2	B	S	2/26/2022	3/7/2022					56	41	0.11537432	7.64473313	
2201229	92114	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	1/19/2022	3/24/2022					83	65	0.11537432	9.576102756	
2200775	92021	DB	PC	1/8"	695	Less than or equal to 60	1	B	M	1/12/2022	1/12/2022					1	1	0.11537432	0.11537432	
2209902	92105	MB	P	6 1/2"	64	Less than or equal to 60	1	B	S	6/6/2022	7/7/2022					182	32	0.002813675	0.13273099	
2202299	91911	DB	PC	3/4"	815	Less than or equal to 60	2	B	S	2/20/2022	2/17/2022					48	16	0.11537432	5.53798736	
2208866	92105	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	6/20/2022	6/20/2022					181	41	0.004190775	0.26060461	
2213375	92124	DB	PC	1 1/2" CTS	587	Less than or equal to 60	1	B	S	7/14/2022	7/14/2022					195	1	0.11537432	22.48802774	
2221925	92056	DB	PC	3/4"	719	Less than or equal to 60	1	B	M	11/16/2022	11/16/2022					1	1	0.11537432	0.11537432	
2209004	92116	MB	PC	1 1/2"	623	Less than or equal to 60	1	B	S	5/23/2022	6/8/2022					159	17	0.11537432	18.3463239	
2210072	92115	DB	PC	1 1/2"	850	Less than or equal to 60	2	B	S	6/8/2022	7/8/2022					200	42	0.001004063	0.20680559	
2209998	92115	DB	PC	3/4"	971	Less than or equal to 60	2	B	S	6/7/2022	6/20/2022					181	24	0.001201202	0.175490603	
2202829	91902	DB	PC	3/4"	803	Less than or equal to 60	1	B	S	2/10/2022	2/10/2022					41	1	0.11537432	4.79364012	
2212640	92123	DB	PC	1 1/4"	935	Less than or equal to 60	2	B	M	7/19/2022	8/5/2022					16	16	0.11537432	1.84895712	
2212229	92115	DB	PC	3/4"	875	Less than or equal to 60	1	B	S	11/22/2022	11/22/2022					2	2	0.11537432	0.11537432	
2207751	92114	DB	PC	1 1/2"	839	Less than or equal to 60	2	B	S	5/3/2022	5/30/2022					152	18	0.11537432	16.15264248	
2209162	92105	DB	PC	3/4"	827	Less than or equal to 60	2	B	S	6/26/2022	7/6/2022					187	3	0.000904660	0.20773959	
2207924	92114	DB	PC	3/4"	911	Less than or equal to 60	2	B	S	5/6/2022	6/4/2022					140	28	0.007202886	1.97963875	
2212384	92109	DB	PC	3/4"	491	Less than or equal to 60	1	B	M	11/21/2022	11/22/2022					2	2	0.11537432	0.20794964	
2210583	91941	DB	P	1 1/4"	575	1.54"	1	B	M	7/16/2022	7/16/2022					31	1	0.036658427	2.105108	
2212653	92026	MB	P	3"	127	Less than or equal to 60	1	B	M	11/15/2022	11/15/2022					2	2	0.11537432	0.20794964	
2210333	92107	DB	PC	3/4"	779	Less than or equal to 60	2	B	S	6/10/2022	6/10/2022					193	2	0.11537432	22.15348464	
2210309	92114	MB	PC	2"	767	Less than or equal to 60	2	B	S	6/11/2022	7/7/2022					188	27	0.001867666	0.354861266	
2206807	92115	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	4/19/2022	5/25/2022					37	37	0.000484031	0.84894769	
2208517	91977	MB	PC	1 1/2"	755	Less than or equal to 60	1	B	S	5/16/2022	6/27/2022					43	1	0.01518272	1.83446794	
2212929	91941	DB	PC	3/4"	875	Less than or equal to 60	1	B	M	12/29/2022	12/29/2022					1	1	0.11537432	0.20794964	
2211778	92154	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	9/27/2022	9/27/2022					1	1	0.11537432	0.11537432	
2201764	91950	DB	P	1 1/2" CTS	515	Less than or equal to 60	2	B	S	1/26/2022	4/21/2022					111	86	0.070028485	7.72797801	
2217889	92105	MB	PC	1 1/2"	827	Less than or equal to 60	1	B	M	9/29/2022	9/29/2022					1	1	0.11537432	0.11537432	
2215152	92007	DB	PC	3/4"	755	Less than or equal to 60	1	B	S	11/14/2022	11/14/2022					5	1	0.11537432	0.20794964	
2200232	92067	DB	P	1"	850	Less than or equal to 60	1	B	S	1/5/2022	1/5/2022					5	1	0.11537432	0.20797866	
2200140	92139	MB	PC	3/4"	911	Less than or equal to 60	2	B	S	1/4/2022	2/16/2022					47	1	0.11537432	5.42362404	
2210245	92103	DB	PC	3/4"	1126	Less than or equal to 60	2	B	S	6/10/2022	7/12/2022					193	33	0.007265011	1.40247076	
2206099	92114	MB	PC	1"	839	Less than or equal to 60	2	B	S	4/15/2022	5/10/2022					26	1	0.11537432	1.84895712	
2202098	91950	DB	PC	3/4"	743	Less than or equal to 60	1	B	S	1/31/2022	1/31/2022					31	1	0.11537432	1.57645661	
2202503	91910	DB	PC	3/4"	791	Less than or equal to 60	2	B	S	2/5/2022	2/6/2022					2	2	0.11537432	0.20880584	
2201016	92113	DB	PC	3/4"	611	Less than or equal to 60	2	B	S	2/14/2022	2/14/2022					47	1	0.11537432	5.42362404	
2201484	91950	DB	PC	3/4"	683	Less than or equal to 60	2	B	S	1/22/2022	6/4/2022					372	131	0.11537432	17.53895926	
2208047	92116	MB	PC	2"	1157	Less than or equal to 60	2	B	S	5/16/2022	6/21/2022					172	37	0.004064683	4.51577503	
2207144	92115	DB	PC	1 1/4"	863	Less than or equal to 60	1	B	M	4/27/2022	4/28/2022					1	1	0.17860881	1.4831734	
2212034	92111	DB	PC	3/4"	647	Less than or equal to 60	1	B	M	11/4/2022	11/4/2022					2	2	0.11537432	0.20794964	
2212128	92037	DB	PC	3/4"	611	Less than or equal to 60	2	B	S	11/18/2022	12/1/2022					319	1	0.11537432	38.6035322	
2210580	92110	MB	PC	1 1/2"	755	Less than or equal to 60	2	B	M	10/31/2022	11/15/2022					2	2	0.11537432	0.20794964	
2211447	92028	DB	P	2"	755	Less than or equal to 60	2	B	S	11/17/2022	11/14/2022					318	4	0.11537432	36.4805478	
2213170	92037	DB	PC	3/4"	359	Less than or equal to 60	2	B	S	12/30/2022	12/7/2022					341	4	0.11537432	39.14273861	
2203343	91910	DB	PC	3/4"	586	Less than or equal to 60	2	B	S	2/18/2022	3/21/2022					80	32	0.11537432	9.22997856	
2208004	92114	DB	PC	3/4"	515	Less than or equal to 60	2	B	S	5/7/2022	6/20/2022					153	1	0.000716233	0.26203053	
2211930	91950	DB	PC	3/4"	719	Less than or equal to 60	2	B	M	11/16/2022	11/18/2022					3	3	0.11537432	0.346524196	
2205096	92116	MB	P	1 1/4"	574	Less than or equal to 60	1	B	M	3/30/2022	3/30/2022					1	1	0.11537432	0.11537432	
2211809	92056	DB	P	1"	839	Less than or equal to 60	2	B	S	7/6/2022	7/21/2022					202	1	0.11537432	2.36058966	
2208052	92114	DB	PC	3/4"	850	Less than or equal to 60	2	B	S	5/9/2022	5/17/2022					137	9	0.11537432	15.8053828	
2210127	92104	DB	PC	3/4"	1156	Less than or equal to 60	2	B	S	10/14/2022	10/14/2022					1	1	0.11537432	0.11537432	
2206319	92150	DB	PC	3/4"	1031	Less than or equal to 60	1	B	M	2/24/2022	2/24/2022					1	1	0.11537432	0.11537432	
2209802	92115	DB	PC	3/4"	995	Less than or equal to 60	2	B	S	4/4/2022	7/7/2022					188	34	0.11537432	21.4904862	
2212114	92037	DB	PC	3/4"	587	Less than or equal to 60	1	B	S	11/18/2022	11/20/2022					12	1	0.11537432	1.38446794	
2204742	91902	DB	PC	3/4"	827	Less than or equal to 60	1	B	S	3/15/2022	3/15/2022					74	1	0.11537432	8.537730168	</

2210822	92103	DB	PC	3/4"	707	Less than or equal to 60	2	B	S	6/21/2022	7/16/2022	197	26	0.11537432	12.7288222
2208640	92011	MB	MB	3/4"	407	Less than or equal to 60	1	S	S	5/17/2022	5/18/2022	138	2	0.11537432	20.9171302
2208420	92114	MB	PC	2"	755	Less than or equal to 60	2	B	S	5/13/2022	7/12/2022	193	61	0.01876008	3.2606882
2221410	92037	DB	PC	3/4"	935	Less than or equal to 60	2	B	M	11/10/2022	11/11/2022	2	2	0.11537432	0.23074964
2210227	92114	DB	3/4"	707	Less than or equal to 60	2	B	S	M	6/11/2022	7/11/2022	14	31	0.01888095	2.65554905
2207891	92114	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	5/5/2022	5/24/2022	144	20	0.11537432	16.6139641
2201037	92114	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	4/18/2022	4/18/2022	95	7	0.11537432	10.9659594
2202214	91911	MB	PC	1 1/2"	695	Less than or equal to 60	1	B	S	2/1/2022	2/1/2022	333	2	0.11537432	3.80736156
2210423	92108	DB	PC	3/4"	635	Less than or equal to 60	1	B	M	6/14/2022	6/14/2022	1	1	0.11537432	0.11537432
2207672	92056	MB	2"	539	Less than or equal to 60	1	B	M	S	5/1/2022	5/1/2022	1	1	0.11537432	0.11537432
2223332	92037	DB	P	1/2" CTS	135	Less than or equal to 60	1	B	M	12/1/2022	12/1/2022	1	1	0.11537432	0.11537432
2205060	92119	MB	PC	3/4"	639	Less than or equal to 60	2	B	S	5/10/2022	2/10/2022	41	32	0.11537432	11.6421838
2221537	92037	MB	PC	2"	767	Less than or equal to 60	1	B	M	11/18/2022	11/18/2022	1	1	0.11537432	0.11537432
2214396	92114	DB	PC	3/4"	935	Less than or equal to 60	1	B	M	9/8/2022	9/8/2022	1	1	0.11537432	0.11537432
2208213	92010	MB	3/4"	539	Less than or equal to 60	2	B	S	M	5/11/2022	5/24/2022	14	14	0.11537432	0.11537432
2202599	91911	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	2/7/2022	4/7/2022	97	36	0.11537432	11.913149
2207446	92115	DB	PC	3/4"	795	Less than or equal to 60	2	B	S	4/28/2022	4/28/2022	118	1	0.11537432	15.6421838
2206105	92124	MB	PC	2"	515	Less than or equal to 60	2	B	M	5/12/2022	5/12/2022	37	60	0.11537432	4.15349053
2201441	92109	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	1/21/2022	4/13/2022	103	83	0.11537432	11.885974
2210902	92102	DB	P	2"	575	Less than or equal to 60	2	B	S	6/22/2022	7/25/2022	206	34	0.11537432	30.79139479
2206544	91937	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	4/7/2022	4/28/2022	116	20	0.11537432	13.38348891
2212909	92084	DB	PC	3/4"	623	Less than or equal to 60	2	B	S	11/16/2022	11/17/2022	211	2	0.11537432	21.45370157
2211785	92115	DB	PC	3/4"	827	Less than or equal to 60	2	B	M	7/16/2022	7/16/2022	209	23	0.11537432	24.113189
2202094	91941	MB	PC	1 1/2"	899	Less than or equal to 60	1	B	M	1/13/2022	1/14/2022	2	2	0.11537432	0.23074964
2210849	91977	MB	2"	755	Less than or equal to 60	2	B	S	6/21/2022	6/21/2022	235	1	0.11537432	11.6421838	
2203041	92102	DB	P	1/2" IPS	587	Less than or equal to 60	2	B	M	2/14/2022	3/23/2022	38	38	0.11537432	4.184239816
2223026	92071	MB	P	2"	707	Less than or equal to 60	1	B	M	11/29/2022	11/29/2022	334	2	0.11537432	35.5161499
2202422	91911	DB	P	1"	131	Less than or equal to 60	1	B	S	2/4/2022	2/4/2022	35	1	0.11537432	4.03811562
2210068	92115	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	6/8/2022	7/14/2022	107	87	0.010081795	1.96508071
2212604	92119	MB	PC	3/4"	695	Less than or equal to 60	2	B	S	7/16/2022	8/4/2022	216	17	0.11537432	26.52009411
2206191	91942	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	4/9/2022	5/21/2022	191	44	0.11537432	16.26781721
2211007	92008	DB	PC	3/4"	695	Less than or equal to 60	2	B	S	9/2/2022	9/2/2022	262	1	0.11537432	30.22617978
2206198	92117	DB	PC	3/4"	731	Less than or equal to 60	1	B	M	1/24/2022	1/25/2022	192	2	0.11537432	0.23074964
2209779	91933	DB	PC	3/4"	767	Less than or equal to 60	2	B	M	4/5/2022	7/8/2022	190	96	0.11537432	21.92119908
2200740	92129	MB	3"	431	Less than or equal to 60	2	B	S	1/18/2022	1/18/2022	14	98	0.11537432	1.57645661	
2203792	92064	MB	P	2"	563	Less than or equal to 60	2	B	S	2/28/2022	2/28/2022	59	1	0.11537432	6.80710918
2200512	92114	DB	PC	3/4"	875	Less than or equal to 60	2	B	S	2/17/2022	2/17/2022	40	7	0.11537432	5.15787136
22125943	92100	MB	PC	1 1/2"	754	Less than or equal to 60	1	B	M	12/30/2022	12/30/2022	2	2	0.11537432	0.23074964
2219932	92124	DB	PC	3/4"	539	Less than or equal to 60	1	B	S	10/24/2022	10/25/2022	286	2	0.11537432	34.3857014
2218832	92083	DB	3/4"	779	Less than or equal to 60	2	B	S	10/11/2022	10/11/2022	287	1	0.11537432	11.6421838	
2211734	92115	DB	PC	3/4"	863	Less than or equal to 60	1	B	S	7/5/2022	7/5/2022	198	1	0.11537432	21.45370157
2212583	92119	MB	PC	3/4"	695	Less than or equal to 60	2	B	S	6/10/2022	6/10/2022	215	2	0.11537432	26.90557089
2201285	91950	DB	PC	3/4"	743	Less than or equal to 60	1	B	S	1/19/2022	1/20/2022	202	2	0.11537432	0.23074964
2218571	92083	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	10/7/2022	10/8/2022	281	20	0.11537432	32.4202989
2213228	92021	DB	3/4"	839	Less than or equal to 60	1	M	M	12/1/2022	12/1/2022	137	1	0.11537432	0.11537432	
2202741	91911	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	2/20/2022	3/31/2022	151	112	0.0101493	2.79574472
2220940	92110	DB	PC	3/4"	755	Less than or equal to 60	1	B	M	11/7/2022	11/7/2022	1	1	0.11537432	0.11537432
2204809	91950	MB	PC	1 1/2"	743	Less than or equal to 60	2	B	M	3/16/2022	3/16/2022	1	1	0.11537432	0.11537432
2205002	91911	MB	PC	1 1/2"	1019	Less than or equal to 60	1	B	S	1/21/2022	1/21/2022	120	1	0.11537432	0.2297895
2212109	92024	MB	PC	3/4"	407	Less than or equal to 60	2	B	S	11/16/2022	11/16/2022	185	1	0.11537432	0.23074964
2202907	91911	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	3/1/2022	5/1/2022	85	84	0.01348816	1.68602009
2212425	92083	DB	PC	3/4"	495	Less than or equal to 60	2	B	M	12/20/2022	12/21/2022	1	1	0.11537432	0.23074964
2203932	92027	DB	PC	3/4"	815	Less than or equal to 60	2	B	S	3/2/2022	3/6/2022	67	7	0.11537432	7.79301704
2204317	91905	DB	PC	3/4"	719	Less than or equal to 60	1	B	S	3/8/2022	3/8/2022	68	1	0.11537432	7.84054176
2212241	91942	DB	3/4"	659	Less than or equal to 60	2	B	S	7/13/2022	8/9/2022	221	28	0.11537432	25.4971577	
2212490	92109	DB	PC	3/4"	899	Less than or equal to 60	2	B	S	7/18/2022	8/9/2022	221	23	0.11537432	25.4971577
2203936	92115	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	4/5/2022	5/2/2022	151	31	0.11537432	21.45370157
2209567	92105	DB	PC	3/4"	827	Less than or equal to 60	1	B	S	5/31/2022	5/31/2022	251	1	0.11537432	17.42158453
2208322	92105	DB	PC	3/4"	251	Less than or equal to 60	2	B	S	5/12/2022	6/14/2022	165	34	0.00512629	0.85112722
2201874	92027	DB	3/4"	707	Less than or equal to 60	2	B	S	1/28/2022	1/28/2022	120	2	0.11537432	0.23074964	
2207929	91941	MB	PC	3/4"	803	Less than or equal to 60	2	B	S	5/9/2022	5/9/2022	159	15	0.11537432	16.45730875
2203935	91911	DB	PC	3/4"	515	Less than or equal to 60	2	B	S	5/21/2022	5/21/2022	137	1	0.11537432	0.11537432
2209071	91911	MB	PC	1 1/2"	647	Less than or equal to 60	2	B	M	5/23/2022	7/8/2022	147	47	0.008832453	0.18012571
2200487	92129	MB	PC	1 1/2"	839	Less than or equal to 60	2	B	S	1/10/2022	1/14/2022	14	5	0.11537432	1.51246248
2206230	92021	DB	3/4"	539	Less than or equal to 60	2	B	S	4/11/2022	4/12/2022	17	5	0.11537432	1.74822494	
2210117	92103	MB	PC	1 1/2"	1139	Less than or equal to 60	2	B	S	6/10/2022	7/8/2022	130	30	0.01012656	2.962138632
2211626	92105	MB	PC	3/4"	827	Less than or equal to 60	2	B	M	8/29/2022	9/6/2022	1	1	0.11537432	1.01817558
2219008	92101	MB	PC	12"	791	Greater than 60	2	B	M	10/13/2022	10/24/2022	12	12	0.11537432	1.18446784
2203904	92105	DB	PC	3/4"	815	Less than or equal to 60	2	B	S	5/26/2022	6/25/2022	176	31	0.000942607	0.16588089
2202749	91910	DB	3/4"	599	Less than or equal to 60	2	B	S	1/1/2022	5/17/2022	137	2	0.11537432	0.23074964	
2200071	92116	MB	PC	1 1/2"	719	Less than or equal to 60	1	B	M	1/10/2022	1/11/2022	17	2	0.11537432	0.23074964
2202847	92105	DB	PC	3/4"	719	Less than or equal to 60	2	B	S	4/19/2022	4/19/2022	137	31	0.00494768	0.11370552
2201784	92109	DB	PC	3/4"	899	Less than or equal to 60	1	B	S	1/27/2022	1/27/2022	27	1	0.11537432	3.15151774
2223040	92025	DB	PC	3/4"	839	Less than or equal to 60	1	B	M	11/29/2022	11/30/2022	2	2	0.11537432	0.23074964
2211886	92105	DB	3/4"	875	Less than or equal to 60	2	B	S	9/15/2022	9/15/2022	163	2	0.11537432	0.48499512	
2207853	92111	DB	PC	3/4"	779	Less than or equal to 60	1	B	M	5/4/2022	5/4/2022	1	1	0.11537432	0.11537432
2211507	92054	MB	PC	3/4"	851	Less than or equal to 60	2	B	S	8/26/2022	8/26/2022	242	1	0.11537432	27.9208614
2225428	92116	MB	PC	1 1/2"	1019	Less than or equal to 60	2	B	M	12/21/2022	12/21/2022	1	1	0.11537432	0.11537432
2210884	92114	DB	PC	3/4"	959	Less than or equal to 60	2	B	S	6/21/2022	7/19/2022	200	29	0.001840401	0.36808208
2211753	92105	DB	3/4"	635	Less than or equal to 60	1	M	M	9/24/2022	9/25/2022	200</				

220973	92105	DB	PC	1"	839	Less than or equal to 60	1	B	S	5/25/2022	5/26/2022	146	2	0.11537432	16.84471087
220407	92126	DB	PC	1"	850	Less than or equal to 60	2	S	S	2/5/2022	2/4/2022	45	2	0.11537432	15.19382694
2212626	92113	DB	PC	3/4"	851	Less than or equal to 60	1	B	M	7/19/2022	7/19/2022	1	1	0.11537432	0.11537432
221298	92109	DB	PC	3/4"	859	Less than or equal to 60	1	B	M	7/22/2022	7/22/2022	1	1	0.11537432	0.11537432
2213011	92111	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	7/25/2022	8/5/2022	8	2	0.11537432	26.1806416
2221462	92113	DB	P	1/2"/PS	843	Less than or equal to 60	1	B	M	11/11/2022	11/11/2022	1	1	0.11537432	0.11537432
2211440	92114	DB	PC	3/4"	895	Less than or equal to 60	1	S	S	6/28/2022	6/28/2022	1	1	0.11537432	20.7631651
2201074	92119	DB	P	3/4"	647	Less than or equal to 60	1	B	M	1/16/2022	1/18/2022	3	3	0.11537432	0.346124196
2221474	92127	MB	P	3"	503	Less than or equal to 60	1	B	M	11/11/2022	11/11/2022	1	1	0.11537432	0.11537432
2202419	91811	DB	PC	3/4"	599	Less than or equal to 60	1	S	S	2/1/2022	2/1/2022	38	1	0.11537432	4.03811562
2209139	92115	DB	PC	3/4"	883	Less than or equal to 60	2	B	S	5/20/2022	4/18/2022	169	30	0.11537432	19.49812971
2204084	91941	DB	PC	3/4"	1139	Less than or equal to 60	1	B	M	3/4/2022	3/4/2022	1	1	0.11537432	0.230749644
2203131	91977	MB	PC	2"	612	Less than or equal to 60	2	B	S	1/20/2022	3/9/2022	62	49	0.11537432	7.15323384
2201081	92113	DB	PC	1 1/2"	899	Less than or equal to 60	1	B	M	1/17/2022	3/22/2022	62	65	0.11537432	7.49981758
2212516	92120	DB	PC	3/4"	731	Less than or equal to 60	1	B	S	7/18/2022	7/18/2022	199	1	0.11537432	22.9057432
2212265	91942	DB	PC	3/4"	895	Less than or equal to 60	1	B	S	7/13/2022	7/14/2022	195	2	0.11537432	22.49892724
2205114	92139	DB	PC	3/4"	611	Less than or equal to 60	2	B	S	4/7/2022	4/7/2022	47	1	0.11537432	5.42362464
2213387	92109	DB	PC	3/4"	899	Less than or equal to 60	2	B	S	7/28/2022	8/10/2022	222	14	0.11537432	25.6131905
2202423	91911	DB	P	1"	131	Less than or equal to 60	1	B	S	2/4/2022	2/4/2022	35	1	0.11537432	4.03811562
2209963	92020	DB	P	1/2" CTS	539	Less than or equal to 60	2	B	S	6/7/2022	7/9/2022	150	33	0.02091574	21.47050897
2200892	92139	DB	P	3/4"	899	Less than or equal to 60	2	B	S	5/13/2022	3/7/2022	66	54	0.11537432	7.614732312
2205145	91977	MB	PC	1 1/2"	755	Less than or equal to 60	2	B	S	4/7/2022	6/9/2022	168	64	0.11537432	16.4595712
2212545	92120	MB	PC	1 1/2"	803	Less than or equal to 60	1	B	S	7/18/2022	7/19/2022	200	2	0.11537432	23.0749644
2218565	92121	MB	P	2"	507	Less than or equal to 60	1	B	S	10/7/2022	10/8/2022	281	2	0.11537432	32.4202989
2201481	92037	DB	PC	3/4"	551	Less than or equal to 60	1	B	M	1/21/2022	1/21/2022	1	1	0.11537432	0.11537432
2207380	92115	DB	PC	3/4"	791	Less than or equal to 60	2	B	S	4/27/2022	5/27/2022	147	31	0.11537432	16.9600856
2201785	92037	DB	P	1/2" CTS	551	Less than or equal to 60	1	B	S	1/27/2022	1/27/2022	1	1	0.11537432	0.11537432
2213269	92139	MB	PC	1 1/2"	803	Less than or equal to 60	2	B	S	7/17/2022	8/29/2022	241	34	0.001808467	0.844615444
2223001	92040	MB	PC	2"	683	Less than or equal to 60	2	B	M	11/29/2022	11/30/2022	1	2	0.11537432	0.230749644
2212458	92126	DB	PC	3/4"	628	Less than or equal to 60	1	B	S	11/14/2022	11/14/2022	318	1	0.11537432	36.4891478
2204825	91910	MB	PC	2"	767	Less than or equal to 60	2	B	S	3/17/2022	3/17/2022	1	1	0.11537432	0.11537432
2213002	92020	DB	PC	3/4"	868	Less than or equal to 60	2	B	S	7/13/2022	8/4/2022	216	1	0.11537432	24.9200411
2208413	92104	MB	PC	1 1/2"	815	Less than or equal to 60	2	B	S	5/13/2022	4/14/2022	165	33	0.00114626	0.5131413
2210917	92084	MB	PC	1 1/2"	791	Less than or equal to 60	2	B	M	9/16/2022	9/15/2022	6	6	0.11537432	0.60242802
2218006	92054	DB	PC	1 1/2"/PS	455	Less than or equal to 60	1	B	M	9/28/2022	9/28/2022	1	1	0.11537432	0.11537432
2208228	92102	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	6/11/2022	6/7/2022	158	28	0.00193728	2.2048092
2215120	92037	DB	PC	3/4"	887	Less than or equal to 60	2	B	S	8/23/2022	8/6/2022	251	17	0.11537432	29.9557713
2213737	92064	DB	P	1"	395	Less than or equal to 60	1	B	M	8/2/2022	8/9/2022	2	2	0.11537432	0.230749644
2209904	92104	DB	PC	3/4"	659	Less than or equal to 60	1	B	S	6/6/2022	6/6/2022	157	1	0.11537432	18.1138292
2210081	92105	MB	PC	1 1/2"	875	Less than or equal to 60	2	B	S	6/8/2022	7/13/2022	194	13	0.04002616	7.77422022
2212253	92156	DB	PC	3/4"	895	Less than or equal to 60	2	B	S	7/13/2022	7/27/2022	208	15	0.11537432	23.79794426
2209837	91945	DB	PC	3/4"	620	Less than or equal to 60	2	B	S	6/10/2022	6/21/2022	181	1	0.11537432	1.84959712
2208012	92103	MB	P	2"	559	Less than or equal to 60	1	B	M	5/8/2022	5/9/2022	2	2	0.11537432	0.230749644
2204639	91977	DB	PC	3/4"	647	Less than or equal to 60	1	B	M	3/14/2022	4/4/2022	22	22	0.11537432	2.53841424
2209239	92105	DB	PC	3/4"	124	Less than or equal to 60	1	B	S	3/31/2022	6/30/2022	181	1	0.000417462	0.74450554
2201664	92139	MB	PC	2"	863	Less than or equal to 60	2	B	S	1/25/2022	2/1/2022	32	8	0.11537432	3.61919124
2208444	92102	DB	P	7/9	779	Less than or equal to 60	1	B	S	5/12/2022	5/12/2022	151	20	0.00103986	1.56147398
2220243	92084	MB	P	2"	527	Less than or equal to 60	1	B	S	10/27/2022	10/27/2022	300	7	0.11537432	34.6124196
2206049	92100	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	1/11/2022	2/17/2022	48	38	0.11537432	5.53787136
2206236	91977	DB	PC	3/4"	743	Less than or equal to 60	1	B	S	4/14/2022	4/28/2022	118	1	0.11537432	17.75024022
2204635	91910	MB	PC	4"	1188	Less than or equal to 60	1	B	S	3/14/2022	3/14/2022	79	1	0.11537432	8.42325436
2204739	92118	DB	PC	1 1/4"	575	Less than or equal to 60	2	B	S	5/15/2022	5/15/2022	11	1	0.11537432	15.1148999
2209801	92115	DB	PC	3/4"	983	Less than or equal to 60	2	B	S	6/4/2022	7/6/2022	196	36	0.11537432	21.9211908
2208241	92103	DB	PC	1 1/2"	791	Less than or equal to 60	2	B	S	5/11/2022	7/25/2022	200	76	0.11537432	26.70735479
2213542	92114	DB	PC	3/4"	635	Less than or equal to 60	1	B	M	7/29/2022	7/29/2022	1	1	0.11537432	0.230749644
2213844	92117	DB	PC	3/4"	767	Less than or equal to 60	1	B	M	8/3/2022	8/3/2022	1	1	0.11537432	0.11537432
2212568	92119	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	8/9/2022	8/9/2022	200	1	0.11537432	25.38244104
2209971	91910	MB	PC	1 1/2"	1055	Less than or equal to 60	2	B	M	5/25/2022	5/26/2022	2	2	0.11537432	0.11537432
2204046	92101	DB	P	1 1/4"	539	Less than or equal to 60	1	B	M	1/8/2022	1/8/2022	1	1	0.11537432	0.11537432
2207467	91945	DB	PC	3/4"	791	Less than or equal to 60	1	B	S	4/28/2022	6/2/2022	153	13	0.002021486	0.230749644
2215489	92102	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	8/25/2022	9/6/2022	249	13	0.11537432	28.7380827
2211793	92008	MB	PC	1 1/4"	511	Less than or equal to 60	2	B	S	7/6/2022	7/6/2022	279	2	0.11537432	24.1131899
2211248	92114	MB	PC	2"	887	Less than or equal to 60	2	B	S	6/27/2022	7/21/2022	202	25	0.11537432	21.3505685
2208743	92100	DB	PC	1 1/2"	791	Less than or equal to 60	2	B	S	5/15/2022	6/6/2022	157	84	0.11537432	18.1138292
2208195	92116	MB	PC	1 1/2"	1123	Less than or equal to 60	1	B	S	5/13/2022	6/6/2022	159	1	0.001109511	0.230749644
2211505	92109	MB	PC	2"	731	Less than or equal to 60	2	B	S	6/22/2022	5/15/2022	258	25	0.11537432	29.76680086
2206113	91977	DB	PC	3/4"	743	Less than or equal to 60	1	B	S	4/12/2022	4/12/2022	102	1	0.11537432	11.76822366
2204260	92024	DB	PC	3/4"	803	Less than or equal to 60	1	B	M	3/8/2022	3/8/2022	1	1	0.11537432	0.11537432
2206044	92139	DB	PC	3/4"	989	Less than or equal to 60	2	B	S	1/11/2022	3/14/2022	73	63	0.11537432	8.42315436
2220562	92084	DB	PC	3/4"	827	Less than or equal to 60	2	B	S	10/11/2022	11/11/2022	315	1	0.11537432	34.34480274
2210763	92149	MB	PC	1 1/2"	983	Less than or equal to 60	2	B	S	6/20/2022	7/6/2022	191	21	0.11537432	22.03875781
2211833	92014	DB	P	2"	504	Less than or equal to 60	1	B	M	10/4/2022	10/4/2022	1	1	0.11537432	0.11537432
2214287	92115	DB	P	3"	551	Less than or equal to 60	2	B	M	8/10/2022	8/11/2022	2	2	0.11537432	0.230749644
2206055	92129	DB	P	1/2" CTS	515	Less than or equal to 60	2	B	S	1/11/2022	1/11/2022	11	1	0.11537432	1.26912052
2210462	92114	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	6/15/2022	6/15/2022	166	1	0.11537432	19.5220551
2215906	92020	MB	P	3"	575	Less than or equal to 60	1	B	S	8/3/2022	8/3/2022	243	1	0.11537432	28.0380988
2211145	92114	DB	PC	3/4"	647	Less than or equal to 60	2	B	S	6/24/2022	7/9/2022	207	2	0.11537432	22.8825952
2209454	92139	MB	PC	2"	875	Less than or equal to 60	1	B	M	1/8/2022	1/8/2022	1	1	0.11537432	0.11537432
2223179	91902	DB	PC	3/4"	623	Less than or equal to 60	2	B	M	11/30/2022	12/5/2022	6	6	0.11537432	0.60242802
2212932	92102	DB	PC	3/4"	851	Less than or equal to 60	2	B	S	7/22/202					

2206553	92114	DB	PC	3/4"	839	Less than or equal to 60	1	B	S	4/14/2022	4/14/2022	104	1	1.11537432	11.98897213
2209569	92019	MB	PC	3/4"	575	Less than or equal to 60	1	M	S	5/21/2022	5/21/2022	145	1	0.11537432	0.23079464
2202899	91902	DB	PC	1"	659	Less than or equal to 60	2	B	S	5/25/2022	5/25/2022	145	104	0.00123846	0.17953099
2208307	92011	MB	P	3"	445	Less than or equal to 60	1	B	S	5/12/2022	5/12/2022	133	2	0.11537432	15.34483936
2212003	91950	DB	PC	3/4"	575	Less than or equal to 60	1	M	S	7/11/2022	7/11/2022	145	60	0.11537432	0.11537432
2215141	92113	MB	PC	1"	539	Less than or equal to 60	1	B	M	8/22/2022	8/22/2022	145	2	0.11537432	0.23079464
2211013	92115	DB	PC	3/4"	575	Less than or equal to 60	1	S	S	6/8/2022	6/8/2022	159	2	0.11537432	15.34483936
2209992	92115	DB	PC	3/4"	971	Less than or equal to 60	2	B	S	6/7/2022	6/7/2022	223	66	0.000889794	0.139361878
2203280	91942	DB	PC	3/4"	719	Less than or equal to 60	2	B	S	2/17/2022	2/17/2022	83	34	0.11537432	9.57632756
2212600	92115	DB	PC	3/4"	136	Less than or equal to 60	1	B	S	7/19/2022	7/19/2022	216	1	0.11537432	4.207430315
2206969	91942	DB	PC	3/4"	875	Less than or equal to 60	2	B	S	4/21/2022	4/14/2022	134	26	0.11537432	15.46021409
2209917	91945	DB	PC	3/4"	809	Less than or equal to 60	2	B	S	6/7/2022	6/7/2022	180	1	0.08912977	1.438316149
2213383	92118	DB	P	1 1/4"	575	Less than or equal to 60	2	B	M	7/15/2022	8/2/2022	19	19	0.11537432	2.192119908
2204269	92014	DB	PC	3/4"	731	Less than or equal to 60	1	B	M	3/8/2022	3/8/2022	19	1	0.11537432	0.11537432
2200862	92113	DB	PC	3/4"	719	Less than or equal to 60	2	B	M	7/14/2022	7/14/2022	78	1	0.11537432	8.42225436
2206467	91941	DB	PC	3/4"	671	Less than or equal to 60	2	B	S	4/13/2022	8/22/2022	134	132	0.11537432	26.99768729
2210665	92115	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	7/25/2022	7/25/2022	206	1	0.11537432	15.34483936
2208435	92102	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	5/13/2022	5/13/2022	233	1	0.11537432	15.34483936
2212777	91941	DB	PC	3/4"	731	Less than or equal to 60	2	B	S	7/28/2022	8/4/2022	216	16	0.11537432	24.82094121
2208129	92102	MB	PC	1 1/2"	839	Less than or equal to 60	2	B	S	6/9/2022	6/9/2022	160	1	0.11537432	15.34483936
2218975	91911	DB	P	1/2"CTS	551	Less than or equal to 60	1	B	M	10/12/2022	10/12/2022	1	1	0.11537432	0.11537432
2211983	92115	DB	PC	3/4"	719	Less than or equal to 60	2	B	M	7/9/2022	7/9/2022	48	81	0.04242027	16.03708775
2214297	92124	DB	P	1 1/4"	491	Less than or equal to 60	2	B	S	8/10/2022	8/10/2022	230	9	0.11537432	26.53618836
2208893	92025	MB	P	2"	875	Less than or equal to 60	2	B	S	5/26/2022	6/3/2022	154	15	0.11537432	17.76730873
2203289	91902	DB	PC	3/4"	719	Less than or equal to 60	2	B	S	9/17/2022	9/17/2022	145	1	0.11537432	15.34483936
2203863	92120	DB	PC	3/4"	779	Less than or equal to 60	2	B	M	3/1/2022	9/11/2022	11	11	0.11537432	1.269122052
2206711	92115	DB	PC	3/4"	875	Less than or equal to 60	2	B	S	4/18/2022	5/19/2022	145	32	0.11537432	16.03708775
2212069	92056	DB	PC	3/4"	635	Less than or equal to 60	2	B	S	7/11/2022	7/26/2022	207	16	0.11537432	21.88256952
2205145	91977	DB	PC	3/4"	735	Less than or equal to 60	1	B	M	3/23/2022	3/23/2022	1	1	0.11537432	0.11537432
2206479	92114	DB	PC	3/4"	647	Less than or equal to 60	1	B	S	4/18/2022	4/18/2022	108	1	0.11537432	12.46047106
2214729	92054	DB	PC	3/4"	1105	Less than or equal to 60	1	B	S	8/14/2022	8/14/2022	228	1	0.11537432	26.3064389
2200024	92017	DB	PC	3/4"	719	Less than or equal to 60	2	B	M	12/13/2022	12/13/2022	18	18	0.11537432	0.11537432
2205873	91945	DB	PC	3/4"	791	Less than or equal to 60	1	B	S	4/4/2022	4/4/2022	94	1	0.11537432	10.84524881
2217181	92110	DB	PC	3/4"	875	Less than or equal to 60	2	B	M	9/28/2022	9/21/2022	2	2	0.11537432	0.23079464
2200705	92139	DB	PC	3/4"	827	Less than or equal to 60	2	B	S	12/12/2022	12/24/2022	54	44	0.11537432	8.14651606
2201032	92114	DB	P	1/2"CTS	587	Less than or equal to 60	1	B	S	1/14/2022	2/23/2022	54	41	0.11537432	6.238235528
2212918	91977	DB	PC	3/4"	635	Less than or equal to 60	1	M	S	11/29/2022	11/29/2022	1	1	0.11537432	0.11537432
2219968	92103	DB	PC	3"	767	Less than or equal to 60	2	B	M	10/24/2022	10/24/2022	1	1	0.11537432	0.11537432
2212908	92111	MB	PC	2"	625	Less than or equal to 60	1	B	S	7/7/2022	7/8/2022	189	2	0.11537432	21.80502455
2214820	92021	MB	PC	1 1/2"	875	Less than or equal to 60	2	B	S	8/14/2022	8/14/2022	253	50	0.026268413	15.70238814
2204896	92081	MB	P	3"	515	Less than or equal to 60	1	B	M	3/17/2022	3/18/2022	2	2	0.11537432	0.23079464
2205462	92114	DB	PC	3/4"	887	Less than or equal to 60	2	B	S	4/13/2022	4/13/2022	197	1	0.11537432	17.88299868
2209203	92105	DB	PC	3/4"	887	Less than or equal to 60	2	B	S	5/25/2022	6/21/2022	172	28	0.11537432	19.844639
2207679	92115	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	5/3/2022	7/25/2022	206	84	0.07064618	15.66539733
2212100	91945	DB	PC	1 1/2"	935	Less than or equal to 60	2	M	S	11/11/2022	11/11/2022	193	27	0.11537432	22.76732328
2212257	92105	DB	P	1/2"CTS	479	Less than or equal to 60	1	B	M	11/18/2022	11/18/2022	1	1	0.11537432	0.11537432
2203114	92056	DB	P	3"	515	Less than or equal to 60	1	B	S	10/27/2022	10/28/2022	381	1	0.11537432	16.72779413
2213146	92119	DB	PC	3/4"	803	Less than or equal to 60	2	B	S	7/28/2022	8/6/2022	249	41	0.00150879	0.375673657
2208520	92104	DB	PC	1 1/4"	635	Less than or equal to 60	2	B	S	5/16/2022	4/30/2022	181	46	0.00140287	0.26791191
2209146	92105	MB	PC	1 1/2"	887	Less than or equal to 60	1	B	S	5/24/2022	5/24/2022	145	44	0.11537432	15.34483936
2213326	92054	MB	PC	1 1/4"	899	Less than or equal to 60	1	B	M	12/4/2022	12/5/2022	2	2	0.11537432	0.23079464
2212414	92126	DB	PC	3/4"	1121	Less than or equal to 60	2	B	S	11/11/2022	11/11/2022	11	11	0.11537432	22.3679879
2205890	92106	DB	PC	3/4"	887	Less than or equal to 60	1	B	M	4/4/2022	4/4/2022	1	1	0.11537432	0.11537432
2201374	92114	DB	PC	1 1/2"	885	Less than or equal to 60	1	B	S	12/9/2022	1/21/2022	21	21	0.11537432	2.42088972
2213602	92106	MB	PC	2"	1155	Less than or equal to 60	2	B	S	6/16/2022	7/12/2022	193	27	0.11537432	15.34483936
2208936	91911	DB	PC	3/4"	933	Less than or equal to 60	2	B	M	5/21/2022	5/31/2022	102	11	0.11537432	1.269122052
2207465	91978	DB	PC	3/4"	457	Less than or equal to 60	1	B	S	4/28/2022	4/28/2022	119	1	0.11537432	17.76730873
2210688	92106	DB	PC	3/4"	863	Less than or equal to 60	2	B	S	6/18/2022	7/21/2022	202	34	0.11537432	23.30569586
2201100	92105	DB	PC	3/4"	875	Less than or equal to 60	2	B	S	6/8/2022	7/16/2022	197	39	0.000736002	0.144902933
2211801	92114	DB	PC	3/4"	731	Less than or equal to 60	2	B	S	6/16/2022	6/17/2022	168	1	0.11537432	15.34483936
2212597	92018	MB	PC	2"	719	Less than or equal to 60	2	B	S	8/12/2022	8/12/2022	224	25	0.11537432	25.84939997
2211830	92083	DB	PC	2"	41	Less than or equal to 60	2	B	S	10/5/2022	11/2/2022	307	1	0.11537432	16.03708775
2207458	92090	MB	P	3"	599	Less than or equal to 60	2	B	S	4/18/2022	5/23/2022	143	26	0.11537432	16.49868668
2205757	91977	DB	PC	3/4"	767	Less than or equal to 60	2	B	S	4/15/2022	4/20/2022	110	20	0.00271316	0.24084706
2212108	92116	DB	PC	3/4"	809	Less than or equal to 60	2	B	M	12/29/2022	1/31/2022	145	20	0.11537432	0.146124124
2202092	91950	DB	PC	3/4"	743	Less than or equal to 60	1	B	S	1/31/2022	2/1/2022	32	2	0.11537432	3.69191424
2212761	92026	MB	PC	3/4"	755	Less than or equal to 60	1	M	S	11/28/2022	11/28/2022	1	1	0.11537432	0.11537432
2213962	92117	MB	PC	1 1/2"	767	Less than or equal to 60	1	B	M	8/4/2022	8/4/2022	1	1	0.11537432	0.11537432
2214207	92103	DB	P	1/2"PS	551	Less than or equal to 60	1	B	M	12/9/2022	12/9/2022	1	1	0.11537432	0.11537432
2200504	92139	MB	PC	3/4"	779	Less than or equal to 60	2	B	S	12/6/2022	12/6/2022	4	46	0.11537432	15.34483936
2212063	92110	DB	PC	3/4"	815	Less than or equal to 60	2	B	M	11/6/2022	11/6/2022	1	1	0.11537432	0.11537432
2211623	92115	DB	PC	3/4"	839	Less than or equal to 60	2	B	S	6/15/2022	7/16/2022	197	32	0.11537432	22.7388822
2204001	92084	MB	P	3"	527	Less than or equal to 60	1	B	M	3/9/2022	3/9/2022	1	1	0.11537432	0.11537432
2202170	92129	DB	PC	3/4"	875	Less than or equal to 60	1	B	S	2/1/2022	2/1/2022	32	1	0.11537432	3.69191424
2208073	92123	DB	PC	3/4"	635	Less than or equal to 60	2	B	M	5/24/2022	5/24/2022	168	1	0.11537432	15.34483936
2202964	92126	DB	PC	3/4"	635	Less than or equal to 60	2	B	S	2/14/2022	2/14/2022	1	1	0.11537432	0.11537432
2212051	92029	DB	P	1 1/4"	611	Less than or equal to 60	2	B	S	11/4/2022	11/4/2022	1	1	0.11537432	0.11537432
2215474	92109	DB	PC	3/4"	947	Less than or equal to 60	2	B	S	8/25/2022	9/13/2022	256	20	0.11537432	29.5393139
2215768	92037	MB	PC	2"	611	Less than or equal to 60	2	B	S	8/30/2022	8/25/2022	266	25	0.11537432	30.89867871
2200729															

Pipeline Leaks

Removed

2220138

SDG&E, June 15th, 2023

Rulemaking (R) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.
In Response to Data Request, R15-01-008, 2023 June Report
Appendix 4: Rev. 03/30/2023

Notes:
Definitions in Data Request R15-01-008, 2023 June Report
If highlighted cells are filled in, the other cells will auto-populate

Summary of Data by Pipeline Facility/Material and Results for Annual System Leak Rate and Resulting Number of Unknown Leaks for Each Pipeline Facility/Material

Facility/Material	Total System Miles per material type	Miles on Annual Survey [M _{AS}]	Miles on Multi-Year Survey Cycles [M _{MS}]	Survey Interval [Yr]	Miles Surveyed Annually from Multi-Year Survey Cycles [M _{LY}]	Total # of Leaks Detected from Survey [N _{LD}]	If using a 3-year trailing leak rate average then include - 2020 Annual Leak Rate [R _{LD}]	If using a 3-year trailing leak rate average then include - 2021 Annual Leak Rate [R _{LD}]	2022 Annual Leak Rate [R _{LD}]	If applicable, then calculate the 3-year Average Leak Rate [Leak / Mile / Yr]	# of Unknown Leaks	Total # of Leaks Detected from O&M* [N _{LO}]
Main/Vintage* Plastic	1,498	1,498	-	1	0	43	0.0168	0.0257	$R_{L,3} = \frac{N_{LD}}{M_{L,3} + (I \times M_{L,3})}$	$\bar{R}_L = \frac{1}{3} \sum_{i=1}^3 R_{L,i}$	$N_{L,unk} = \bar{R}_L \times (M_{L,3}^{O&M} - M_{L,3}) \times \frac{1}{2}$	35
Main/Plastic	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Plastic	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Plastic	3,218	1,057	2,161	3	720	6	0.0003	0.0003	0.00186	0.00083	1.80	2
Main/Unprotected Steel	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Unprotected Steel	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Vintage* Protected Steel	NA	NA	NA	5	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Vintage* Protected Steel	483	483	-	1	0	42	0.0815	0.1139	0.08696	0.09413	-	22
Main/Protected Steel	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Protected Steel	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Main/Protected Steel	3,127	1,037	2,090	3	697	83	0.0148	0.0129	0.02054	0.01808	87.79	35
Main/Unknown	NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA	NA
Service/Vintage* Plastic	1,247	1,247	-	1	0	39	0.0231	0.0184	0.03128	0.02426	-	26
Service/Plastic	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Plastic	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Plastic	3,023	843	2,180	3	727	8	0.0000	0.0023	0.00265	0.00166	3.63	6
Service/Unprotected Steel	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Unprotected Steel	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Unprotected Steel	NA	NA	NA	5	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Vintage* Protected Steel	290	290	-	1	0	44	0.2368	0.2181	0.15172	0.20223	-	24
Service/Protected Steel	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Protected Steel	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Protected Steel	2,138	1,093	1,043	3	481	200	0.0200	0.0471	0.07887	0.04864	70.18	82
Service/Copper	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Copper	NA	NA	NA	4	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Copper	NA	NA	NA	5	NA	NA	N/A	N/A	NA	NA	NA	NA
Service/Unknown	NA	NA	NA	3	NA	NA	N/A	N/A	NA	NA	NA	NA
Total	15,422	7,548	7,874	NA	2,625	465	N/A	N/A	NA	N/A	113	242

*Definitions for "vintage" materials:

Vintage Plastic	Pipe installed before 1986 + "unknown" manufacture PE pipe
Vintage Protected Steel	Pipe installed before 1950

Estimated Emissions by Pipeline Facility/Material for Each Leakage Category

Leakage Category	Emission Factor (Mscf/day/leak)	2022 Emissions from Leaks detected Prior to 2022 (Mscf)	2022 Emissions from Leaks Detected from 2022 Survey (Mscf)	2022 Emissions from O&M* Leaks Detected in 2022 (Mscf)	2022 Estimated Emissions from Unknown Leaks (Mscf)	Total Estimated 2022 Emissions from Distribution Pipelines (Mscf)
Facility/Material						
Main/Vintage* Plastic	0.1154	0	1,005	17	0	1,022
Main/Plastic	0.1154	NA	NA	NA	NA	NA
Main/Plastic	0.1154	NA	NA	NA	NA	NA
Main/Plastic	0.1154	0	74	0	76	153
Main/Unprotected Steel	0.1154	NA	NA	NA	NA	NA
Main/Unprotected Steel	0.1154	NA	NA	NA	NA	NA
Main/Unprotected Steel	0.1154	NA	NA	NA	NA	NA
Main/Vintage* Protected Steel	0.1154	0	528	40	0	568
Main/Protected Steel	0.1154	0	1,088	49	1,591	2,728
Main/Protected Steel	0.1154	NA	NA	NA	NA	NA
Main/Protected Steel	0.1154	NA	NA	NA	NA	NA
Main/Unknown	0.1154	NA	NA	NA	NA	NA
Service/Vintage* Plastic	0.1154	0	753	13	0	766
Service/Plastic	0.1154	NA	NA	NA	NA	NA
Service/Plastic	0.1154	NA	NA	NA	NA	NA
Service/Plastic	0.1154	0	76	5	153	227
Service/Unprotected Steel	0.1154	NA	NA	NA	NA	NA
Service/Unprotected Steel	0.1154	NA	NA	NA	NA	NA
Service/Unprotected Steel	0.1154	NA	NA	NA	NA	NA
Service/Vintage* Protected Steel	0.1154	0	609	7	0	616
Service/Protected Steel	0.1154	NA	NA	NA	NA	NA
Service/Protected Steel	0.1154	NA	NA	NA	NA	NA
Service/Protected Steel	0.1154	0	2,911	59	2,956	5,925
Service/Copper	0.1154	NA	NA	NA	NA	NA
Service/Copper	0.1154	NA	NA	NA	NA	NA
Service/Copper	0.1154	NA	NA	NA	NA	NA
Service/Unknown	0.1154	NA	NA	NA	NA	NA
Total	N/A	0	7,039	190	4,775	12,004

O&M leaks include any other pipeline leaks that are discovered during the year from operations and maintenance activity, third party and gas odor reports, etc. that are not accounted for in other categories of this worksheet.

The cells below should be used for calculating emissions when a risk based leak detection and repair practice is used by the Utility. This table is intended to help categorize emissions associated with large leaks (Super Emitters (SEs)), and non-large leaks (non-SEs).

	2022 Emissions from Leaks detected Prior to 2022 (Mscf)	2022 Emissions from Leaks Detected from 2022 Survey (Mscf)	2022 Emissions from O&M* Leaks Detected in 2022 (Mscf)	2022 Estimated Emissions from Unknown Leaks (Mscf)	Total Estimated 2022 Emissions from Distribution Pipelines (Mscf)

Large Leak Emitter Program					
Compliance Leak Survey - Non-LL	-				
Compliance Leak Survey - LL	-				
Large Leak Emitter Program Outside Compliance Area - Non-LL	-				
Large Leak Emitter Program Outside Compliance Area - LL	-				
O&M - Non-LL	-				
O&M - LL	-				
TOTAL	-	-	-	-	-

SDG&E, June 15th, 2023

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In Response to Data Request, R15-01-008, 2023 June Report

Appendix 4; Rev. 03/30/2023

This summary purposefully should exclude damages, blowdowns, component emissions and component leaks.

	Count of Leaks Carried over from Prior Year	Count of Leaks Discovered in the Year of Interest	Count of Leaks Repaired in the Year of Interest	Average Days to Repair Leaks	Count of Estimated Unsurveyed Leaks in the Year of Interest	Count of Remaining Leaks at final day of the Year of Interest (12/31/22)	Emissions from Leaks Carried over from Prior Year.	Emissions from Leaks Discovered in the Year of Interest.	Emissions from Estimated Unsurveyed Leaks in the Year of Interest	Total Emissions in the Year of Interest [Mscf of Natural Gas]
Grade 1	-	279	279	1	NA	-	-	2,204	NA	2,204
Grade 2	-	428	426	29	NA	-	-	5,025	NA	5,025
Grade 3	-	-	-	-	NA	-	-	-	NA	-
Graded Leak Total	-	707	705	NA	-	2	-	7,229	-	7,229
Above Ground Hazardous	0	0	0	0	0	-	0	0	NA	0
Above Ground Non-Hazardous	0	0	0	0	0	-	0	0	NA	0
Above Ground Non-Hazardous Minor	0	0	0	0	0	-	0	0	NA	0
AG Total	-	-	-	-	-	-	-	-	-	-
Total of All Leaks	-	707	705	NA	-	2	-	7,229	-	7,229
Main/Plastic	0	8	8	10.5	1.8	0	0	75	76	151
Main Vintage Plastic	0	78	78	6.9	-	0	0	1,022	0	1,022
Main/Unprotected Steel	0	0	0	NA	NA	0	NA	NA	NA	-
Main/Protected Steel	0	118	118	21.7	37.8	0	0	1,137	1,591	2,728
Main Vintage Protected Steel	0	69	69	25.4	-	0	0	568	0	568
Main Unknown	0	0	0	-	-	0	NA	NA	NA	-
Service/Plastic	0	14	14	10.2	3.6	0	0	74	153	227
Service Vintage Plastic	0	65	65	10.0	-	0	0	766	0	766
Service/Unprotected Steel	0	0	0	NA	NA	0	NA	NA	NA	-
Service Vintage Steel	0	68	68	20.4	-	0	0	616	0	616
Service/Protected Steel	0	287	287	20.3	70.2	0	0	2,970	2,956	5,925
Service Unknown	0	0	0	-	-	0	NA	NA	NA	-
Service/Copper										
Total	0	707	707	NA	113	0	0	7,229	4,775	12,004
Large Leak or Super Emitter Program Categorization										
Compliance Leak Survey - Non-LL						0				0
Compliance Leak Survey - LL						0				0
Large Leak/Super Emitter Program Outside Compliance Area - Non-LL						0				0
Large Leak/Super Emitter Program Outside Compliance Area - LL						0				0
O&M - Non-LL						0				0
O&M - LL						0				0
TOTAL	-	-	-	-	-	-	-	-	-	-
Change Due to LL/SE Program on 2022:										
% Change Due to LL/SE Program on 2022:										

This section added to the template for 2020 Reporting. Send any suggestions to improve this worksheet to Staff for consideration.

SDG&E, June 15th, 2023

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.
In Response to Data Request, R15-01-008 2023 June Report
Appendix 4; Rev. 03/30/2023

Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

Distribution Main & Service Pipeline Component Vented Emissions (see note above):

Total Number of Devices	Device Type	Bleed Rate	Manufacturer	Engineering or Manufacturer's based Estimate of Emissions	Annual Emissions (Mscf)	Explanatory Notes / Comments
Sum Total					0	

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be

Total Number of Devices	Device Type	Bleed Rate	Manufacturer	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day)	Annual Emission (Mscf)	Explanatory Notes / Comments
							Sum Total	0	

Appendix 4; Rev. 03/30/2023

Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Pipeline Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Pipe Classification	MA = distribution main, above ground MB = distribution main, below ground DA = distribution service, above ground DB = distribution service, below ground
Pipe Material	C = copper CI = cast iron P = plastics (Acetyl, ABS, PE, PVC, etc.) PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unprotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	If the utility uses grades for above ground leaks, it is unnecessary to use the AH,AN, or AM designations. 1 = grade 1 2 = grade 2 2+ = grade 2+ 3 = grade 3 AH = Above Ground Hazardous synonymous with Grade 1. AN = Above Ground Non-Hazardous, synonymous with Grade 2 and 2+. AM = Above Ground Non-Hazardous Minor (akin to grade 3 below ground leak). N = non-graded or ungraded
Upgraded Leak Grade or Downgraded Leak Grade	U: Upgraded Leak such as a grade 2 or 3 leak that was surveyed again and changed designation to grade 1 or 2. D: downgraded leak, such as a grade 1 or 2 leak that was surveyed again and changed designation to grade 2 or 3.
Above Ground or Below Ground	A = Above Ground B = below ground

Leak Discovery Method	<p>S = Routine Leak Survey (This discovery method should be parsed and the emissions summarized into leaks carried over from before 2016, and those detected in 2016. The totals for these subcategories should be carried over to column C43 through D63 on the Unsurveyed Pipeline Leaks tab.)</p> <p>M = O&M (E.G. O&M Activities, Third party reports, customer odor reports etc.)</p> <p>O = Other (This will be grouped with M in the summary categorization of leaks.)</p>
Discovery Date (MM/DD/YY)	
Re-Grade Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	Date that the pipeline repair stopped the leak. Any associated blowdowns resulting from the repair should be included in the blowdowns tab.
Scheduled Repair Date (MM/DD/YY)	<p>If leak is open, specify the scheduled date of repair;</p> <p>Otherwise type "M," signifying that the leak is being monitored with no scheduled date of repair;</p> <p>Then, provide the reason for not scheduling a repair in Column P.</p>
Reason for Not Scheduling a Repair	If Repair Date is blank, and Scheduled Repair Date (Column O) = "M", then provide the reason for not scheduling a repair.
Number of Days Leaking	<p>If the leak was discovered by survey in the year of interest, then assume leaking from January 1st of subject year <u>thru</u> repair date or December 31st of subject year, whichever is earlier. (E.G. Days Leaking = Repair - Jan 1st + 1 day.)</p> <p>(For days leaking for leaks carried over use January 1st as start date for emissions calculations.)</p> <p>For O&M discovered leaks, assume that the leak begins with the discovery date <u>thru</u> repair date or December 31st of subject year, whichever is earlier.</p>
Number of Days to Repair	<p>Use only Repair-Discovery +1. Do not use January 1st for time to repair.</p> <p>For regraded leaks, use Repair Date - Regrade Date +1.</p>
Emission Factor (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Unknown Leaks	
Facility/Material	
Total System Miles per material type	
Miles on Annual Survey [$M_{X,A}$]	

Miles on Multi-Year Survey Cycles [M_X^{Tot}]	
Survey Interval (yrs) [I]	
Miles Surveyed Annually from Multi-Year Survey Cycles [$M_{X,I}$]	
Total # of Leaks Detected from Survey [$N_{X,L}$]	
If using a 3-year trailing leak rate average then include - 2019 Annual Leak Rate [$R_{X,1}$]	
If using a 3-year trailing leak rate average then include - 2020 Annual Leak Rate [$R_{X,2}$]	
2022 Annual Leak Rate [$R_{X,3}$]	$R_{X,3} = \frac{N_{X,L}}{M_{X,A} + (I \times M_{X,I})}$
If applicable, then calculate the 3-year Average Leak Rate [Leaks / Mile / Yr]	$\overline{R}_X = \frac{1}{3} \sum_{i=1}^3 R_{X,i}$
# of Unknown Leaks	$N_{X,unk} = \overline{R}_X \times (M_X^{Tot} - M_{X,I}) \times \frac{I}{2}$
Total # of Leaks Detected from O&M* [$N_{X,O}$]	
Pipeline Leaks Summary	
Count of Leaks Carried over from Prior Year	Based on a leak start date prior to the first day of the year of interest.
Count of Leaks Discovered in the Year of Interest	The total number of leaks by grade or category discovered in the year of interest. If a leak is downgraded to not leaking, do not count it.
Count of Leaks Repaired in the Year of Interest	

Average Days to Repair Leaks	The average days to repair leaks should be baase on the formula: (Repair Date/Time minus Discovery Date/Time) plus (one day, unless using a discrete time stamp for leak repairs), then take the sum and divide by number of leaks repaired by grade to get the average days to repair.
Count of Estimated Unsurveyed Leaks in the Year of Interest	For leaks identified in Unsurveyed areas extrapolate the proportion of leak counts by grade that were found in the respective areas based on the year or periods used to estimate the unsurveyed leak count. If the unsurveyed leak count was based on the current year leak count by grade detected then use the current proportion of graded leak count applied to the unsurveyed leaks.
Count of Remaining Leaks at final day of the Year of Interest (12/31/xx)	This count is only of the actual leaks detected in the operator's system that have not been repaired as of 12/31 of the year of interest.
Emissions from Leaks Carried over from Prior Year.	Based on a leak start date prior to the first day of the year of interest. This includes leaks discovered through O&M and survey activities.
Emissions from Leaks Discovered in the Year of Interest.	The total number of leaks by grade or category discovered in the year of interest. This includes leaks discovered through O&M and survey activities.
Emissions from Estimated Unsurveyed Leaks in the Year of Interest	The emissions by grade would be on the same basis that used to extrapolate the count of leaks in the unsurveyed areas. For example: For leaks identified in Unsurveyed areas extrapolate the proportion of leak emissions by grade that were found in the respective areas based on the year or periods used to estimate the unsurveyed leak count. If the unsurveyed leak count was based on the current year leaks detected then use the current proportion of graded leaks applied to the unsurveyed leak emissions.
Total Emissions in the Year of Interest [Mscf of Natural Gas]	
All Damages	
ID	
Geographic Location	GIS, zip code, or equivalent
Damage Type	E = excavation damage N = natural force damage O = other outside force damage
Pipe Classification	MA = distriibution main, above ground MB = distriibution main, below ground DA = distribution service, above ground DB = distribution service, below ground

Pipe Material	C = copper CI = cast iron P = plastics (Acetal, ABS, PE, PVC, etc.) PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unptotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	1 = grade 1 2 = grade 2 2+ = grade 2+ 3 = grade 3 N = Non-Graded
Above Ground or Below Ground	AH = above ground, hazardous AN = above ground, non-hazardous B = below ground
Discovery Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	
Number of Days Leaking	<p>If date and time stamp are reliable and used consistently by respondent, then emissions may be calculated based on actual time leaking. E.G. Repair time - damage event time = duration of event.</p> <p>If respondent has average or historical leak duration based on the nature and circumstances of damages, then these may be applied to like damage events. The emissions factors should be adequately supported and explained in the filing.</p> <p>If actual time stamps and historical averages are not available, then whole days should be used in the engineering calculation. The leak begins with the damage event date thru repair date or December 31st of subject year, whichever is later. E.G. Days Leaking = Repair date - date of damage + 1 day.</p>
Emission Factor or Engineering Estimate (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent

Number of Blowdown Events	If counting a series of small blowdowns associated with services such as MSA replacement, or Service pipe of small diameter or section length then enter total and the formula in the explanation column.
Pipe Size (nominal)	
Length of Pipe	
Pressure (psi)	MOP = maximum operating pressure over the past year
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Component Vented Emissions	
Total Number of Devices	
Device Type	P = pneumatic device H = hydraulic valve operator T = turbine valve operator PR = pressure relief valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Engineering or Manufacturer's based Estimate of Emissions	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Component Fugitive Leaks	
Total Number of Devices	
Device Type	P = pneumatic device H = hydraulic valve operator T = turbine valve operator PR = pressure relief valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Discovery Date (MM/DD/YY)	List the actual discovery date. If the leak was discovered in the year of interest, then we will assume the component was leaking from the beginning of the year for emissions reporting purposes.

Repair Date (MM/DD/YY)	Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair should be included in the blowdowns tab.
Number of Days Leaking	Assume Leaking from January 1 of subject year or prior survey date, whichever is later, thru the repair date (if repaired in year of interest) or December 31 of subject year, whichever is earlier. For O&M discovered leaks, assume that the leak begins with the discovery date <u>thru</u> repair date or December 31st of subject year, whichever is earlier.
Emission Factor (Mscf/day)	
Annual Emission (Mscf)	
Explanatory Notes / Comments	